

<b>Criterion 1</b>	<b>Vision, Mission and Program Educational Objectives</b>	<b>60 M</b>
1.1	State the Vision and Mission of the Department and Institute	5M
1.2	State the Program Educational Objectives (PEOs)	5M
1.3	Indicate where and how the Vision, Mission and PEOs are published and disseminated among stakeholders	10M
1.4	State the process for defining the Vision and Mission of the Department, and PEOs of the program	25M
1.5	Establish consistency of PEOs with Mission of the Department	15M

<b>Criterion 1</b>	<b>Vision, Mission and Program Educational Objectives</b>	<b>60M</b>
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## **1. Vision, Mission and Program Educational Objectives (60)**

### **1.1. State the Vision and Mission of the Department and Institution (5)**

*(Vision statement typically indicates aspirations and Mission statements states the broad approach to achieve aspirations)*

*(Here Institution Vision and Mission statements have been asked to ensure consistency with the department Vision and Mission statements; the assessment of the Institution Vision and Mission will be taken up in the Criterion 10)*

#### **Vision of the Institute**

To be a leading institution of women empowerment producing internationally accepted professionals with psychological strength, emotional balance and ethical values.

#### **Mission of the Institute**

**M1:** To empower women engineers through innovative teaching learning practices.

**M2:** To encourage higher education and research with well-equipped laboratories.

**M3:** To promote entrepreneurship through creativity and innovation.

**M4:** To promote environmental sustainability and inculcate ethical, emotional and social consciousness.

#### **Vision of the Department**

To emerge as a center of excellence in the field of Electronics & Communication Engineering to produce competent women engineers with ethical values.

#### **Mission of the Department**

**M1:** To train globally employable engineers through effective teaching – learning process, industry ready skills and value-added courses.

**M2:** To promote higher education and research initiatives through continuous industry interaction and special skill development programs.

**M3:** To promote ethical values, personality and leadership skills through extra and co-curricular activities.

**1.2. State the Program Educational Objectives (PEOs) (5)**

*(State the PEOs (3 to 5) of program seeking accreditation)*

**Program Educational Objectives (PEOs)**

Graduates will be able to -

**PEO1:** Utilize their updated knowledge and skills to adapt themselves in hardware and software industry to pursue their career successfully.

**PEO2:** Augment their proficiency towards higher education and progress in research.

**PEO3:** Solve contemporary issues related to society and environment with ethical values.

**1.3. Indicate where and how the Vision, Mission and PEOs are published and disseminated among stakeholders (10)**

*(Describe where websites, curricula, posters, etc.) the Vision, Mission and PEOs are published and detail the process which ensures awareness among internal and external stakeholders with effective process implementation).*

*(Internal stakeholders may include management governing body members, faculty, support staff, students etc. and external stakeholders may include employer, industry, alumni, funding agencies, etc.).*

Vision, Mission and PEOs are published in various places using different media and means enabling clear dissemination and display among all the stakeholders. Vision, Mission and PEO statements are communicated to the industry/employer through presentation during industrial visits and other industry institute interactions.

Some of the means are listed below:

❖ **Vision and Mission of the Institute are**

Published in	Disseminated through	Displayed at
<ul style="list-style-type: none"> <li>• Institute Website</li> <li>• Institute Level Newsletter</li> <li>• Institute Brochure</li> <li>• Placement Brochure</li> <li>• Lab Manuals</li> <li>• Assignment Books</li> <li>• Student Mentoring Books</li> </ul>	<ul style="list-style-type: none"> <li>• Faculty Development Programs</li> <li>• Seminars</li> <li>• Workshops</li> <li>• Alumni Meetings</li> <li>• Parents Teacher Meeting</li> <li>• First Year orientation program</li> </ul>	<ul style="list-style-type: none"> <li>• Central Library</li> <li>• Principal Chamber</li> <li>• HoD Chamber</li> <li>• Classrooms</li> <li>• Laboratories</li> <li>• Administrative office</li> <li>• Seminar Hall</li> <li>• Hostel</li> <li>• Canteen</li> <li>• Training &amp; Placement Cell</li> <li>• Notice Boards</li> </ul>

❖ **Vision and Mission of the Department are**

Published in	Disseminated through	Displayed at
<ul style="list-style-type: none"> <li>• Institute Website</li> <li>• Department Newsletter</li> <li>• Department Placement Brochure</li> <li>• Lab Manuals</li> <li>• Assignment Books</li> <li>• Course files</li> <li>• Student Mentoring Books</li> </ul>	<ul style="list-style-type: none"> <li>• Faculty Development Programs</li> <li>• Seminars</li> <li>• Workshops</li> <li>• Alumni Meetings</li> <li>• Parents Teacher Meeting</li> <li>• First Year orientation program</li> <li>• Meeting with HRs during placement drives</li> <li>• Department association activities</li> </ul>	<ul style="list-style-type: none"> <li>• Department Library</li> <li>• HoD Chamber</li> <li>• Notice Boards</li> <li>• Classrooms</li> <li>• Laboratories</li> <li>• Seminar Hall</li> <li>• Staff Rooms</li> </ul>

❖ **Department PEOs are**

Published in	Disseminated through	Displayed at
<ul style="list-style-type: none"> <li>• Institute Website</li> <li>• Department Newsletter</li> <li>• Department Placement Brochure</li> <li>• Lab Manuals</li> <li>• Assignment Books</li> </ul>	<ul style="list-style-type: none"> <li>• Faculty Development Programs</li> <li>• Seminars</li> <li>• Workshops</li> <li>• Alumni Meetings</li> <li>• Parents Teacher Meeting</li> </ul>	<ul style="list-style-type: none"> <li>• Department Library</li> <li>• HoD Chamber</li> <li>• Notice Boards</li> <li>• Classrooms</li> <li>• Laboratories</li> <li>• Seminar Hall</li> </ul>

<ul style="list-style-type: none"> <li>• Course files</li> <li>• Student Mentoring Books</li> </ul>	<ul style="list-style-type: none"> <li>• First Year orientation program</li> <li>• Meeting with HRs during placement drives</li> <li>• Department association activities</li> </ul>	<ul style="list-style-type: none"> <li>• Staff Rooms</li> </ul>
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**1.4. State the process for defining the Vision and Mission of the Department, and PEOs of the program (25)**

*(Articulate the process for defining the Vision and Mission of the department and PEOs of the program)*

**A. Description of process involved in defining the Vision, Mission of the Department (10)**

Vision & Mission of the Department of Electronics and Communication Engineering is drafted, formulated and finalized by active involvement of all the stakeholders in accordance with the Vision & Mission of the Institute.

**Process of defining the Vision & Mission of the Department**

**Step 1:** The Department Advisory Committee (DAC) consists of program coordinator and two senior faculty members in consultation with the stakeholders organize a meeting.

**Step 2:** Formulate preliminary copy of Vision and Mission of the department that is in line with institute Vision and Mission

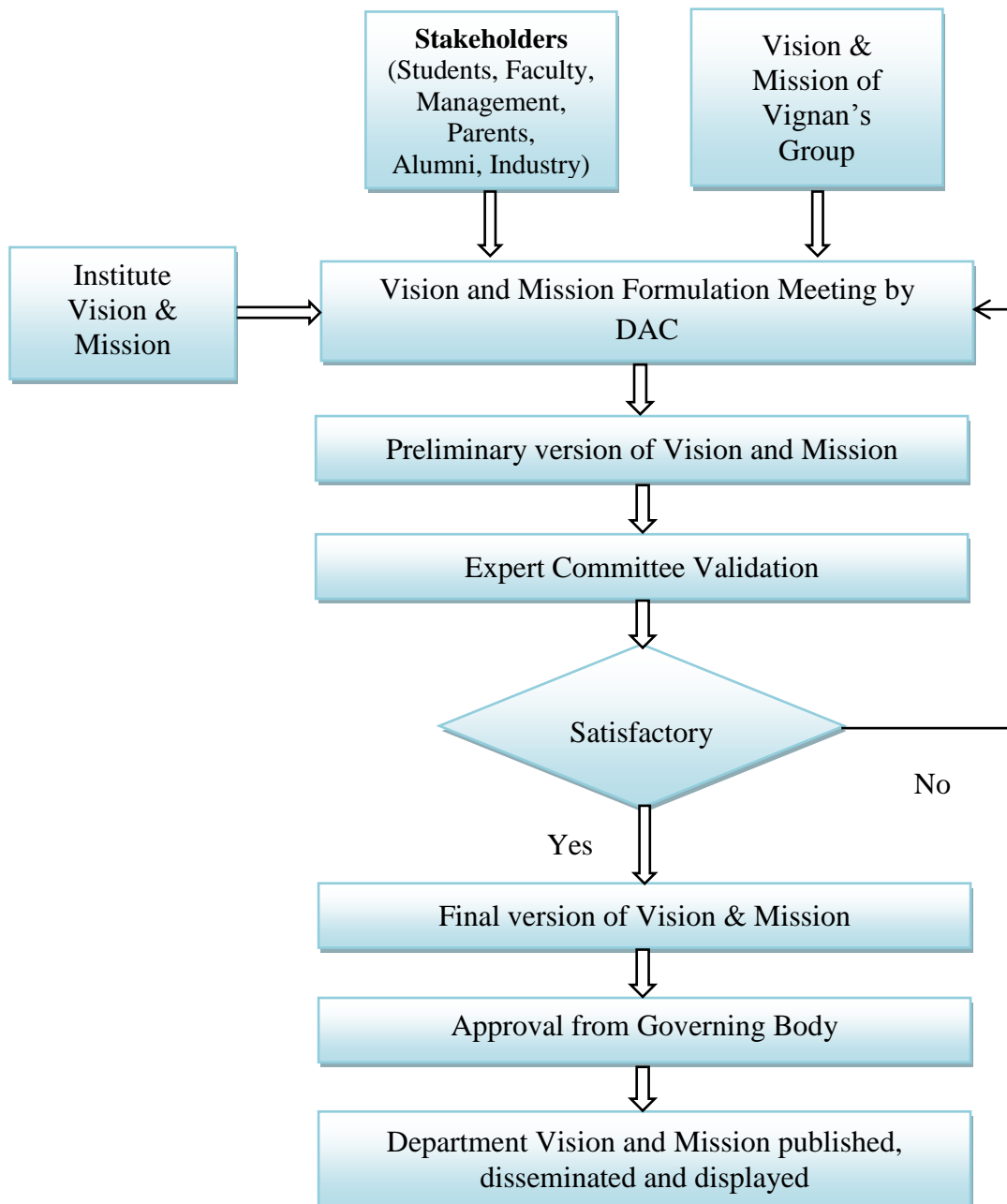
**Step 3:** Expert committee from Vignan's group consists of senior members validates the preliminary copy of Vision and Mission

**Step 4:** If the Vision and Mission statements are not satisfied in expert committee validation the above steps are iterated.

**Step 5:** Department advisory committee refines the Vision and Mission statements by incorporating suggestions taken from the expert committee.

**Step 6:** The final copy of department Vision and Mission is ready for the approval of the Governing body.

**Step 7:** The approved draft of Vision and Mission statements is published, disseminated and displayed.



**Figure B.1.4.1: Flow chart for defining Department Vision and Mission**

**B. Description of process involved in defining the PEOs of the program (15)**

PEOs are drafted, formulated and finalized by active involvement of all the stakeholders

**Step 1:** The Department Advisory Committee (DAC) consists of program coordinator and two senior faculty members in consultation with the stakeholders organize a meeting.

**Step 2:** Formulate preliminary copy of PEOs referring department Vision and Mission along with the POs.

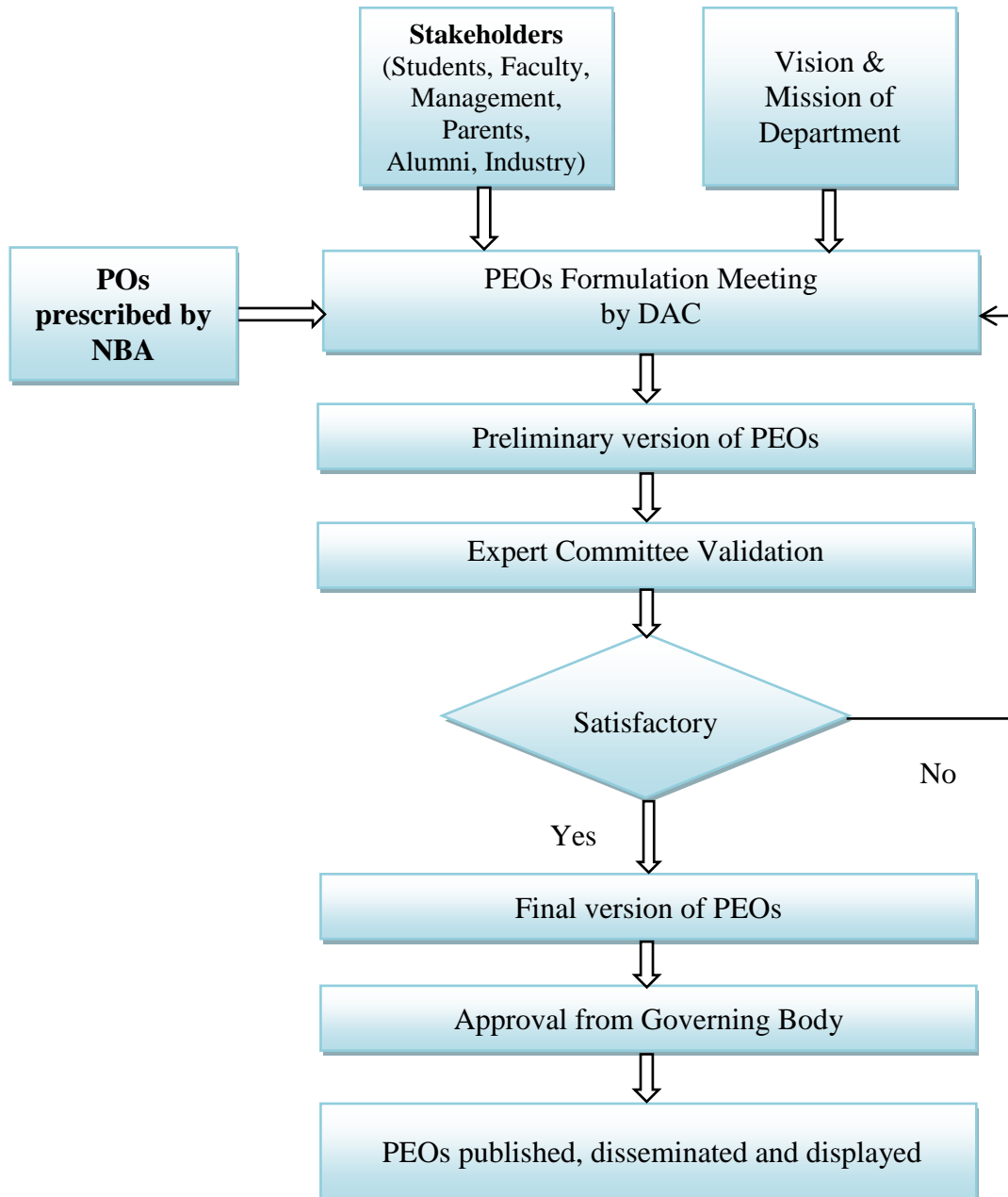
**Step 3:** Expert Committee from Vignan's group consists of senior members validates the preliminary copy of PEOs.

**Step 4:** If the PEO statements are not satisfied in expert committee validation the above steps are iterated.

**Step 5:** Department advisory committee refines the PEO statements by incorporating suggestions taken from the expert committee.

**Step 6:** The final copy of department PEOs is ready for the approval of the governing body.

**Step 7:** The approved copy of PEO statements is published, disseminated and displayed.



**Figure B.1.4.2: Flow chart for defining PEOs**



### 1.5 Establish consistency of PEOs with Mission of the Department (15)

(Generate a Mission of the department- PEOs matrix with justification and rationale of the mapping)

There are three Mission statements and three PEOs for Electronics and Communication Engineering program. The consistency between PEOs and Mission of the department was established by Department advisory committee in consultation with faculty members.

Mission Key elements PEOs	M1 Engineering Knowledge, Employability	M2 Higher Education & research	M3 Personality Skills, Leadership Skills, Ethical values
<b>PEO1:</b> To utilize their updated knowledge and skills to adapt themselves in hardware and software industry to pursue their career successfully.	3	2	1
<b>PEO2:</b> To augment their proficiency towards higher education and progress in research.	3	3	2
<b>PEO3:</b> To solve contemporary issues related to society and environment with ethical values.	2	1	3

**Table B.1.5.1: Mapping of Department Missions with PEOs**

<b>PEO1</b>	<b>M1 Engineering Knowledge, Employability</b>	<b>M2 Higher Education &amp; research</b>	<b>M3 Personality Skills, Leadership Skills, Ethical values</b>
To utilize their updated knowledge and skills to adapt themselves in hardware and software industry to pursue their career successfully.	3	2	1
<p><b>M1:</b> PEO1 has high correlation with Mission1 as the Mission focuses on quality teaching learning processes to acquire engineering knowledge.</p> <p><b>M2:</b> PEO1 has moderate correlation with Mission2 as the Mission focuses on higher education and research initiatives.</p> <p><b>M3:</b> PEO1 has low correlation with Mission3 as the Mission focuses on leadership capabilities of the graduates through various activities.</p>			

**Table B.1.5.2.a: PEO1 Justification with Department Mission key elements**

<b>PEO2</b>	<b>M1 Engineering Knowledge, Employability</b>	<b>M2 Higher Education &amp; research</b>	<b>M3 Personality Skills, Leadership Skills, Ethical values</b>
To augment their proficiency towards higher education and progress in research.	3	3	2
<p><b>M1:</b> PEO2 has high correlation with Mission1 as the Mission focuses more on creating proper academic ambience to embed a strong foundation in engineering to meet the global research challenges.</p> <p><b>M2:</b> PEO2 has high correlation with Mission2 as the Mission focuses more on motivation of graduates to get opportunities, pursue higher education and research through special skill development programs.</p> <p><b>M3:</b> PEO2 has moderate correlation with Mission3 as the Mission focuses on leadership skills through the activities like inter and intra college events.</p>			

**Table B.1.5.2.b: PEO2 Justification with Department Mission key elements**

PEO3	M1 Engineering Knowledge, Employability	M2 Higher Education & research	M3 Personality Skills, Leadership Traits, Ethical values
To solve contemporary issues related to society and environment with ethical values.	2	1	3
<p><b>M1:</b> PEO3 has moderate correlation with Mission 1 as the mission focuses more on employability of graduates in various fields.</p> <p><b>M2:</b> PEO3 has low correlation with Mission 2as the Mission focuses more on higher education and research initiatives.</p> <p><b>M3:</b> PEO3 has high correlation with Mission 3 as the Mission focuses more on Ethical values among the graduates which can be enhanced by value added courses like professional ethics and human values.</p>			

**Table B.1.5.2.c: PEO3 Justification with Department Mission key elements**

**Note:** M1, M2 and M3 are distinct elements of Mission statement. Enter correlation levels 1, 2 or 3 as defined as below.

**1: Slight (Low)      2: Moderate (Medium)      3: Substantial (High)**

<b>Criterion 2</b>	<b>Program Curriculum and Teaching- Learning Processes</b>	<b>120 M</b>
2.1	Program Curriculum	20 M
2.2	Teaching-Learning Process	100 M

<b>Criterion 2</b>	<b>Program Curriculum and Teaching- Learning Processes</b>	<b>120 M</b>
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## 2.1 Program Curriculum (20)

**2.1.1. State the process used to identify extent of compliance of the university curriculum for attaining the program outcomes and program specific outcomes as mentioned in annexure I. Also mention the identified curricular gaps, If any (10)**

*(State the process details; also mention identified curricular gaps)*

Vignan's Institute of Engineering for Women, is affiliated to Jawaharlal Nehru Technological University, Kakinada. The university has framed the curriculum in a methodical way in compliance with AICTE to enrich the learning of the students and make them ready for industry requirements on completion of their degree. JNTU revises the syllabus once in every three years by taking into consideration of the recommendations from various affiliated institutions and in consultation with industry experts, academic experts and all the stakeholders (Alumni, Employer, Industrial expert & Parents). The program runs R19 regulation for current admitted batch (2019), R16 regulation for 2018, 2017 & 2016 admitted batches and R13 regulation for 2015, 2014 & 2013 admitted batches. The following Table B.2.2.1.a shows the regulation followed for the three academic years to the students in their respective year of study.

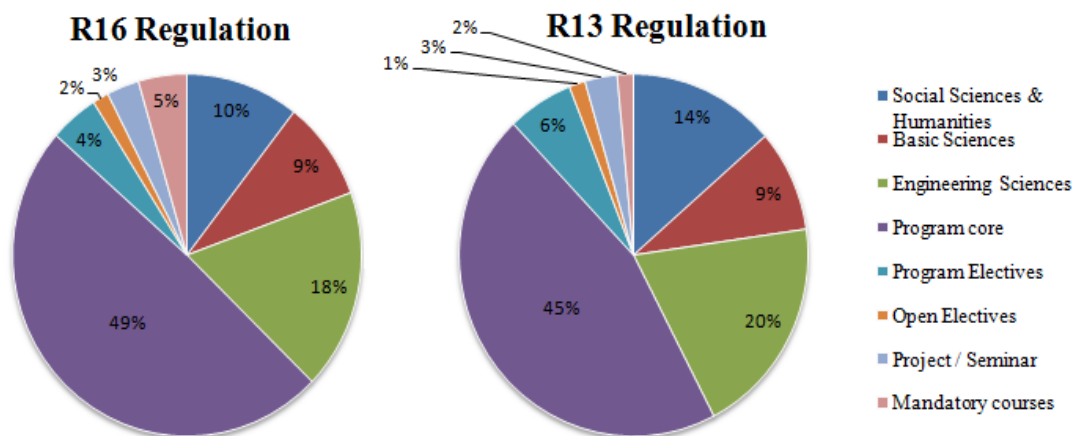
Year	I	II	III	IV
<b>2019-20</b>	R19	R16	R16	R16
<b>2018-19</b>	R16	R16	R16	R13
<b>2017-18</b>	R16	R16	R13	R13

**Table B.2.1.1.a: Regulation followed for respective year of study**

The curriculum given by the university is a composition of subjects related to social sciences & humanities, basic sciences, engineering sciences, program core courses, program electives, open elective courses, project & seminar that make the students apply the learnt engineering knowledge to analyze and design solutions to complex problems with social consciousness and ethics. The course modules include credit and non-credit courses and their percentage contribution to the Electronics & Communication Engineering program is given in Table 2.1.1.b.

Sl. No	Course Modules	R16 Regulation		R13 Regulation	
		Courses	Percentage Contribution	Courses	Percentage Contribution
1	Social Sciences & Humanities	07	10.5%	09	13.6%
2	Basic Sciences	06	08.9%	06	09.1%
3	Engineering Sciences	12	17.9%	13	19.7%
4	Program core	33	49.2%	30	45.5%
5	Program Electives	03	04.5%	04	06.1%
6	Open Electives	01	01.5%	01	01.5%
7	Project / Seminar	02	03.0%	02	03.0%
8	Mandatory courses	03	04.5%	01	01.5%
	<b>Total No. of courses</b>	<b>67</b>	<b>100%</b>	<b>66</b>	<b>100%</b>

**Table B.2.1.1.b: Contribution of course modules to the program curriculum**



**Figure B.2.1.1.a: Course Modules in ECE Program**

The curriculum is designed by the university with total credits of 180 for a student to be eligible to get an undergraduate degree in Electronics & Communication Engineering as recommended by the AICTE shown in Table B.2.2.1.c.

Course Modules	Credits recommended by AICTE	Credits as per University R16 Curriculum	Credits as per University R13 Curriculum
Social Sciences & Humanities	14	19	24
Basic Sciences	30	16	16
Engineering Sciences	30	33	36
Program core	50	88	79
Program Electives	20	09	12
Open Electives	12	03	03
Project / Seminar	20	12	10
<b>Total</b>	<b>176</b>	<b>180</b>	<b>180</b>

**Table B.2.1.1.c: Curriculum compliance with AICTE**

The instructional hours required and credits allotted to the course as per the curriculum for the categorized courses are tabulated in Table B.2.2.1.d.

**Course Modules for ECE Program**

Social Sciences & Humanities Courses for R16 Regulation					
Course code	Name of the Course	Instructional Hours & Credits			
		L	T	P	C
C101	English – I	4	-	-	3
C107	English - Communication Skills Lab -1	-	-	3	2
C110	English – II	4	-	-	3
C114	Environmental Studies	-	-	3	2
C117	English - Communication Skills Lab -2	4	-	-	3
C206	Managerial Economics & Financial Analysis	4	-	-	3
C214	Management Science	4	-	-	3
<b>Total</b>		<b>20</b>	<b>-</b>	<b>6</b>	<b>19</b>

Social Sciences & Humanities Courses for R13 Regulation					
Course code	Name of the Course	Instructional Hours & Credits			
		L	T	P	C
C101	English – I	4	-	-	3
C105	Professional Ethics & Human Values	4	-	-	3
C107	English - Communication Skills Lab -1	-	-	3	2
C110	English – II	4	-	-	3
C117	English - Communication Skills Lab -2	4	-	-	3
C201	Managerial Economics & Financial Analysis	4	-	-	3
C204	Environmental Studies	-	-	3	2
C210	Management Science	4	-	-	3
C309	IPR & Patents	3	-	-	2
<b>Total</b>		<b>27</b>	<b>-</b>	<b>6</b>	<b>24</b>

Basic Sciences Courses for R16 & R13 Regulation					
Course code	Name of the Course	Instructional Hours & Credits			
		L	T	P	C
C102	Mathematics - I	4	-	-	3
C104	Engineering Physics	4	-	-	3
C108	Applied / Engineering Physics Laboratory	-	-	3	2
C111	Mathematics -III	4	-	-	3
C112	Engineering/Applied Chemistry	4	-	-	3
C116	Applied / Engineering Chemistry Laboratory	-	-	3	2
<b>Total</b>		<b>16</b>	<b>-</b>	<b>6</b>	<b>16</b>

Engineering Sciences Courses for R16 Regulation					
Course code	Name of the Course	Instructional Hours & Credits			
		L	T	P	C
C103	Mathematics -II	4	-	-	3
C105	Computer Programming	4	-	-	3
C106	Engineering Drawing	1	-	3	3
C109	Engineering workshop & IT workshop	-	-	3	2
C113	Electrical and Mechanical Technology	4	-	-	3
C115	Data Structures	4	-	3	3
C118	Computer Programming Lab	-	-	3	2
C204	Network Analysis	4	-	-	3
C208	Networks & Electrical Technology Lab	-	-	3	2
C210	Control Systems	4	-	-	3
C301	Computer Architecture and Organization	4	-	-	3
C403	Computer Networks	4	-	-	3
<b>Total</b>		<b>33</b>	<b>-</b>	<b>15</b>	<b>33</b>

Engineering Sciences Courses for R13 Regulation					
Course code	Name of the Course	Instructional Hours & Credits			
		L	T	P	C
C103	Mathematics -II	4	-	-	3
C106	Engineering Drawing	1	-	3	3
C109	Engineering workshop & IT workshop	-	-	3	2
C113	Engineering Mechanics	4	-	-	3
C114	Computer Programming	4	-	-	3
C115	Network Analysis	4	-	3	3
C118	Computer Programming Lab	-	-	3	2
C203	Data Structures	4	-	-	3
C206	Electrical Technology	4	-	-	3
C208	Networks & Electrical Technology Lab	-	-	3	2
C303	Control Systems	4	-	-	3



C402	Computer Networks	4	-	-	3
C404	Computer Architecture and Organization	4	-	-	3
<b>Total</b>		<b>37</b>	<b>-</b>	<b>15</b>	<b>36</b>

<b>Program Core Courses for R16 Regulation</b>					
<b>Course code</b>	<b>Name of the Course</b>	<b>Instructional Hours &amp; Credits</b>			
		<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
C201	Electronic Devices And Circuits	4	-	-	3
C202	Switching Theory And Logic Design	4	-	-	3
C203	Signals And Systems	4	-	-	3
C205	Random Variables And Stochastic Process	4	-	-	3
C207	Electronic Devices and Circuits Lab	-	-	3	2
C209	Electronic Circuit Analysis	4	-	-	3
C211	Electromagnetic Waves & Trans. Lines	4	-	-	3
C212	Analog Communications	4	-	-	3
C213	Pulse & Digital Circuits	4	-	-	3
C215	Electronic Circuit Analysis Lab	-	-	3	2
C216	Analog Communications Lab	-	-	3	2
C302	Linear IC Applications	4	-	-	3
C303	Digital IC Applications	4	-	-	3
C304	Digital Communications	4	-	-	3
C305	Antenna and Wave Propagation	4	-	-	3
C306	Pulse & Digital Circuits Lab	-	-	3	2
C307	Linear IC Applications Lab	-	-	3	2
C308	Digital IC Applications Lab	-	-	3	2
C309	Micro Processors & Micro Controllers	4	-	-	3
C310	Micro Wave Engineering	4	-	-	3
C311	VLSI Design	4	-	-	3
C312	Digital Signal Processing	4	-	-	3
C314	Micro Processors & Micro Controllers Lab	-	-	3	2
C315	VLSI Lab	-	-	3	2
C316	Digital Communications Lab	-	-	3	2
C401	Radar Systems	4	-	-	3
C402	Digital Image Processing	4	-	-	3
C404	Optical Communications	4	-	-	3
C407	Micro Wave Engineering & Optical Lab	-	-	3	2
C408	Digital Signal Processing Lab	-	-	3	2
C409	Cellular and Mobile Communication	4	-	-	3
C410	Electronic Measurements & Instrumentation	4	-	-	3

C411	Satellite Communication	4	-	-	3
<b>Total</b>		<b>88</b>	<b>0</b>	<b>33</b>	<b>88</b>

<b>Program Core Courses for R13 Regulation</b>					
<b>Course code</b>	<b>Name of the Course</b>	<b>Instructional Hours &amp; Credits</b>			
		<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
C202	Electronic Devices And Circuits	4	-	-	3
C205	Signals and Systems	4	-	-	3
C207	Electronic Devices and Circuits Lab	-	-	3	2
C209	Electronic Circuit Analysis	4	-	-	3
C211	Random Variables and Stochastic Process	4	-	-	3
C212	Switching Theory and Logic Design	4	-	-	3
C213	Electromagnetic Waves & Trans. Lines	4	-	-	3
C214	Analog Communications	4	-	-	3
C215	Electronic Circuit Analysis Lab	-	-	3	2
C216	Analog Communications Lab	-	-	3	2
C301	Pulse & Digital Circuits	4	-	-	3
C302	Linear IC Applications	4	-	-	3
C304	Digital IC Applications	4	-	-	3
C305	Antenna and Wave Propagation	4	-	-	3
C306	Pulse & Digital Circuits Lab	-	-	3	2
C307	Linear IC Applications Lab	-	-	3	2
C308	Digital IC Applications Lab	-	-	3	2
C310	Micro Processors & Micro Controllers	4	-	-	3
C311	Digital Signal Processing	4	-	-	3
C312	Digital Communications	4	-	-	3
C313	Micro Wave Engineering	4	-	-	3
C315	Micro Processors & Micro Controllers Lab	-	-	3	2
C316	Digital Communications Lab	-	-	3	2
C317	Digital Signal Processing Lab	-	-	3	2
C401	VLSI Design	4	-	-	3
C403	Digital Image Processing	4	-	-	3
C407	VLSI Lab	-	-	3	2
C408	Micro Wave Engineering & Optical Lab	-	-	3	2
C409	Cellular and Mobile Communication	4	-	-	3
C410	Electronic Measurements & Instrumentation	4	-	-	3
<b>Total</b>		<b>76</b>	<b>-</b>	<b>33</b>	<b>79</b>

Program Elective Courses for R16 Regulation					
Course code	Name of the Course	Instructional Hours & Credits			
		L	T	P	C
C405	TV Engineering	4	-	-	3
C406	Embedded Systems	4	-	-	3
C412	Digital IC design	4	-	-	3
<b>Total</b>		<b>12</b>	<b>-</b>	<b>-</b>	<b>9</b>

Program Elective Courses for R13 Regulation					
Course code	Name of the Course	Instructional Hours & Credits			
		L	T	P	C
C405	Radar Systems	4	-	-	3
C406	Optical Communications	4	-	-	3
C411	Embedded Systems	4	-	-	3
C412	Low Power IC Design	4	-	-	3
<b>Total</b>		<b>16</b>	<b>-</b>	<b>-</b>	<b>12</b>

Open Elective Courses for R16 Regulation					
Course code	Name of the Course	Instructional Hours & Credits			
		L	T	P	C
C313	Oops Through Java	4	-	-	3
<b>Total</b>		<b>4</b>	<b>-</b>	<b>-</b>	<b>3</b>

Open Elective Courses for R13 Regulation					
Course code	Name of the Course	Instructional Hours & Credits			
		L	T	P	C
C314	Bio-Medical Engineering	4	-	-	3
<b>Total</b>		<b>4</b>	<b>-</b>	<b>-</b>	<b>3</b>

Project/ Seminar for R16 Regulation					
Course code	Name of the Course	Instructional Hours & Credits			
		L	T	P	C
C413	Seminar	-	3	-	2
C414	Project	-	-	-	10
<b>Total</b>		<b>-</b>	<b>3</b>	<b>-</b>	<b>12</b>

Project/ Seminar for R13 Regulation					
Course code	Name of the Course	Instructional Hours & Credits			
		L	T	P	C
C318	Seminar	-	2	-	1
C413	Project	-	-	-	9
<b>Total</b>		<b>-</b>	<b>2</b>	<b>-</b>	<b>10</b>

Mandatory Courses (Non-Credit Courses) for R16 Regulation					
Course code	Name of the Course	Instructional Hours & Credits			
		L	T	P	C
	Engineering Physics-Virtual Labs-Assignments	-	-	2	-
	Professional Ethics & Human Values	-	3	-	-
	IPR & Patents	-	2	-	-

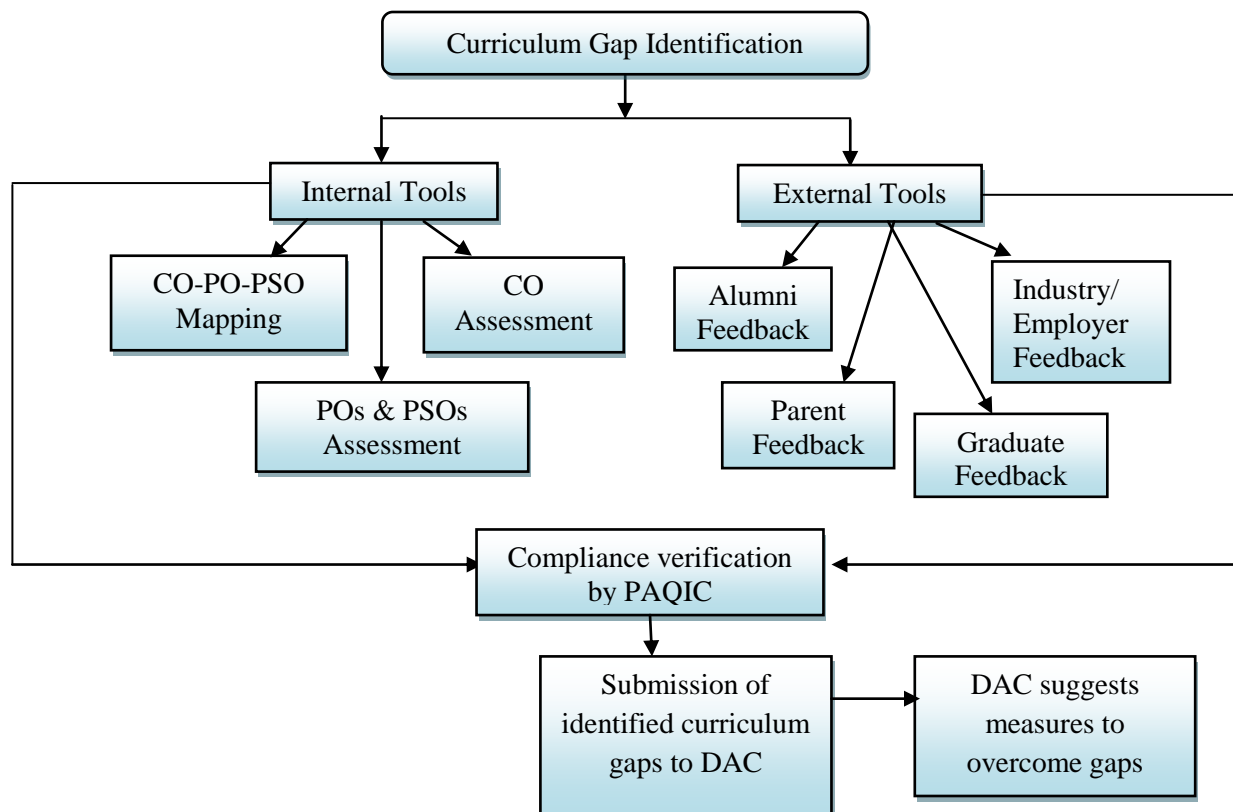
  

Mandatory Courses (Non-Credit Courses) for R13 Regulation					
Course code	Name of the Course	Instructional Hours & Credits			
		L	T	P	C
	Engineering Physics-Virtual Labs-Assignments	-	-	2	-

**Table B.2.1.1.d: Course Modules for ECE Program**

**A. Process used to identify the extent of compliance with university curriculum for attaining POs and PSOs (6)**

The process used to identify the university curriculum compliance for attaining POs and PSOs is shown in Figure B. 2.2.1.b.



**Figure B.2.1.1.b: Tools to identify curriculum gaps**

The tools used to identify the curriculum gaps are categorized as Internal and External tools. The university takes measures for consistent up gradation of the course curriculum in-line with the industry and society needs. Majority of the courses in the curriculum are amalgamated with laboratories and minor projects to enrich the problem-solving skills and to meet the technological changes.

### I. External Tools:

The feedbacks are collected from the stakeholders every year that helps for the continuous improvement of the curriculum.

- **Alumni feedback** is collected from the students placed at various companies in order to identify the gaps regarding the skills required for industry, current trends etc. from their experiences.
- **Parents' feedback** is collected at the end of every year to understand the program gaps and adopt the changes.
- **Industry / Employers' feedback** is collected by the placement officer while visiting the industries in order to understand the industry needs and take necessary actions to fill the gaps.
- **Graduate feedback** is collected from the students at the end of the program by the program coordinator to gauge the degree of attainment of POs & PSOs.

The Table B 2.1.1.e represents the gaps identified through stakeholder feedback

Sl. No	Stakeholder	Gap Identification
1	Alumni	<ul style="list-style-type: none"> <li>• Students require more practical exposure to modern programming tools.</li> <li>• Inculcate research based knowledge to core concepts.</li> </ul>
2	Parent	<ul style="list-style-type: none"> <li>• Induct life-long learning skills, employability skills, ethics and ability to work as an individual and part of a team.</li> </ul>
3	Industry / Employer	<ul style="list-style-type: none"> <li>• Frequent interaction of industry-academia to implement multi-disciplinary projects.</li> </ul>
4	Graduate	<ul style="list-style-type: none"> <li>• Impart more training towards improving soft skills.</li> <li>• Suggested to introduce research based courses in curriculum.</li> </ul>

**Table B 2.1.1.e: Gap identification through stakeholder feedback**

**II. Internal Tools:**

The CO-PO-PSO mapping of the courses in the curriculum is used as components to identify the gaps as internal tools. The feedback collected from various stakeholders is considered as external tools. Each course in the modules contributed to the program has defined Course Outcomes (COs) that emphasize on the contribution towards different Program Outcomes (POs) leading to final attainment of all the POs. The COs is defined in such a way that correlation exists between the defined CO and PO.

The courses designed by the university for the program covers the knowledge, skill, attitude, values and behavioral POs to a large extent that helps the student to become a proficient engineer. The mapping of the courses to POs indicates that the curriculum is in compliance with POs. The courses are mapped to Program Specific Outcomes (PSOs) defined by the program. Mapping of the courses to POs and PSOs helps to identify the extent of curriculum compliance.

The internal tools and the external tools together are necessary to identify the curriculum compliance. Program Assessment and Quality Improvement Committee (PAQIC) of the program discusses the advantages and disadvantages of the current scheme and from the compliance of POs & PSOs, the committee identifies the gaps. A report on identified gaps is submitted to Department Advisory Committee (DAC) that takes necessary action to fulfill the identified curriculum gaps.

The mapping of the curriculum courses to Program Outcomes & Program Specific Outcomes for R13 Regulation is shown below:

Sl. No	Course Code	Name of the Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2
1	C101	English – I		-	-	-	-	2.33	2.33	2.33	2.33	3.00	2.50	3.00	-	-
2	C102	Mathematics - I	3.00	3.00	3.00	3.00	-	3.00	2.50	2.50	-	-	2.50	3.00	-	2.50
3	C103	Mathematics -II	2.83	2.67	2.60	2.60	2.50	-	3.00	3.00	-	-	2.60	2.67	-	2.83
4	C104	Engineering Physics	3.00	2.67	3.00	3.00	-	3.00	2.75	2.75	-	-	-	2.67	2.00	2.25
5	C105	Professional Ethics & Human Values	-	-	2.50	-	-	2.00	2.25	2.25	2.25	-	2.33	2.33	-	-
6	C106	Engineering Drawing	2.67	2.50	2.50	2.50	-	2.50	3.00	3.00	3.00	-	3.00	3.00	-	-
7	C107	English - Communication Skills Lab -1	-	-	-	-	-	2.00	2.00	2.00	3.00	3.00	2.00	3.00	-	-
8	C108	Applied / Engineering Physics Laboratory	3.00	2.50	2.33	2.33	2.33	2.00	2.00	2.00	2.00	2.00	-	2.00	2.00	2.00
9	C109	Engineering workshop & IT workshop	2.17	2.83	2.83	3.00	3.00	2.67	-	2.60	1.50	-	-	2.67	-	-
10	C110	English – II	-	-	-	-	-	2.50	2.33	2.50	2.33	2.50	2.50	3.00	-	-
11	C111	Mathematics -III	3.00	3.00	3.00	2.33	-	2.33	2.33	2.33	-	-	2.33	3.00	-	2.67
12	C112	Engineering Chemistry	3.00	3.00	2.50	2.50	-	2.50	2.50	2.50	-	-	-	2.50	2.33	-
13	C113	Engineering Mechanics	3.00	3.00	3.00	3.00	2.00	2.50	-	-	-	-	-	-	-	-
14	C114	Computer Programming	2.67	2.67	2.50	2.50	2.50	-	-	-	2.50	-	-	2.50	2.00	2.80
15	C115	Network Analysis	3.00	3.00	3.00	3.00	2.00	2.50	-	-	-	-	-	-	2.67	2.83
16	C116	Applied / Engineering Chemistry Laboratory	2.67	2.33	-	2.50	2.50	-	2.00	-	2.00	2.00	-	2.00	2.67	2.00
17	C117	English - Communication Skills Lab -2	-	-	-	-	-	2.00	2.00	2.00	3.00	3.00	2.00	3.00	-	-
18	C118	Computer Programming Lab	3.00	2.67	2.33	2.33	2.33	-	-	2.33	2.33	-	-	-	2.33	2.67
19	C201	Managerial Economics & Financial Analysis	3.00	3.00	3.00	3.00	3.00	3.00	2.33	2.50	2.00	2.00	2.83	3.00	-	-
20	C202	Electronic Devices and Circuits	2.00	2.50	2.40	2.25	1.00	1.67	2.33	2.50	2.25	1.67	-	2.17	3.00	2.33
21	C203	Data Structures	2.00	2.17	2.20	2.25	2.00	2.80	-	1.40	1.75	-	-	1.67	-	-
22	C204	Environmental Studies	-	-	-	-	-	1.50	3.00	2.00	-	2.50	1.67	2.00	-	-
23	C205	Signals And Systems	2.00	2.67	2.50	1.75	1.33	2.67	-	-	2.50	1.67	1.33	2.00	2.50	2.83

24	C206	Electrical Technology	2.17	2.67	2.83	2.25	-	-	2.00	-	2.67	-	1.33	-	-	1.75
25	C207	Electronic Devices and Circuits Lab	2.33	3.00	3.00	3.00	-	2.50	-	3.00	2.67	2.50	1.00	2.00	3.00	2.33
26	C208	Networks & Electrical Technology Lab	2.33	2.67	2.67	2.00	-	2.50	-	1.67	2.67	2.00	1.50	-	-	2.00
27	C209	Electronic Circuit Analysis	2.33	3.00	3.00	2.20	1.00	2.33	2.00	-	3.00	1.67	2.00	2.40	2.33	1.83
28	C210	Management Science	3.00	3.00	3.00	-	-	3.00	3.00	2.67	2.00	2.00	2.75	2.00	-	-
29	C211	Random Variables And Stochastic Process	2.00	2.67	2.50	1.75	1.67	2.33	2.00	2.67	3.00	2.00	1.75	2.80	-	3.00
30	C212	Switching Theory And Logic Design	2.17	2.17	2.40	2.00	1.67	-	-	2.00	2.67	1.67	1.75	2.60	3.00	2.00
31	C213	Electromagnetic Waves & Trans. Lines	2.00	2.50	2.60	2.00	1.50	2.00	2.00	-	2.67	1.67	1.50	1.60	-	2.00
32	C214	Analog Communications	2.17	2.83	2.80	1.75	1.50	1.50	2.00	2.50	2.33	1.75	2.00	2.17	-	2.83
33	C215	Electronic Circuit Analysis Lab	3.00	3.00	3.00	2.00	2.00	2.50	-	2.33	2.00	2.50	1.50	2.00	3.00	3.00
34	C216	Analog Communications Lab	3.00	2.67	3.00	2.50	2.00	3.00	-	2.50	2.00	2.00	-	2.00	2.00	3.00
35	C301	Pulse & Digital Circuits	2.17	2.83	3.00	2.20	2.00	-	2.67	1.75	2.75	1.50	2.00	2.20	3.00	2.67
36	C302	Linear IC Applications	3.00	2.83	3.00	2.00	1.67	1.33	2.33	2.00	2.50	2.25	1.67	2.25	2.17	2.83
37	C303	Control Systems	3.00	2.83	2.17	1.80	1.33	-	2.50	-	2.67	1.40	1.67	2.00	2.00	2.50
38	C304	Digital IC Applications	3.00	3.00	2.83	1.80	1.75	2.50	2.75	1.67	3.00	2.00	2.00	2.50	2.17	2.67
39	C305	Antenna and Wave Propagation	2.17	2.17	2.33	2.20	2.00	1.67	2.25	1.75	2.75	1.50	2.00	2.60	-	2.67
40	C306	Pulse & Digital Circuits Lab	3.00	3.00	3.00	2.33	-	2.00	-	1.67	2.00	2.50	2.50	2.33	2.00	3.00
41	C307	Linear IC Applications Lab	3.00	2.33	2.67	2.00	-	2.50	-	2.50	2.50	2.50	2.50	2.00	3.00	3.00
42	C308	Digital IC Applications Lab	3.00	2.33	2.67	2.33	2.67	2.50	-	2.33	2.33	1.50	2.50	2.67	2.33	2.50
43	C309	IPR & Patents	-	-	-	-	3.00	2.67	3.00	2.40	3.00	2.50	2.75	2.83	-	-
44	C310	Micro Processors & Micro Controllers	2.33	2.00	2.17	1.67	2.00	2.75	2.25	2.25	2.75	2.67	2.67	2.75	2.00	2.50
45	C311	Digital Signal Processing	2.83	2.33	2.00	1.33	2.25	2.50	2.33	-	2.75	2.75	2.25	2.80	-	3.00



46	C312	Digital Communications	3.00	2.17	2.17	2.40	2.25	2.50	2.67	1.50	-	-	2.00	2.50	2.00	3.00
47	C313	Micro Wave Engineering	2.83	2.17	1.83	2.25	-	2.33	2.50	1.80	-	2.00	1.75	2.00	-	2.83
48	C314	Bio-Medical Engineering	2.67	2.17	2.00	1.75	-	2.50	2.67	1.50	-	2.67	2.50	2.67	-	2.80
49	C315	Micro Processors & Micro Controllers Lab	3.00	2.67	2.33	2.50	2.67	2.50	-	2.33	2.33	2.00	2.50	2.33	2.33	2.00
50	C316	Digital Communications Lab	3.00	2.33	2.50	2.33	-	-	-	2.00	2.33	2.00	1.00	2.33	-	3.00
51	C317	Digital Signal Processing Lab	3.00	2.33	2.33	2.50	3.00	-	-	2.00	2.33	2.00	2.00	2.33	-	3.00
52	C318	Seminar	3.00	3.00	3.00	3.00	1.00	3.00	2.50	3.00	3.00	3.00	3.00	3.00	3.00	3.00
53	C401	VLSI Design	3.00	2.33	1.67	1.75	2.25	2.33	-	1.75	2.00	-	2.67	2.60	2.33	2.00
54	C402	Computer Networks	2.83	2.17	1.67	1.67	-	2.50	-	1.50	2.00	-	2.50	2.00	-	2.60
55	C403	Digital Image Processing	3.00	2.17	1.83	1.60	2.00	2.50	-	1.50	2.50	2.50	2.50	2.40	-	3.00
56	C404	Computer Architecture and Organization	2.67	2.33	2.00	1.50	-	-	-	2.00	1.50	2.00	2.33	-	2.00	-
57	C405	Radar Systems	2.83	2.17	2.00	2.00	-	2.67	2.20	-	1.60	1.80	2.25	2.33	-	3.00
58	C406	Optical Communications	2.83	2.33	2.17	1.67	-	2.33	2.50	-	2.50	-	2.75	2.25	-	3.00
59	C407	VLSI Lab	3.00	2.33	1.67	2.00	2.33	2.50	2.50	1.50	2.50	2.50	2.50	2.33	3.00	-
60	C408	Micro Wave Engineering & Optical Lab	3.00	2.33	1.67	2.00	-	2.50	-	1.50	2.67	2.00	2.00	2.33	3.00	3.00
61	C409	Cellular and Mobile Communication	2.83	2.33	2.25	1.80	-	1.75	2.67	1.75	2.00	2.00	2.00	2.25	-	3.00
62	C410	Electronic Measurements & Instrumentation	2.67	2.33	2.33	2.20	-	2.33	2.50	-	2.50	2.50	2.75	2.20	2.80	2.80
63	C411	Embedded Systems	2.83	2.17	2.33	2.17	2.25	2.75	2.50	1.75	2.50	2.50	2.75	2.00	3.00	2.33
64	C412	Low Power IC Design	2.83	2.00	2.20	2.00	2.00	2.50	2.50	1.75	2.50	2.50	1.75	2.00	3.00	-
65	C413	Project & Seminar	3.00	3.00	3.00	2.50	3.00	3.00	2.25	3.00	3.00	2.50	3.00	3.00	3.00	3.00
<b>Average PO-PSO Mapping</b>			<b>2.72</b>	<b>2.57</b>	<b>2.50</b>	<b>2.22</b>	<b>2.09</b>	<b>2.41</b>	<b>2.42</b>	<b>2.16</b>	<b>2.43</b>	<b>2.17</b>	<b>2.18</b>	<b>2.41</b>	<b>2.51</b>	<b>2.63</b>
<b>Average Percentage</b>			<b>90.7</b>	<b>85.5</b>	<b>83.2</b>	<b>74.0</b>	<b>69.5</b>	<b>80.3</b>	<b>80.7</b>	<b>71.8</b>	<b>81.0</b>	<b>72.2</b>	<b>72.5</b>	<b>80.1</b>	<b>83.8</b>	<b>87.6</b>

**Table B.2.1.1.f: Average Mapping of Courses to POs & PSOs for R13 Regulation**

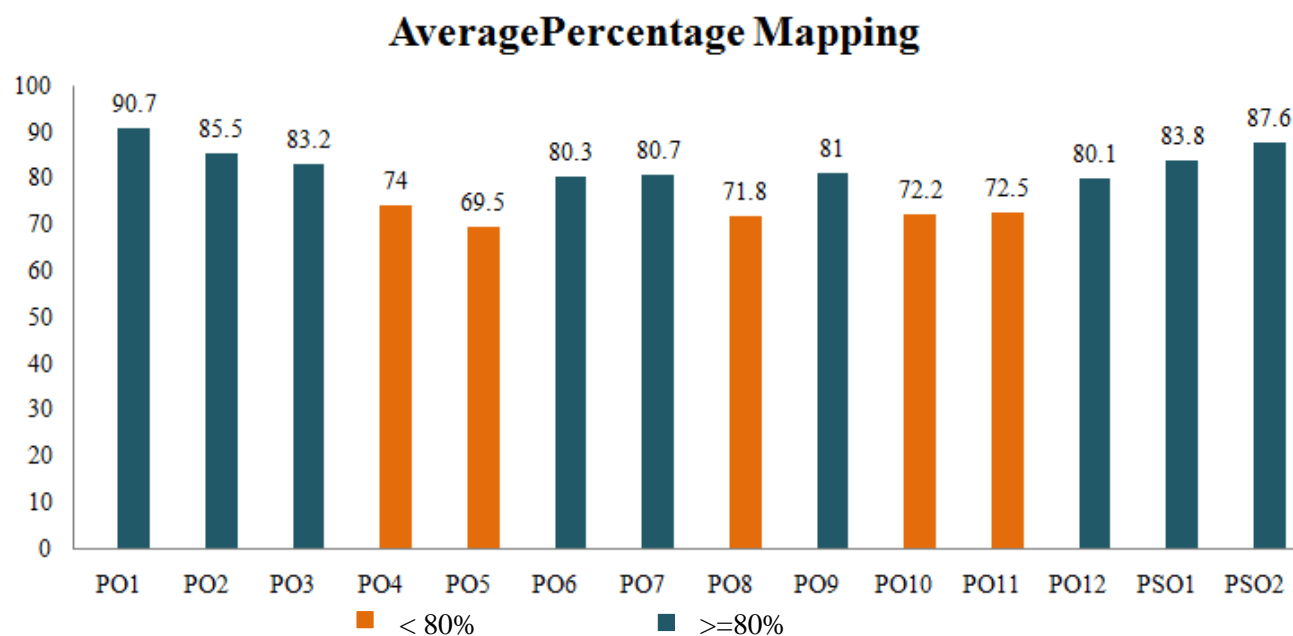
**Compliance of Program Curriculum with POs & PSOs for R13 Regulation:**

The mapping of courses in the program to POs and PSOs shown in the Table B.2.1.1.f indicate the compliance of program curriculum in R13 regulation with POs & PSOs. From the mapping table, the following observations are made to define the compliance as:

- The social sciences and humanities courses such as English, Communication Skills lab, Environmental studies maps PO9, PO10, PO11, PO12 to 70% - 80% that promotes team spirit, communication skills and life-long capability and PO6, PO7 to 80% to understand the impact of professional engineering courses to assess societal needs. The management courses maps PO1, PO2, PO3, PO4 and PO5 to 65% - 90%.
- The basic sciences courses such as Mathematics, Engineering Physics and Engineering Chemistry maps PO1, PO2 and PO3 to 80% - 85% and PO4, PO5, PO6, PO11 and PO12 to 70% - 80% that helps to formulate and design solutions to complex engineering problems and engage in life-long learning to adapt to technological changes.
- The engineering sciences courses such as Computer Programming, Data Structures, Computer Architecture and Organization, Computer Networks etc. help to use research based knowledge to solve contemporary and maps PO1, PO2, PO3, PO6, PO7, and PSO2 to around 80% - 90%.
- The program core courses such as Electronic Devices & Circuits, Signals & Systems, Switching Theory and Logic Design and Analog Communication etc. maps to around 80%-90% of PO1, PO2 and PO3 and 85% - 90% to PSO1 and PSO2 that apply the basic engineering principles to formulate, analyze and design a solution to complex engineering problems related to ECE.
- The program elective courses such as Embedded Systems and Low Power IC design make use of modern engineering tools for research analysis & interpretation covering PO1, PO5, PSO1 & PSO2 to around 80% - 95%. The open elective course of the program covers PO1, PO6 and PO7, PO10, PO11, PO12 and PSO2 to around 80% - 90%.
- The mapping of Project & Seminar specifies industry interaction and other activities that promote team spirit, social consciousness to understand the need for environmental context and sustainable development that strongly maps all the POs and PSOs to around 90% - 95%.

POs/ PSOs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
<b>Average PO-PSO mapping</b>	2.72	2.57	2.50	2.22	2.09	2.41	2.42	2.16	2.43	2.17	2.18	2.41	2.51	2.63
<b>Average Percentage</b>	90.7	85.5	83.2	74.0	69.5	80.3	80.7	71.8	81.0	72.2	72.5	80.1	83.8	87.6

**Table B.2.1.1.g: Average mapping to courses in R13 curriculum to POs & PSOs**



**Figure B.2.1.1.c: R13 Curriculum compliance to POs & PSOs**

Blue color histogram represents the POs & PSOs whose average percentage mapping is more than 80 % and orange color represents below 80% for R13 Regulations as shown in Figure B.2.1.1.c.

The mapping of the curriculum courses to Program Outcomes & Program Specific Outcomes for R16 Regulation is shown below:

Sl. No	Course Code	Name of the Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2
1	C101	English – I		-	-	-	-	2.33	2.33	2.33	2.33	3.00	2.50	3.00	-	-
2	C102	Mathematics - I	3.00	3.00	3.00	3.00	-	3.00	2.50	2.50	-	-	2.50	3.00	-	2.50
3	C103	Mathematics -II	2.83	2.67	2.60	2.60	2.50	-	3.00	3.00	-	-	2.60	2.67	-	2.83
4	C104	Engineering Physics	3.00	2.67	3.00	3.00	-	3.00	2.75	2.75	-	-	-	2.67	2.00	2.25
5	C105	Computer Programming	2.67	2.67	2.50	2.50	2.50	-	-	-	2.50	-	-	2.50	2.00	2.80
6	C106	Engineering Drawing	2.67	2.50	2.50	2.50	-	2.50	3.00	3.00	3.00	-	3.00	3.00	-	-
7	C107	English - Communication Skills Lab -1	-	-	-	-	-	2.00	2.00	2.00	3.00	3.00	2.00	3.00	-	-
8	C108	Applied / Engineering Physics Laboratory	3.00	2.50	2.33	2.33	2.33	2.00	2.00	2.00	2.00	2.00	-	2.00	2.00	2.00
9	C109	Engineering workshop & IT workshop	2.17	2.83	2.83	3.00	3.00	2.67	-	2.60	1.50	-	-	2.67	-	-
10	C110	English – II	-	-	-	-	-	2.50	2.33	2.50	2.33	2.50	2.50	3.00	-	-
11	C111	Mathematics -III	3.00	3.00	3.00	2.33	-	2.33	2.33	2.33	-	-	2.33	3.00	-	2.67
12	C112	Engineering/Applied Chemistry	3.00	3.00	2.50	2.50	-	2.50	2.50	2.50	-	-	-	2.50	2.33	-
13	C113	Electrical and Mechanical Technology	3.00	3.00	3.00	3.00	2.00	2.50	-	-	-	-	-	-	-	-
14	C114	Environmental Studies	-	-	-	-	-	1.50	3.00	2.00	-	2.50	1.67	2.00	-	-
15	C115	Data Structures	2.00	2.17	2.20	2.25	2.00	2.80	-	1.40	1.75	-	-	1.67	-	-
16	C116	Applied / Engineering Chemistry Laboratory	2.67	2.33	-	2.50	2.50	-	2.00	-	2.00	2.00	-	2.00	2.67	2.00
17	C117	English - Communication Skills Lab -2	-	-	-	-	-	2.00	2.00	2.00	3.00	3.00	2.00	3.00	-	-
18	C118	Computer Programming Lab	3.00	2.67	2.33	2.33	2.33	-	-	2.33	2.33	-	-	-	2.33	2.67
19	C201	Electronic Devices and Circuits	2.00	2.50	2.40	2.25	1.00	1.67	2.33	2.50	2.25	1.67	-	2.17	3.00	2.33
20	C202	Switching Theory and Logic Design	2.17	2.17	2.40	2.00	1.67	-	-	2.00	2.67	1.67	1.75	2.60	3.00	2.00
21	C203	Signals And Systems	2.00	2.67	2.50	1.75	1.33	2.67	-	-	2.50	1.67	1.33	2.00	2.50	2.83
22	C204	Network Analysis	3.00	3.00	3.00	3.00	2.00	2.50	-	-	-	-	-	-	2.67	2.83

23	C205	Random Variables and Stochastic Process	2.00	2.67	2.50	1.75	1.67	2.33	2.00	2.67	3.00	2.00	1.75	2.80	-	3.00
24	C206	Managerial Economics & Financial Analysis	3.00	3.00	3.00	3.00	3.00	3.00	2.33	2.50	2.00	2.00	2.83	3.00	-	-
25	C207	Electronic Devices and Circuits Lab	2.33	3.00	3.00	3.00	-	2.50	-	3.00	2.67	2.50	1.00	2.00	3.00	2.33
26	C208	Networks & Electrical Technology Lab	2.33	2.67	2.67	2.00	-	2.50	-	1.67	2.67	2.00	1.50	-	-	2.00
27	C209	Electronic Circuit Analysis	2.33	3.00	3.00	2.20	1.00	2.33	2.00	-	3.00	1.67	2.00	2.40	2.33	1.83
28	C210	Control Systems	3.00	2.83	2.17	1.80	1.33	-	2.50	-	2.67	1.40	1.67	2.00	2.00	2.50
29	C211	Electromagnetic Waves & Trans. Lines	2.00	2.50	2.60	2.00	1.50	2.00	2.00	-	2.67	1.67	1.50	1.60	-	2.00
30	C212	Analog Communications	2.17	2.83	2.80	1.75	1.50	1.50	2.00	2.50	2.33	1.75	2.00	2.17	-	2.83
31	C213	Pulse & Digital Circuits	2.17	2.83	3.00	2.20	2.00	-	2.67	1.75	2.75	1.50	2.00	2.20	3.00	2.67
32	C214	Management Science	3.00	3.00	3.00	-	-	3.00	3.00	2.67	2.00	2.00	2.75	2.00	-	-
33	C215	Electronic Circuit Analysis Lab	3.00	3.00	3.00	2.00	2.00	2.50	-	2.33	2.00	2.50	1.50	2.00	3.00	3.00
34	C216	Analog Communications Lab	3.00	2.67	3.00	2.50	2.00	3.00	-	2.50	2.00	2.00	-	2.00	2.00	3.00
35	C301	Computer Architecture and Organization	2.67	2.33	2.00	1.50	-	-	-	2.00	1.50	2.00	2.33	-	2.00	-
36	C302	Linear IC Applications	3.00	2.83	3.00	2.00	1.67	1.33	2.33	2.00	2.50	2.25	1.67	2.25	2.17	2.83
37	C303	Digital IC Applications	3.00	3.00	2.83	1.80	1.75	2.50	2.75	1.67	3.00	2.00	2.00	2.50	2.17	2.67
38	C304	Digital Communications	3.00	2.17	2.17	2.40	2.25	2.50	2.67	1.50	-	-	2.00	2.50	2.00	3.00
39	C305	Antenna and Wave Propagation	2.17	2.17	2.33	2.20	2.00	1.67	2.25	1.75	2.75	1.50	2.00	2.60	-	2.67
40	C306	Pulse & Digital Circuits Lab	3.00	3.00	3.00	2.33	-	2.00	-	1.67	2.00	2.50	2.50	2.33	2.00	3.00
41	C307	Linear IC Applications Lab	3.00	2.33	2.67	2.00	-	2.50	-	2.50	2.50	2.50	2.50	2.00	3.00	3.00
42	C308	Digital IC Applications Lab	3.00	2.33	2.67	2.33	2.67	2.50	-	2.33	2.33	1.50	2.50	2.67	2.33	2.50
43	C309	Micro Processors & Micro Controllers	2.33	2.00	2.17	1.67	2.00	2.75	2.25	2.25	2.75	2.67	2.67	2.75	2.00	2.50
44	C310	Micro Wave Engineering	3.00	2.33	1.67	1.75	2.25	2.33	-	1.75	2.00	-	2.67	2.60	2.33	2.00
45	C311	VLSI Design	2.83	2.33	2.67	2.33	2.25	2.50	2.33	-	2.75	2.75	2.25	2.80	3.00	-

46	C312	Digital Signal Processing	2.64	2.64	2.54	2.34	2.33	2.80	-		2.50	-	-	2.23	-	2.60
47	C313	Oops Through Java	2.83	2.17	1.83	2.25	-	2.33	2.50	1.80	-	2.00	1.75	2.00	-	2.83
48	C314	Micro Processors & Micro Controllers Lab	3.00	2.67	2.33	2.50	2.67	2.50	-	2.33	2.50	2.00	2.50	2.33	2.33	2.00
49	C315	VLSI Lab	3.00	2.33	1.67	2.21	2.67	2.50	2.50	1.50	2.50	2.50	2.50	2.40	3.00	-
50	C316	Digital Communications Lab	3.00	2.33	2.50	2.33	-	-	-	2.00	2.33	2.00	1.00	2.33	-	3.00
51	C401	Radar Systems	2.83	2.17	2.00	2.23	-	2.67	2.20	-	1.60	2.50	2.25	2.33	-	3.00
52	C402	Digital Image Processing	3.00	2.17	1.83	1.60	2.25	2.50	-	1.50	2.50	2.50	2.50	2.40	-	3.00
53	C403	Computer Networks	2.83	2.17	1.67	1.67	-	2.50	-	1.50	2.00	-	2.50	2.25	-	2.60
54	C404	Optical Communications	2.83	2.33	2.17	2.23	-	2.33	2.50	-	2.50	-	2.75	2.25	-	3.00
55	C405	TV Engineering	2.83	2.64	2.52	2.23	-	2.33	2.67	1.75	2.50	2.00	2.00	2.25	-	3.00
56	C406	Embedded Systems	2.83	2.17	2.33	2.17	2.25	2.75	2.50	1.75	2.50	2.50	2.75	2.25	3.00	2.33
57	C407	Micro Wave Engineering & Optical Lab	3.00	2.33	1.67	2.00	-	2.50	-	1.50	2.67	2.00	2.00	2.33	3.00	3.00
58	C408	Digital Signal Processing Lab	3.00	2.33	2.33	2.50	3.00	-	-	2.00	2.33	2.00	2.00	2.33	-	3.00
59	C409	Cellular and Mobile Communication	2.83	2.33	2.25	1.80	-	1.75	2.67	1.75	2.50	2.00	2.00	2.25	-	3.00
60	C410	Electronic Measurements & Instrumentation	2.67	2.33	2.33	2.20	-	2.33	2.50	-	2.50	2.50	2.75	2.20	2.80	2.80
61	C411	Satellite Communication	2.83	2.64	2.43	2.21	-	2.33	2.50	-	2.50	-	2.75	2.25	-	3.00
62	C412	Digital IC design	2.83	2.34	2.32	2.23	2.23	2.50	2.50		2.50	2.50	2.00	2.00	3.00	-
63	C413	Seminar	3.00	3.00	3.00	3.00	1.00	3.00	2.50	3.00	3.00	3.00	3.00	3.00	3.00	3.00
64	C414	Project	3.00	3.00	3.00	2.50	3.00	3.00	2.25	3.00	3.00	2.50	3.00	3.00	3.00	3.00
<b>Average PO-PSO Mapping</b>			<b>2.73</b>	<b>2.58</b>	<b>2.50</b>	<b>2.25</b>	<b>2.09</b>	<b>2.41</b>	<b>2.42</b>	<b>2.17</b>	<b>2.43</b>	<b>2.18</b>	<b>2.19</b>	<b>2.41</b>	<b>2.51</b>	<b>2.66</b>
<b>Average Percentage</b>			<b>91.1</b>	<b>86.0</b>	<b>83.4</b>	<b>75.0</b>	<b>69.6</b>	<b>80.5</b>	<b>80.8</b>	<b>72.2</b>	<b>81.1</b>	<b>72.6</b>	<b>73.1</b>	<b>80.2</b>	<b>83.8</b>	<b>88.6</b>

Table B.2.1.1.h: Average Mapping of Courses to POs &amp; PSOs for R16 Regulation

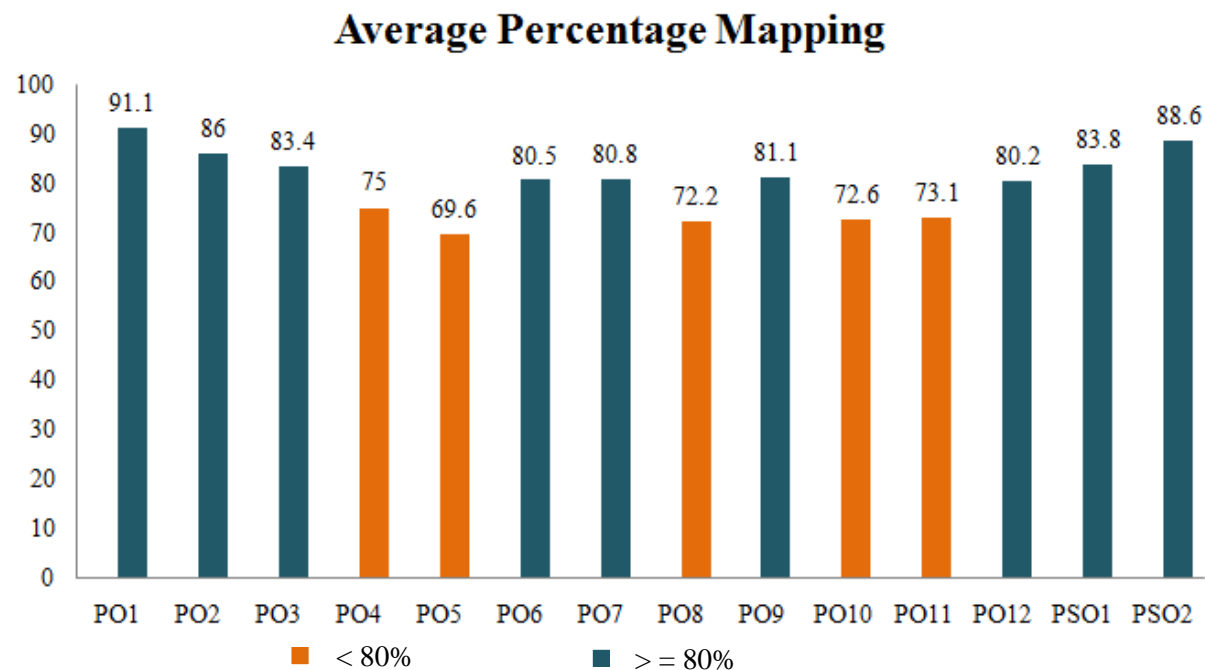
**Compliance of Program Curriculum with PO & PSO for R16 Regulation:**

The mapping of courses in the program to POs and PSOs shown in the Table B.2.1.1.h indicate the compliance of program curriculum in R16 regulation with POs & PSOs. From the mapping table, the following observations are made to define the compliance as:

- The social sciences and humanities courses such as English, Communication Skills lab, Environmental studies maps PO9, PO10, PO11 and PO12 to 70% - 80% and PO6, PO7 to 80%. The management courses maps PO1, PO2, PO3 and PO4 to 75% - 90%. The Professional Ethics & Human Values, IPR & Patents are considered as Mandatory / Non-Credit courses in R16 regulation.
- The basic sciences courses such as Mathematics, Engineering Physics and Engineering Chemistry maps PO1, PO2 and PO3 to 80% - 90% and PO4, PO5, PO6, PO11 and PO12 to 70% - 80% that helps to formulate and design solutions to complex engineering problems and engage in life-long learning to adapt to technological changes similar to that in R13 regulation.
- The engineering sciences courses such as Computer Programming, Data Structures, and Computer Networks etc. help to select an appropriate technique to solve contemporary issues by using modern tools and maps PO1, PO2, PO3, PO5, PSO1 and PSO2 to around 70% - 95%.
- The program core courses such as Electronic Devices & Circuits, Signals & Systems, Switching Theory and Logic Design and Analog Communication etc. maps to around 90%-95% of PO1, PO2 and PO3 that apply the basic engineering principles to formulate, analyze and design a solution to complex engineering problems related to ECE. Few core courses such as Satellite Engineering, Radar Systems and Optical Communication are introduced in R16 curriculum that maps PO1, PO2, PO3 and PO4 to around 75% - 90%.
- The program elective courses such as Embedded Systems and Digital IC design make use of modern engineering tools for research analysis & interpretation covering PO4 & PO5 to 70%-75% and PSO1 & PSO2 to around 80% - 85%. The open elective course in R16 regulation covers PO1, PO3 and PO9 to around 80% and PO4, PO5 to 70%.
- The mapping of Project & Seminar specifies industry interaction and other activities that promote team spirit, social consciousness to understand the need for environmental context and sustainable development that strongly maps all the POs and PSOs to around 90% - 95%.

POs/ PSOs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
<b>Average PO-PSO mapping</b>	2.73	2.58	2.50	2.25	2.09	2.41	2.42	2.17	2.43	2.18	2.19	2.41	2.51	2.66
<b>Average Percentage</b>	91.1	86.0	83.4	75.0	69.6	80.5	80.8	72.2	81.1	72.6	73.1	80.2	83.8	88.6

**Table B.2.1.i: Average mapping to courses in R16 curriculum to POs & PSOs**



**Figure B.2.1.1.d: R16 Curriculum compliance to POs & PSOs**

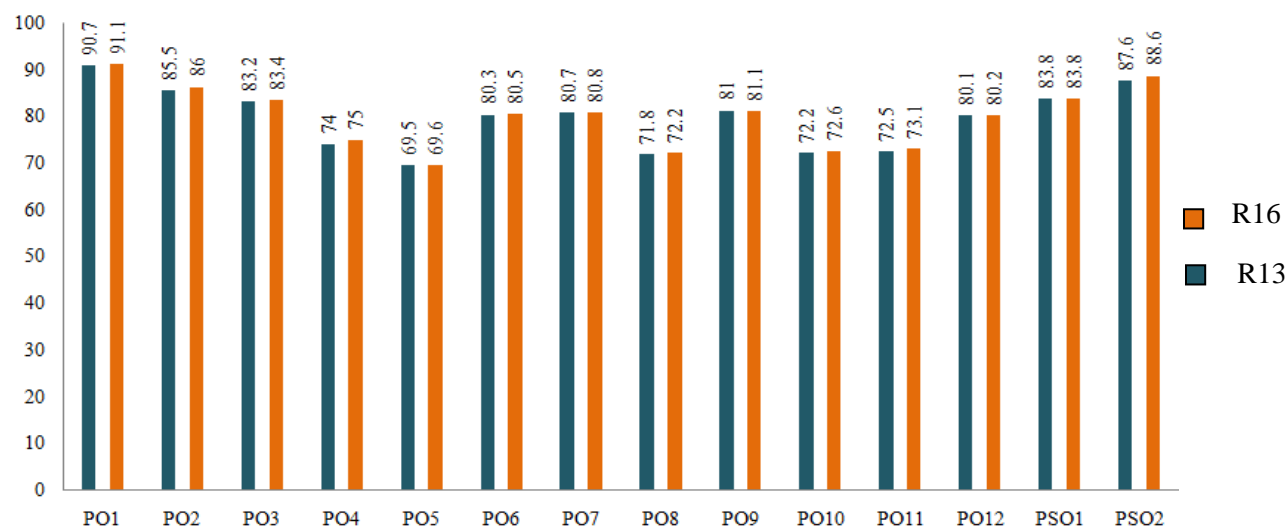
Blue color histogram represents the POs & PSOs whose average percentage mapping is more than 80 % and orange color represents below 80% for R16 Regulations as shown in Figure B.2.1.1.d.



The comparison of mapping of R13 and R16 regulation courses to POs and PSOs shown in Table B.2.1.1.j shows that the university considers the recommendations of all the stakeholders and affiliated institutions in improving the quality of engineering education through curriculum refinement. The mapping of courses to POs and PSOs is improved in R16 regulation compared to R13 regulation as indicated in Figure B. 2.1.1.e.

POs/PSOs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
<b>R13 % Average Mapping</b>	90.7	85.5	83.2	74.0	69.5	80.3	80.7	71.8	81.0	72.2	72.5	80.1	83.8	87.6
<b>R16 % Average Mapping</b>	91.1	86.0	83.4	75.0	69.6	80.5	80.8	72.2	81.1	72.6	73.1	80.2	83.8	88.6

**Table B.2.1.1.j: Comparison of R13 & R16 average mapping to POs & PSOs**



**Figure B.2.1.1.e: Comparison of R13 & R16 Regulation Average Mapping**

**B. List the curricular gaps for the attainment of defined POs and PSOs (4)**

The mapping between Course Outcomes and Program Outcomes are presented for R13 and R16 Regulations in Table: B.2.1.1.j. It is observed that the curriculum provided by the university is in compliance with most of the POs. Curriculum maps

1. Strongly with Program Outcomes such as Engineering Knowledge (PO1) and Problem Analysis (PO2).
2. Moderately with Program Outcomes such as Design/ Development of Solutions (PO3), Engineer & Society (PO6), Environment and Sustainability (PO7), Individual and Team Work (PO9) and Lifelong Learning (PO12)
3. Low with Conduct Investigations of Complex Problems (PO4), Modern Tool Usage (PO5), Ethics (PO8), Communications (PO10) and Project Finance and Management (PO11).

The Program Specific Outcomes (PSO1 & PSO2) are strongly mapped to almost all the program core, program elective, open elective and basic engineering courses.

Though the curriculum incorporates academically challenging environment and develops problem solving skills, few gaps in the curriculum are identified from the curriculum compliance by considering the POs that are mapped to a percentage less than 80% for both R13 and R16 regulations. The gaps are identified listed in Table 2.1.1k below.

**List of gaps identified through CO-PO-PSO Mapping for R13 Regulation**

Sl. No	Identified PO	Gap Identification
1	PO4	<b>G1:</b> Lack of awareness on using research methods to interpret the data in developing micro computer and IoT devices. <b>G2:</b> Lack of awareness on using research based knowledge to synthesize and design filters for modern signal processing applications.
2	PO5	<b>G3:</b> Lack of modern tool usage to analyze scalable VLSI circuits. <b>G4:</b> Lack of applying appropriate techniques to analyze CMOS circuits.
3	PO8	<b>G5:</b> Lack of ability to apply ethical principles to protect bio diversity and to conserve the natural resources. <b>G6:</b> Usage of biomedical instruments to test human system with ethics.
4	PO10	<b>G7:</b> Lack of communication skills to present the technical details effectively.

5	PO11	<p><b>G8:</b> Lack of ability to describe image processing techniques to multi-disciplinary tasks.</p> <p><b>G9:</b> Lack of ability to utilize microwave tubes to sustain radiation effect in communications.</p>
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**Table B.2.1.1.k: Gap Identification through CO-PO-PSO Mapping for R13 Regulation**

**List of gaps identified through Stakeholder Feedback for R13 Regulation**

Sl. No	Stakeholder	Gap Identification	Relevance to POs & PSOs
1	Alumni	<p><b>G1, G2:</b> Inculcate research based knowledge to core concepts</p> <p><b>G3, G4:</b> Students require more practical exposure to modern programming tools.</p>	PO3, PO4, PO5, PSO1, PSO2
2	Parent	<p><b>G5, G6, G7:</b> Induct life-long learning skills, employability skills, ethics and ability to work as an individual and part of a team.</p>	PO8, PO9, PO12
3	Industry / Employer	<p><b>G8, G9:</b> Frequent interaction of industry-academia to implement multi-disciplinary projects.</p>	PO6, PO11, PSO1, PSO2
4	Graduate	<p><b>G1, G2:</b> Suggested to introduce research based courses in curriculum.</p> <p><b>G7:</b> Impart more training towards improving soft skills.</p>	PO4, PO5, PO10, PSO1, PSO2

**Table B.2.1.1.l: Gap Identification through Stakeholder Feedback for R13 Regulation**

**List of gaps identified through CO-PO-PSO Mapping for R16 Regulation**

Sl. No	Identified PO	Gap Identification
1	PO4	<p><b>G1:</b> Lack of awareness on using research methods to interpret the data in developing micro computer and IoT devices.</p> <p><b>G2:</b> Lack of awareness on using research based knowledge to synthesize and design filters for modern signal processing applications.</p>
2	PO5	<p><b>G3:</b> Lack of modern tool usage to analyze scalable VLSI circuits.</p> <p><b>G4:</b> Lack of applying appropriate techniques to analyze CMOS circuits.</p>
3	PO8	<p><b>G5:</b> Lack of ability to apply ethical principles to protect bio diversity and to conserve the natural resources.</p> <p><b>G6:</b> Usage of biomedical instruments to test human system with ethics.</p>

4	PO10	<p><b>G7:</b> Lack of acquiring employability skills to be competitive.</p> <p><b>G8:</b> Lack of interpersonal skills that define the ability to function effectively as an individual and in a group with the capacity to be a leader or manager as well as an effective team member</p>
5	PO11	<p><b>G9:</b> Lack of ability to describe image processing techniques to multi-disciplinary tasks.</p> <p><b>G10:</b> Lack of ability to utilize microwave tubes to sustain radiation effect in communications.</p>

**Table B.2.1.1.m: Gap Identification through CO-PO-PSO Mapping for R16 Regulation**

**List of gaps identified through Stakeholder Feedback for R16 Regulation**

Sl. No	Stakeholder	Gap Identification	Relevance to POs & PSOs
1	Alumni	<p><b>G1, G2:</b> Inculcate research based knowledge to core concepts</p> <p><b>G3, G4:</b> Students require more practical exposure to modern programming tools.</p>	PO3, PO4, PO5, PSO1, PSO2
2	Parent	<p><b>G5, G6, G7 and G8:</b> Induct life-long learning skills, employability skills, ethics and ability to work as an individual and part of a team.</p>	PO8, PO9, PO12
3	Industry / Employer	<p><b>G9, G10:</b> Frequent interaction of industry-academia to implement multi-disciplinary projects.</p> <p><b>G11:</b> Motivate towards environmental sustainability to avoid depletion or degradation of natural resources.</p>	PO6, PO11, PSO1, PSO2
4	Graduate	<p><b>G1, G2:</b> Suggested to introduce research based courses in curriculum.</p> <p><b>G7, G8:</b> Impart more training towards improving soft skills.</p>	PO4, PO5, PO10, PSO1, PSO2

**Table B.2.1.1.n: Gap Identification through Stakeholder Feedback for R16 Regulation**

**2.1.2 State the delivery details of the content beyond the syllabus for the attainment of POs and PSOs (10)**

*(Provide details of the additional course/learning material/content/laboratory experiments/projects etc., arising from the gaps identified in 2.1.1 in a tabular form in the format given below)*

**A. Steps taken to get identified gaps included in the curriculum (2)**

The identified gaps are communicated to the University for consideration during the revision of curriculum. Beyond this, the department takes necessary measures to fill the gaps by imparting knowledge to the concepts through content beyond syllabus.

- Seminars are arranged by experts frequently.
- Guest lectures are arranged by industry experts to overcome the gap between industry and academia.
- Practical Hands-on workshops are arranged to get exposure to modern tools.
- Students are sent for industrial visits to various industries.
- Aptitude tests, value added courses, mini projects, employability enhancement programs etc. are regularly conducted to enhance their skills.
- Students are encouraged to undertake in-plant training in the industries during their semester holidays.

**B. Delivery details of content beyond syllabus (5)**

The curriculum gaps are addressed through various seminars, workshops, add-on courses and various technical and social events by the program. The tables representing the events conducted by the department to fill the curriculum gaps are listed below.

## Delivery Details of Content beyond Syllabus for CAYm1 (2018-19)

S. No	Gap	Actions Taken	Date/Month/Year	Resource Person	Percentage of Students	Relevance to POs & PSOs
1	<b>G3 (R16):</b> Lack of modern tool usage to analyze scalable VLSI circuits	Awareness program on Opportunities in VLSI	21-07-2018	Dr. N. Vamsi, Senior Research Officer	90%	PO4, PO5, PO12
2	<b>G7 (R13):</b> Lack of communication skills to present the technical details effectively	Workshop on Student Consortium for Advancement and Learning in Engineering education (SCALE)	26-07-2018 to 28-07-2018	Shreya Adabala Lead Team Associate & Facilitator	98%	PO9, PO10, PO12, PSO2
3	<b>G7 (R13):</b> Impart more training towards improving soft skills	Workshop on Andhra Pradesh Information Technology Academy Soft Skills Workshop(APITA)	20-08-2018 to 25-08-2018	Mr Surendranath Mr Phani kumar , APITA Trainers,ESF LABS	100%	PO9, PO10, PO11, PSO2
4	<b>G5, G6, G7 (R13), G7, G8 (R16):</b> Induct life-long learning skills, employability skills, ethics and ability to work as an individual and part of a team	Social Activity on Navy Marathon 2k18	17-11-2018 to 18-11-2018	Rear Admiral Deepak Kapoor Chief Staff Officer, ENC	95%	PO6, PO9, PO10
5	<b>G7, G8 (R16):</b> Impart more training towards improving soft skills	Workshop on Computational thinking and problem solving skills using C	05-12-2018 to 10-12-2018	Ms. R. Devi Lalitha, Multi skill trainer Ms- B. Bhargavi Trainer cum developer	100%	PO4, PO5, PSO2
6	<b>G1, G2 (R13):</b> Inculcate research based knowledge to core concepts	Awareness program on GATE	11-12-2018	Mr. D. Vijaya Shastry, Regional Manager, Gate academy	100%	PO12, PSO2
7	<b>G1, G2 (R13):</b> Inculcate research based knowledge to core concepts	Workshop on SIEMENS systems For Robotics	13-12-2018	Mr. A. Ravi Kumar Multi skill trainer	100%	PO4, PO5, PO6, PO9, PO10, PO11, PO12
8	<b>G3, G4 (R16):</b> Students require more practical exposure to modern programming tools	Workshop on Build BOX	26-12-2018 to 10-01-2019	Mr.T.Ravi Kishore Trainer cum developer P.Alluru Raju Trainer cum developer	95%	PO3, PO4, PO5, PO6, PO9, PO10, PO11, PO12, PSO2

9	<b>G7 (R13):</b> Impart more training towards improving soft skills	Campus Recruitment Training	26-12-2018 to 05-01-2019	Mr. Naveen, member of CCC (Campus Corporate Connect) Mr. Sudeep, member of CCC (Campus Corporate Connect) Mr. Rayule, member of CCC (Campus Corporate Connect)	100%	PO9, PO10, PO12, PSO2
10	<b>G7, G8 (R16):</b> Impart more training towards improving soft skills	Training in Java Programming	07-05-2018 to 25-05-2018	Mr. Krishna Prasad, Founder & CEO - KPteck	96%	PO9, P10, PO12 PSO1
11	<b>G8, G9 (R13):</b> Frequent interaction of industry-academia to implement multi-disciplinary projects	Guest lecture on Latest trends in Radar systems	14-02-2019	Dr.K.S.Ranga Rao, Principal consultant center of excellence in maintenance & ship building	100%	PO12, PSO1, PSO2
12	<b>G3 (R13):</b> Lack of modern tool usage to analyze scalable VLSI circuits. <b>G9, G10 (R16):</b> Frequent interaction of industry-academia to implement multi-disciplinary projects	Seminar on Latest Trends in VLSI	15-02-2019	Dr.Ajit Kumar Panda , Professor and Dean, National Institute of Science and Technology Berahmpur, Odisha	100%	PO8, PO10, PO12, PSO1, PSO2
13	<b>G5, G6, G7(R13), G7, G8, G11(R16):</b> Induct life-long learning skills, employability skills, ethics and ability to work as an individual and part of a team	Student Symposium YUVATARANG - 2k19	16-02-2019 to 17-02-2019	Srivatsa Nagarajiah - Recruiting Manager - TEKsystems	100%	PO9, PO10, PO11, PO12
14	<b>G7 (R13):</b> Impart more training towards improving soft skills	Campus Recruitment Training	22-02-2019 to 28-02-2019	Jagannath Rao, Aptitude Trainer Ruchitha Kavvuri, Trainer Manish Wope, Trainer Pavan Koyyana, Trainer	100%	PO9, PO10, PO12, PSO2

				Prasanth Kuikuppala, Trainer Roshin- Trainer (FACE)		
15	<b>G2(R16):</b> Lack of awareness on using research based knowledge to synthesize and design filters for modern signal processing applications	Industrial visit to ISRO-SARC	25-02-2019 to 26-02-2019	Dr. Ch. Ramesh Babu Associate Professor, VIEW	100%	PO9, PO12
16	<b>G7, G8(R16):</b> Impart more training towards improving soft skills	Workshop on Computational thinking and problem solving skills using C	25-02-2019 to 02-03-2019	Ms. R. Devi Lalitha, Multi skill trainer Ms- B. Bhargavi Trainer cum developer	100%	PO5, PSO2
17	<b>G6 (R13, R16):</b> Usage of biomedical instruments to test human system with ethics	Seminar on Cybercrime	08-03-2019	Sri K. Prabhakar babu, ACP (crimes)	100%	PO8
18	<b>G7 (R13):</b> Impart more training towards improving soft skills	Campus Recruitment Training	24-05-2019 to 15-06-2019	Jagannath Rao, Aptitude Trainer Manish Wope , Trainer Radhika,Rathi, Trainer Janhvi Singh , Trainer Pavan Koyyana, Trainer ,Prasanth Kuikuppala, Trainer Ruchitha Kavvuri- Trainer (FACE )	100 %	PO4, PO5, PSO2
19	<b>G7 (R13):</b> Impart more training towards improving soft skills	Campus Recruitment Training	09-05-2019 to 22-05-2019	Shakti Trainer, Suganya, Aptitude Trainer Bhoopathi Raja, Corporate Technical Trainer Sai Prasad- Trainer Mission Ignite	100%	PO9, PO10, PO12, PSO1, PSO2

Table B.2.1.2.a: Delivery Details of Content beyond Syllabus for CAYm1 (2018-19)



**Delivery Details of Content beyond Syllabus for CA Ym2 (2017-18)**

S. No	Gap	Actions Taken	Date-Month-Year	Resource Person	Percentage of Students	Relevance to POs & PSOs
1	<b>G3 (R13):</b> Lack of modern tool usage to analyze scalable VLSI circuits	Workshop on PCB Design	30-06-2017 & 01-07-2017	Mr. K. Naveen, PCB Trainer, QUE Technologies	100	PO4, PO5, PSO1
2	<b>G5 (R13, R16):</b> Lack of ability to apply ethical principles	Seminar on YI Young India we can win	12-08-17	Mr. N. Narayana Rao, Social activist	100	PO8
3	<b>G7 (R13), G7,G8 ( R16) :</b> Lack of communication skills to present the technical details effectively	Awareness Program on Manifest your Dreams	16-08-17	Ms. M. Manisha Mishra Senior System Engineer , Infosys	100	PO10, PO11
4	<b>G2 (R13):</b> Lack of awareness on using research based knowledge	Awareness Program on IT trends and Career Development	16-09-2017	Sri P. Gompa Krishna, Senior System Engineer	100	PO9, PO10, PO12
5	<b>G7(R13):</b> Lack of communication skills to present the technical details effectively	Workshop on Microsoft Wise Program	20-09-2017	Mr. K. Sunil Kumar, Senior Consultant	100	PO9, PO10, PO12, PSO2
6	<b>G1 (R13):</b> Lack of awareness on using research methods to interpret the data in developing micro computer and IoT devices	Workshop on Hackathon	21-10-2017	T.Prabhu Kumari Trainer cum developer	100	PO3, PO5, PSO2
7	<b>G1 (R13):</b> Lack of awareness on using research methods to interpret the data in developing micro computer and IoT devices	Workshop Training on Embedded System Fundamentals	11-12-2017 to 16-12-2017	Mr. B. Naga Raju Trainer cum developer & Mr. K. Kalyan Kumar Trainer cum developer	100	PO4, PO5, PSO2
8	<b>G7 (R13):</b> Impart more training towards improving soft skills	Workshop on Employability Skills	24-11-2017	Mr.Keerthi Sagar Naik, Recruitment Exec. at Diksha Technologies Pvt Ltd , Bangalore, INDIA	100	PO9, PO10, PO11
9	<b>G7 (R13):</b> Impart more training towards improving	Seminar on Carrier simplified	25-11-2017	Mr.Ranjeet Kumar Sah, Senior Consultant	100	PO9, PO10, PO12

	soft skills					
10	<b>G5 (R13, R16):</b> Lack of ability to apply ethical principles to protect bio diversity and to conserve the natural resources.	Awareness program on Legal Rights	27-11-2017	Mr. Suresh, Human legal rights advisor	100	PO6, PO7, PO8
11	<b>G2 (R13):</b> Lack of awareness on using research based knowledge to synthesize and design filters for modern signal processing applications	Interaction on SMART DSC-2017	30-11-2017 to 02-12-2017	Mr. Rajesh, technical trainer	100	PO4, PO7, PSO2
12	<b>G1 (R13):</b> Lack of awareness on using research methods to interpret the data in developing micro computer and IoT devices	Workshop on IOT	11-12-2017 to 16-12-2017	U.Umamaheswara Rao Multi-skill trainer	100	PO3, PO4, PO5, PSO1
13	<b>G7 (R13):</b> Impart more training towards improving soft skills	Seminar on Amazon web service registration	12-12-2017	Mr. Sreekanth, Developer & Trainer	100	PO9, PO10, PO11, PSO2
14	<b>G2 (R13):</b> Lack of awareness on using research based knowledge	Seminar on Future scope interference	23-12-2017	Mr. U.Sumanth, Trainer cum Developer	100	PO4, PO9, PO10, PO11
15	<b>G7 (R13):</b> Impart more training towards improving soft skills	Campus Recruitment Training	14-12-2017 to 16-12-2017	Mr. Naveen, member of CCC (Campus Corporate Connect) Mr. Sudeep, member of CCC (Campus Corporate Connect) Mr. Rayule, member of CCC (Campus Corporate Connect)	100	PO9, P10, PO12, PSO1

16	<b>G9 (R16)</b> : Lack of ability to utilize microwave tubes to sustain radiation effect in communications	Guest Lecture on Latest trends in Communication	26-02-2018 & 27-02-2018	NALINI VERMA - GM(O) - BSNL,	100	PO11, PSO2
17	<b>G7 (R16)</b> : Lack of communication skills to present the technical details effectively	Guest Lecture on Women Empowerment	08-03-2018 & 10-03-2018	Smt. N. Rajakumari, Chair person, A.P. State commission for Women.	100	PO10, PO11
18	<b>G1 (R13)</b> : Lack of awareness on using research methods to interpret the data in developing micro computer and IoT devices	Certification course on IoT	13-05-2018 To 02-06-2018	Mr.U.Sumanth, Trainer Cum Developer Mr.D.Kalyan Kumar,Electronics Engineering trainee Mr.T.Sai.Ram, Trainer cum Developer	100	PO3, PO4, PO5, PSO2

**Table B.2.1.2.b: Delivery Details of Content beyond Syllabus for CAYm2 (2017-18)**

### Delivery Details of Content beyond Syllabus for CAYm2 (2016-17)

S. No.	Gaps Identified	Actions Taken	Date-Month-Year	Resource Person	Percentage of Students	Relevance to POs & PSOs
1	<b>G3 (R13):</b> Lack of modern tool usage to analyze scalable VLSI circuits.	Workshop on Mixed Signal IC Design using Mentor graphics	14-06-2016 to 15-06-2016	M.Sharath Kanth, Sr. Appl. Engineer, COREL Technologies	90%	PO5, PSO1
2	<b>G2 (R13):</b> Lack of research based knowledge to core concepts.	Industrial Visit-AIR	30-06-2016	Mr. K.Satya Narayana Murthy, Assistant Director, AIR	100%	PO11
3	<b>G7(R13):</b> Impart more training towards improving soft skills	Campus Recruitment Training	11-07-2016 to 04-08-2016	Mr. Jatindhar, Mr. Shasidhar, Mr. Vishnu - Talentio Team	95%	PO5, PO10, PO11
4	<b>G7 (R13):</b> Impart more training towards improving soft skills	Campus Recruitment Training	01-08-2016 to 08-08-2016	Mr. Naveen, Mr. Sudeep, Mr. Rayule, CCC Team	95%	PO5, PO10, PO11
5	<b>G2 (R13):</b> Lack of research based courses in curriculum.	Industrial Visit-Doppler Radar	01-08-2016 & 02-08-2016	Mr.Bibiraja, Metrological department	100%	PO11
6	<b>G1 (R13):</b> Lack of awareness on using research methods to interpret the data in developing micro computer and IoT devices	Seminar on Challenges of working Under Water	15-07-2016	Mr. Ch.Durga Malleswar, <i>Director, Scientist-H</i> , NSTL.	96%	PO4, PO5, PSO2
7	<b>G4 (R13):</b> Lack of applying appropriate techniques to analyze CMOS circuits	Seminar on Analog IC Design	30-09-2016	Mr. B. Chakravarthi, Senior Design Engineer, INTEL, Bangalore.	100%	PO5, PSO1
8	<b>G8 (R13):</b> Lack of frequent interaction of industry-academia	Seminar on Role of engineer in PSUs	01-10-2016	Mr. Anand Kumar	100%	PO8
9	<b>G7 (R13):</b> Lack of communication skills to present the technical details effectively	Paper Presentation-VISTA	30-09-2016 & 01-10-2016	Mr. P. Sudhakar, Asst. Prof., ECE, VIEW	95%	PO4, PO5, PO10

10	<b>G7 (R13):</b> Lack of communication skills to present the technical details effectively.	Poster Presentation-VISTA	30-09-2016 & 01-10-2016	Dr. K. V. Ramana Rao, Assoc. Prof., ECE, VIEW	96%	PO4, PO5, PO10
11	<b>G8 (R13):</b> Lack of ability to describe image processing techniques to multi-disciplinary tasks.	Pirates of the circuits-VISTA	30-09-2016 & 01-10-2016	Mr. P. Gopi Krishna, Asst. Prof., ECE, VIEW	85%	PO4, PO11
12	<b>G2 (R13):</b> Lack of awareness on using research based knowledge to synthesize and design filters for modern signal processing applications.	Teaching and research methodologies in technical education	25-11-2016	Prof. K.P.R.Chowdary	95%	PO8, PO11
13	<b>G7 (R13):</b> Lack of training towards improving soft skills	Vizag Science and Tech Fest	18/12/2016 To 22/12/2016	Mr. B. Sasi Kanth, Asst. Prof., ECE, VIEW	85%	PO10, PO11
14	<b>G1 (R13):</b> Lack of awareness on using research methods to interpret the data in developing micro computer and IoT devices	Seminar on Embedded Systems and Networking	09-02-2017	Mr. Abraham Varughese, Life fellow of IETE, Scientist-G, NSTL.	90%	PO4, PO5, PSO1
15	<b>G1 (R13):</b> Lack of awareness on using research methods to interpret the data in developing micro computer and IoT devices. <b>G6 (R13):</b> Usage of biomedical instruments to test human system with ethics	IoT using MSP 430	15-02-2017 & 16-02-2017	Mr. Sagar H.B, Application Engineer,Digital Shark Technologies	96%	PO4, PO5
16	<b>G9 (R13):</b> Lack of ability to utilize microwave tubes to sustain radiation effect in communications	Seminar on Core of Electronics & Electromagnetic Interfacing	17-02-2017	Dr.B.SubbaRao,Project Director,Sammer Electronics	95%	PO4, PO11

17	<b>G5 (R13):</b> Lack of ability to apply ethical principles to protect bio diversity and to conserve the natural resources	Seminar on MEMS Technology for Engineers	18-02-2017	Prof. D.V.Rama Koti reddy, IETE Secretary, HOD- EIE, AU	92%	PO4, PO5, PSO2
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**Table B.2.1.2.c: Delivery Details of Content beyond Syllabus for CAYm3 (2016-17)**

### C. Mapping of content beyond syllabus with the POs and PSOs (3)

The mapping of the delivered content beyond syllabus with POs and PSOs is consolidated and is presented in Table B.2.1.2.d below.

Contents/ POs & PSOs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
Guest lectures	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Workshops	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Industrial Visits	-	YES	YES	YES	-	YES	YES	-	-	YES	YES	YES	YES	YES
Awareness Programs	-	YES	YES	YES	-	-	-	-	-	-	-	YES	YES	YES
Campus Recruitment Training	YES	YES	YES	-	-	YES	YES	-	-	YES	YES	YES	YES	YES
Training on Soft skills	-	YES	YES	YES	YES	YES	-	-	-	-	YES	YES	YES	YES

**Table B. Error! No text of specified style in document..d: Mapping of content beyond syllabus with POs & PSOs**

**Impact Analysis:**

- The students gain real time experience through the activities such as seminar, guest lectures, additional lab experiments, and industrial visits etc. that are conducted.
- The real time experience will improve placement opportunities.
- Enrich the practical knowledge of students.
- Communication skills, team spirit and leadership qualities of the students are improved.
- Increases problem solving skills using modern tools to real-time projects.

**2.2 Teaching-Learning (100)****2.2.1. Describe the process followed to improve quality of Teaching-Learning (25)**

*(Processes may include adherence to academic calendar and improving instruction methods using pedagogical initiatives such as real world examples, collaborative learning, quality of laboratory experience with regard to conducting experiments, recording observations, analysis of data etc. encouraging bright students, assisting weak students etc. The implementation details and impact analysis need to be documented)*

Effective content delivery, selection of teaching methodologies and effective assessment etc. plays a vital role in attaining course outcomes and program outcomes successively. Hence, by proper planning, designing and implementing the course, an educator can successfully deliver the content to the students in the stipulated time and with effective teaching.

**A. Adherence to Academic Calendar (3)**

In adherence to the university calendar, it is our regular practice to publish our program academic calendar every semester that includes the complete plan for day-to-day content delivery, examination and lab schedule, co-curricular and extra-curricular activities in addition to academic activities to be implemented in the current semester.

Academic calendar includes the plan to conduct academic activities in the current semester. It is prepared with an intention to conduct at least two seminars and one industrial visit per year to all the students of ECE. It also includes the schedule for mid-term exams, tests and external examinations.

**Advantages of Academic Calendar (Perfect Planning):**

- Smooth functioning of the program.

- Allows the parents and students to monitor course coverage and relevance to PO attainment.
- Helps the administration to monitor daily activities.
- Motivates the advanced learners to participate in Hackathon programs, workshops etc.
- Create awareness on training programs.
- Procedural aspects of lab conduction & assessment.

A sample copy of university academic calendar for Semester-I & Semester-II is given below:

Grams: "TECHNOLOGY"  
Email: dapjntuk@gmail.com

Phone: 0884-2300991  
Mobile: +9177790000

**Directorate of Academic & Planning**  
JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA  
KAKINADA-533003, Andhra Pradesh, INDIA  
(Established by AP Government Act No. 30 of 2008)

Lr. No. JNTUK/DAP/Aca.Cal/ IV B.Tech & B.Pharm/2018-19 Date: 24-05-2018

**Dr. Ch. Satyanarayana**  
M.Tech, Ph.D.,  
Director, Academic & Planning

To  
The Principals of All Affiliated Colleges,  
JNTUK, Kakinada

**ACADEMIC CALENDAR**  
for  
**B.TECH & B.PHARM IV YEAR**  
2015 BATCH

B.TECH & B.PHARM IV YEAR I Semester			
Description	From	To	Weeks
<b>Commencement of Class Work</b>	<b>11-06-2018</b>		
I Unit of Instructions	11-06-2018	04-08-2018	8W
I Mid Examinations	06-08-2018	11-08-2018	1W
II Unit of Instructions	13-08-2018	06-10-2018	8W
II Mid Examinations	08-10-2018	13-10-2018	1W
Preparation & Practicals	15-10-2018	20-10-2018	1W
End Examinations	22-10-2018	03-11-2018	2W
<b>Commencement of Class Work</b>	<b>19-11-2018</b>		
B.TECH & B.PHARM IV YEAR II Semester			
I Unit of Instructions	19-11-2018	12-01-2019	8W
I Mid Examinations	17-01-2019	23-01-2019	1W
II Unit of Instructions	24-01-2019	23-03-2019	8W
II Mid Examinations	25-03-2019	30-03-2019	1W
Preparation & Practicals	01-04-2019	06-04-2019	1W
End Examinations	08-04-2019	20-04-2019	2W

**Director Academic and Planning**

Copy to the Secretary to the Hon'ble Vice Chancellor  
Copy to the Rector  
Copy to the Registrar  
Copy to the Director of Evaluation  
Copy to the Controller of Examination

**Figure B.2.2.1.a: University Calendar for 2018-19 Academic Year**

The calendar prepared by the department in adherence to the university calendar for the academic year 2018-19 semester-I is shown below:

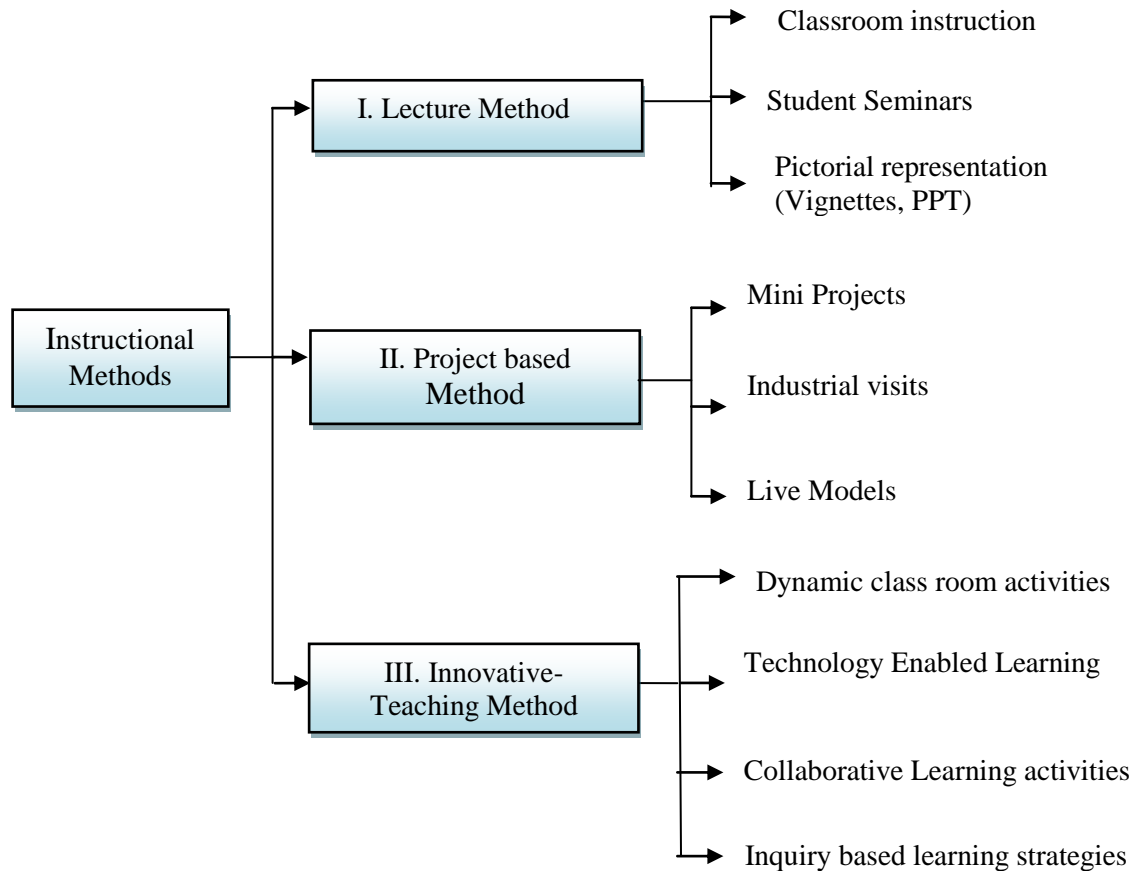


ACADEMIC CALENDER -2018-2019- SEMESTER-II										
Month	Week. No	MON	TUE	WED	THU	FRI	SAT	SUN	Department Activities/ Events	Academic Activities
November	01	19	20	21	22	23	24	25		19 <sup>th</sup> - Commencement of class work for II/III/IV B. Tech
	02	26	27	28	29	30				
December	03	3	4	5	6	7	8	9	5 <sup>th</sup> – 10 <sup>th</sup> -Training program on Computational thinking and problem solving skills using 'C' for II B. Tech students	09-12-2019 to 04-01-2020 (8.00AM- 9.40AM) Seminar Presentations
	04	10	11	12	13	14	15	16	13 <sup>th</sup> - Workshop on Siemens Systems for Robotics 14 <sup>th</sup> - Seminar on empowering India through atomic energy	
	05	17	18	19	20	21	22	23	23 <sup>th</sup> - IV year Picnic	
	06	24	25	26	27	28	29	30	26 <sup>th</sup> – 30 <sup>th</sup> Build BOX Workshop 26 <sup>th</sup> -5 <sup>th</sup> CCC Training for III year students	
	07	31								
				1	2	3	4	5	6	
January	08	7	8	9	10	11	12	13	9 <sup>th</sup> – CRC meeting 10 <sup>th</sup> -12 <sup>th</sup> Revision for Mid-1	7 <sup>th</sup> -8 <sup>th</sup> PRC-1
	09	14	15	16	17	18	19	20	14 <sup>th</sup> -16 <sup>th</sup> Pongal Vacation	17 <sup>th</sup> -23 <sup>rd</sup> -I Mid Examinations
	10	21	22	23	24	25	26	27		
	11	28	29	30	31					
							1	2	3	
February	12	4	5	6	7	8	9	10		
	13	11	12	13	14	15	16	17	14 <sup>th</sup> & 15 <sup>th</sup> -NAVITAS 16 <sup>th</sup> & 17 <sup>th</sup> -YUVATARANG - 2k19: Technical Fest	
	14	18	19	20	21	22	23	24	22 <sup>nd</sup> -28 <sup>th</sup> Training (FACE)	
	15	25	26	27	28				25 <sup>th</sup> & 26 <sup>th</sup> -Industrial visit to ISRO 25 <sup>th</sup> to 2 <sup>nd</sup> Training program on Computational thinking and problem solving skills using C	
March						1	2	3		
	16	4	5	6	7	8	9	10		
	17	11	12	13	14	15	16	17	16 <sup>th</sup> – CRC Meeting	14 <sup>th</sup> -15 <sup>th</sup> PRC-2
	18	18	19	20	21	22	23	24	18 <sup>th</sup> to 23 <sup>rd</sup> -Revision classes for II/III/IV B. Tech	20 <sup>th</sup> - Project Thesis Submission 21 <sup>st</sup> -23 <sup>rd</sup> Project External Viva-voce
	19	25	26	27	28	29	30	31		25 <sup>th</sup> to 30 <sup>th</sup> -II Mid Examinations
April	20	1	2	3	4	5	6	7		1 <sup>st</sup> to 6 <sup>th</sup> Preparation & Practicals
	21	8	9	10	11	12	13	14		8 <sup>th</sup> – 20 <sup>th</sup> End Examinations
	22	15	16	17	18	19	20	21		

Table B.2.2.1.a: Department Academic Calendar (2018-19) - Semester-II

### B. Use of Various Instructional Methods and Pedagogical Initiatives (3)

The department encourages the faculty to use various instructional methods to deliver the content. The use of various instructional methods by the faculty improves the self learning capability of the student. Lecture method of instruction helps the student to learn the fundamentals in an effective and easy manner. Project based method of teaching leads to professional improvement of the student and creates awareness to the industrial need. Activity based instruction method provides an opportunity to the students to learn independently that certainly leads to an effective learning. The instructional methods used by the faculty in the department are categorized and described briefly as:



**Figure B.2.2.1.b: Instructional Methods**

#### I. Lecture Method

Generally, the faculty implements *classroom instruction* by using chalk and board. The faculty prepares well in advance to teach the students. The analytical courses are taught elaborately by this method so that the student understands the concepts easily.

- For theoretical courses, *seminars* play a vital role for understanding the concepts and develop essential skills. The faculty assigns topics to the students in advance for them to prepare. The schedule for seminar will be prepared by the faculty and the students present the seminar in the class. The student presenting the seminar will be assessed by the course coordinator and co-students in the class.
- Students in the class have different learning styles. In order to adopt innovative methods to cover all the students learning styles, the faculty uses *Pictorial representation* to certain concepts in a course such as Power Point Presentations, Vignette's, and Pictures etc. to make the student attentive for the entire class.

<b>Subject: Analog Communications</b>	<b>Class: II ECE</b>	<b>Topic: Modulation Schemes</b>
---------------------------------------	----------------------	----------------------------------

**Outcome:** At the end of the session, student is able to

- Demonstrate the principles of various modulation schemes.
- Construct the output waveforms of modulation schemes

**Method Adopted:** Use Pictures, Schematics, graphs and simple sketches

In order to induct the basics and need of modulation concepts, I prefer content based teaching is more apt to cover these principles using pictures, schematics, graphs and simple waveforms. Concrete material was provided to get clear idea about all modulation schemes like

- Amplitude Modulation
- Frequency Modulation
- Angle Modulation.

**Pre Implications:**

- Eagerly waited for the start of my class
- As it was new concept and closely related to real time, all students were attentive

**Implementation of that strategy:**

- I started the class with introduction of modulation schemes in day to day communication (10 min)- Using Sketches- *Sensing & Intuitive*
- Explained various methods available (10 min) – using Pictures and charts- *Intuitive, Inductive & Sequential.*
- Discussed the principle of amplitude modulation (10 min) – Using Waveforms- *Sensing & Visual*
- Discussed the principle of frequency modulation (10 min) – Using Waveforms- *Sensing & Visual*
- Discussed the principle of angle modulation (10 min) – Using Waveforms- *Sensing & Visual*
- Spent 10 minutes in clarifying their doubts- *Reflective & Global*

**Post Implications:**

- Students are more attentive for first 20minutes
- Some were mumured while I am drawing schematics
- Some of them paid concentration till the end
- Some students enquired about the applications
- Saying frankly, I didn't see satisfaction in all eyes. Some were more excited and remaining sat idle.

Figure B.2.2.1.c: Example of Pictorial representation



Figure B.2.2.1.d: Student Seminar presentation

**Discrete-Time Signal & Classification**

Even/Symmetrical Signal

Odd/Asymmetrical Signal

Periodic Signal

Aperiodic Signal

Causal Signal

Non-Causal Signal

Figure B.2.2.1.e: Power PointPresentation

### Outcomes of Lecture Method:

- Describe the concepts effectively through classroom instruction.
- Build the presentation skills, communication skills and self-learning capability by seminars that help them during campus placements.
- Develop sequential understanding capability through pictorial representation.
- Build student-faculty interaction to understand the learning abilities of the student.

## II. Project based Method

In order to make the student gain knowledge and skills, project based teaching methods are adopted by the faculty in the department. The faculties handling the course identify the bright students and make them into small groups of 2-3 students to develop *mini projects* on the content knowledge. They demonstrate their work to the audience.

- The *industrial visits* evolve solutions for case studies where the class room theoretical knowledge will be put to understanding and concept evaluation. The students will acquire a new way of looking at the concepts learnt in the class. The students understand and explore to different areas and their applications in real life case studies. Industrial visits provide a technical exposure to the students about current trends in the technology.
- The creative thinking of the students is encouraged by making the students solve a real-world problem as *Live Models* and exhibit them in the Technical Expo. The students are allowed to access the technical magazines and volumes to get an idea of implementing the model. The students who come up with an idea are encouraged and supported by the faculty to complete the live model. Lab facilities with the required hardware and software components are provided to the students to build creative skills from the content knowledge.

### Outcomes of Project based Method:

- Develop critical thinking, collaborative and communication skills.
- Build team work.
- Connect to technical experts.
- Develop exposure to industrial needs.
- Build skill based learning.

## III. Innovative-Teaching Method

The department of ECE adopts various innovative pedagogical methods in content delivery keeping in view of students' limited attention span, processing the information, learning styles and motivation.

- The course coordinator hold a meeting well in advance to the commencement of class works with all faculty handling a course to discuss the topic wise pedagogical methods to be adopted in day to day class work.

- The Outcome Based Education model is implemented in the department by blending student centric environment with the traditional teaching by following various pedagogical strategies like
  1. Dynamic class room ( *Think Pair Share activity, Formulate-share-create-revise activity, writing assignments activity*)
  2. Technology Enabled Learning (*Dissemination of content through coursesites, Use of LMS tools*)
  3. Inquiry based learning strategies ( *Flipped class room*)
  4. Collaborative learning activities (*STAD*)

### **1. Dynamic classroom:**

The culture of dynamic classroom helps in understanding the typical topics with approaches like attention of the students by seeing, hearing, reflecting, reasoning logically and intuitively. Dynamic classroom can be created by implementing various active learning activities like think-pair-share, writing assignments and etc.

#### **i. Think- Pair-Share Activity:**

Think-pair-share (TPS) is a dynamic activity where students work together to solve a problem or answer a question about an assigned topic. This strategy requires students to think individually about a topic or answer to a question and share ideas with classmates. Discussing with a partner maximizes participation, focuses attention, and engages students in comprehending the reading material.

#### **Objectives of the activity:**

- To improve the student's psychomotor and affective skills in addition to cognitive skills
- To provide an opportunity to the students to learn independently that leads to an effective learning
- For professional improvement.

#### **Activity Implementation:**

- Activity is planned for 50 minutes.
- Discuss the concept in the class before conducting the activity.
- Students are formed into teams with one of the member as team leader to lead the team and check for effective time utilization during the discussions.
- Instruct the students to discuss and then derive the conclusion.

**Outcomes of the activity:**

- Identify slow learners through discussions and presentations.
- Estimate the students' attentiveness for the entire session
- Develop communication skills.

**ii. Formulate-Share-Create-Revise Activity:**

- The faculty will pose questions to the students after concept delivery.
- The students are asked to find answer or solution to the task given by referring the material provided to them.
- Teams will be formed and the students will be asked to share their solutions and create new solution from their discussions if required and ask randomly few teams to present.
- Activity is planned for about 15 minutes

**Outcomes of the activity:**

- Understand the student's learning style.
- Identify slow learners.
- Develop communication skills.
- Establish active participation of students.

**iii. Writing Assignments Activity:**

- For this activity a theoretical concept will be selected and the concept will be explained by the faculty. The outcome of the activity is explained to students before starting the activity.
- Teams are formed and the activity is planned for 10 to 15 minutes.
- Students are instructed to refer text books, internet sources for the related content.
- Students are asked to write assignment for the topic discussed using ICT facilities.

**Outcomes of the activity:**

- Build independent learning capability of the student.

**Dynamic Classroom Activities**

S.No	Name of the faculty	Course	Activity conducted	Topic	No. of students participated	Relevance to PO & PSO	Activity Outcome
1	Mrs.S.Malathi	Switching Theory and Logic Design	Think Pair Share	Quine Mccluskey method	65	PO1, PO9, PO10	Students were involved in discussion actively which improved their learning
2	Dr. J. Sudhakar	Analog Communication	Writing assignments	Frequency Modulation	65	PO1, PO9	Independent-learning of the student is improved
3	Mr.Ch.Ramesh Babu	Digital Image Processing	Think Pair Share	Enhancement techniques	67	PO1, PO2, PO9, PO10, PSO2	Grab the attention of the students for the entire session
4	Mr.Ch.Ramesh Babu	Embedded Systems	Think Pair Share	Hardware Software Co design	65	PO1, PO9, PO10, PO12, PSO1	Activity provided motivational learning to students
5	Mr.D.Tilak Raju	Pulse and Digital Circuits	Think Pair Share	Bistable multivibrator	55	PO1, PO2, PO9, PO10	Slow learners actively participated in discussions
6	Mrs. T. Sandhya Kumari	Linear IC applications	Formulate-Share-Create-Revise	Frequency compensation in Op-amp	67	PO1, PO2, PO9, PO10	Self-learning capability of the student is improved

**Table B.2.2.1.b: Dynamic Classroom Activities conducted by the Faculty**





**Figure B.2.2.1.f: Think-Pair-Share classroom activity**

## **2. Technology Enabled Learning**

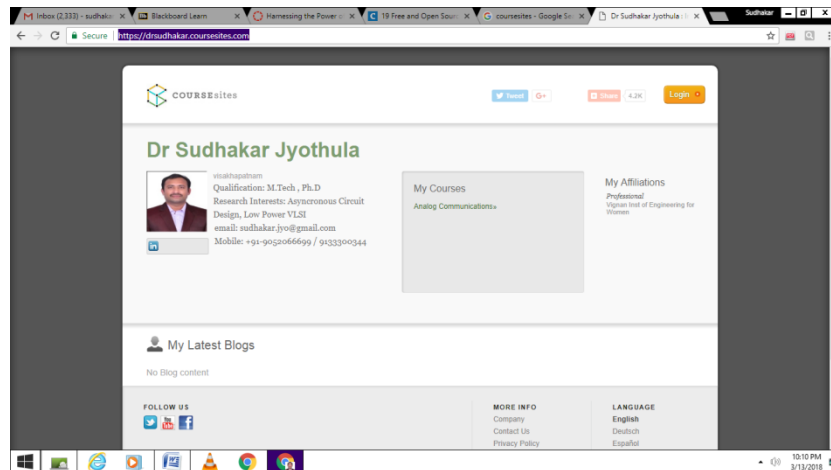
21<sup>st</sup> century revolution in the ICT obliges the teachers and students to keep themselves abreast of the-state-of-the-art of technological development. The deployment of them in teaching-learning process is imperative, since the technology is embedded in almost all walks of our life. ICT encapsulates IT and other media such as audio, video, pictures, animation, graphics, internet and other software packages. The use of technology to teach students has gained attention in recent past. The process of dissemination of information and elicit response from students is a huge task. We adopted the following three technologies to teach students.

### **Dissemination of content through websites**

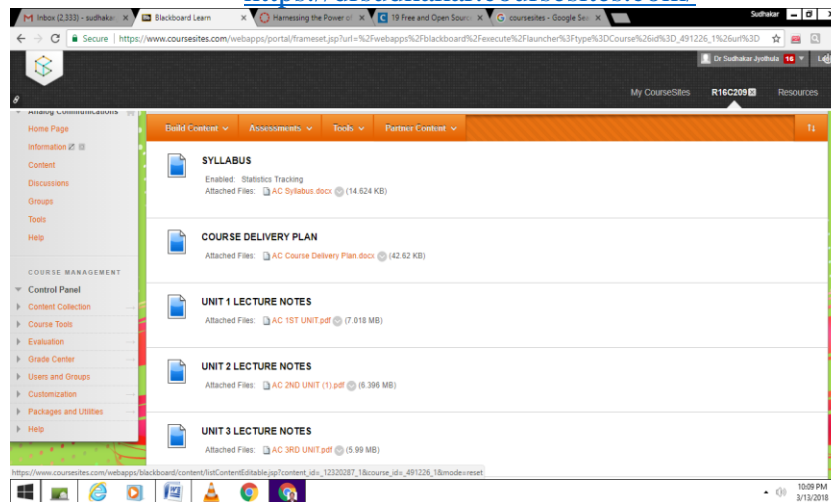
The faculty members are self motivated to create course websites to make available of the course content like syllabus, course delivery plan, lecture notes of all units and previous question papers. This facility helps the students to learn more in less time. As an educator we need to be very particular in inducting content to the learners in short span of time. The open-source platforms available for the faculty are utilized for giving announcements, assignments and grading to a particular course. Few examples of websites used by the faculty are listed below:

S.No	Name of the Faculty	Course	Platform	Utility
1	Dr. J. Sudhakar	Analog Communication	Coursesites	Course syllabus, CDP, lecture material for all the units, question bank.
2	Mr. K. Sridhar	Electronic Devices & Circuits	Canvas	Assignments
3	Mrs. T. Uma Maheswari	Random Variables & Stochastic Processes	Canvas	Assignments
4	Mr. P. Sudhakar	Digital Signal Processing	Reference Globe	Course syllabus, CDP, lecture material for all the units, question bank, quiz
5	Mrs. Ch. Padma Vani	VLSI Design	Google Classroom	Assignments, Announcements

**Table B.2.2.1.c: Dissemination of content through web sources**



<https://drsudhakar.coursesites.com/>



**Figure B.2.2.1.g: Dissemination of content through coursesites**

**Use of LMS Tools:**

The department of ECE uses LMS tools such as Canvas, Moodle, Virtual Labs etc., to make the students submit their assignments, learn online and implement the experiments to gain knowledge about the concepts learnt in the class. Google Classroom, Webex, etc. have been utilized by the faculty to teach the courses through online. The Learning Management Systems can be used to create a professional structured course content by a faculty. The faculty can add lecture notes, images links, interactive tests, and slide shows, etc. Moreover, an individual faculty creates different types of users, such as teachers, students, parents, visitors, and editors, each with different permissions (hierarchies). It helps to control which contains a student can access, track studying progress, and engage students with contact tools. Faculty manages courses and modules, enroll students or set up self-enrollment, see reports on students, and import students to their online classes.

**a) Massive Open Online Courses (MOOCs)** with emerging technology is introduced by the university to survive the motto of excellence, “If you can’t reach to the mentor’s level, we’ll send the mentor to your level”. The students were given choice that either they can take online course or they can go for traditional face to face mode in the class room. Any student can attend the MOOCs classes without disturbing the normal face to face class room schedules.

**Outcomes:**

- Discuss concepts from the experts.
- Solve problems by applying ICT method.
- Infer lifelong learning skills.
- Interpret the concepts to give a better understanding of the subject from credible professors.

**b) Video lectures** will be helpful in many ways to students such as:

- Can access at any point of time and learn content.
- Students can study at an individual pace.
- Provides opportunities for self study.
- Improves the interest of the students.

**Outcomes:**

- Develop flexibility to learn one’s own pace.
- Express self study.

- Build life learning experience.

c) **Webinar** is a customized, live and immersive learning program. It is very useful teaching and education approach, because it allows the learners to learn quickly through interaction. Using webinars a presenter can interact from any place with a community of learners. Small tools are used for interaction because they contain large number of attendees.

**Outcomes:**

- Focus on their leadership skills there by giving them the right boost to develop.
- Develop the learning skills such as learning, communicating, listening and experiencing new things and knowledge.
- Extend knowledge and awareness on modern tools and developments.

## LMS Tools used by the Faculty

S.No	Course Name	Course Code	Topics	Mode of Conduction	LMS Tool	Name of the Faculty	Learning Outcomes	Relevance to POs & PSOs
1	MPMC	C309	Review of Microprocessors & Microcontrollers,	On-line Live Lecture	CISCO WebEx Meetings& Google Classroom.	Mr. Ch. Ramesh Babu	Summarize the fundamental concepts of microprocessors, microcontrollers and advanced microprocessors	PO1
			Introduction to RISC & CISC architectures, Introduction to Memory Interfacings.					
2	DICD	C412	Voltage Bootstrapping analysis, capacitor ratio, MOS capacitor based bootstrapping circuit	On-line Lecture	Zoom meeting	Mrs. Dhanya M. Ravi	Apply MOS capacitor concept to avoid threshold voltage drop	PO1, PO2
3	MWE	C313	Microwave waveguide tee junctions, E plane , H plane and Magic Tee junction.	Video Lectures	Camtasia 9	Mrs. S.Malathi	Discuss the various tee junctions and its Characteristics using S parameters	PO1, PO2
4	AC	C214	Contents in the course	MOOC's	MOODLES	Mrs. T. Sandhya Kumari	Understand the concepts in the course prescribed by the university	PO1, PO2
5	MWE	C313	Contents in the course	MOOC's	MOODLES	Mrs. S. Malathi		
6	SS	C205	Contents in the course	MOOC's	MOODLES	Mr. G. Lakshmana		
7	EDC	C202	Contents in the course	MOOC's	MOODLES	Mr. K. Sridhar		
8	RS	C415	Polarimetric Synthetic Aperture Radar	WEBINAR	CISCO WebEx	Dr. K. V. Ramana Rao	Understand the tools for processing SAR images	PO1, PO2, PO5
9	VLSI	C311	Types of power dissipation	Video Lectures	Screen Recorder	Mrs. Ch.PadmaVani	Explain different types of power dissipations.	PO1, PO2, PO3, PO4, PO5

Table B.2.2.1.d: LMS Tools used by the Faculty

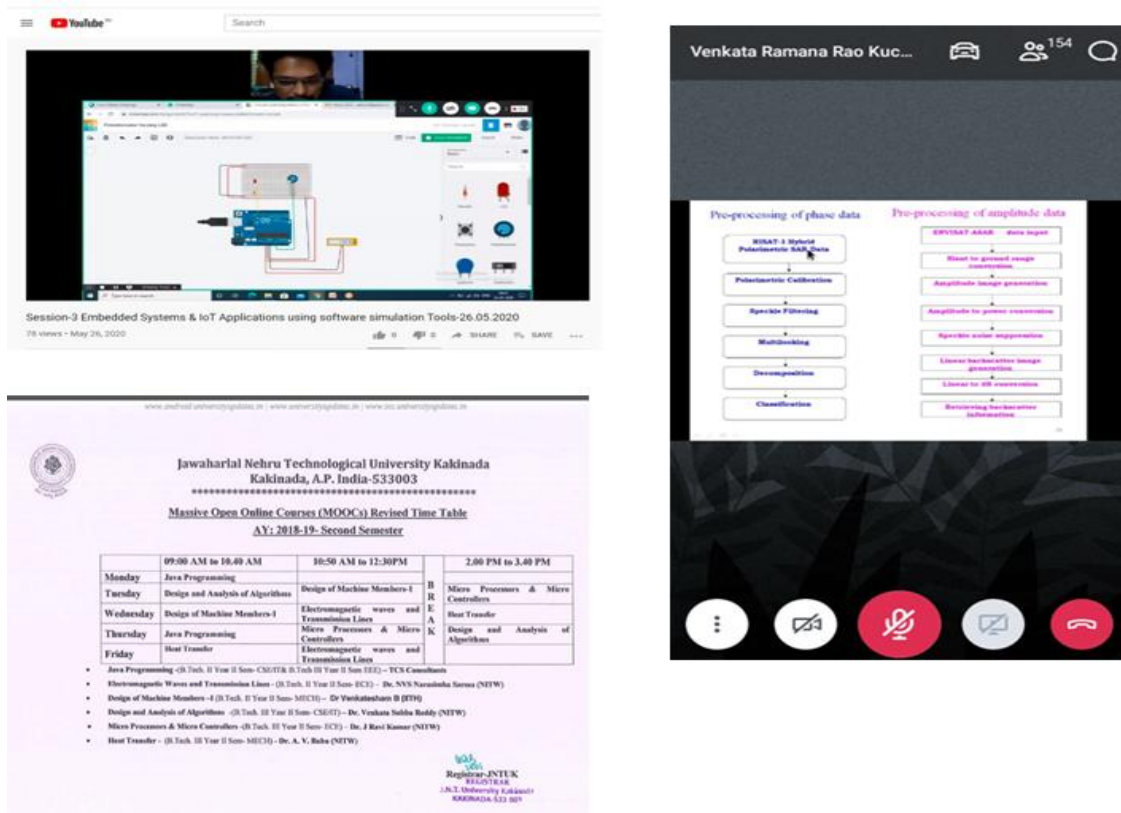


Figure B.2.2.1.h: Sample LMS tools used by the Faculty

### 3. Inquiry based learning strategies

Inquiry-based learning is an approach to learning that emphasizes the student's role in the learning process. Rather than the teacher telling students what they need to know, students are encouraged to explore the material, ask questions, and share ideas. Confirmation enquiry, structure enquiry, guided enquiry and open enquiry are different inquired based strategies adopted in the department to make classroom more students centric.

#### Flipped Classroom:

A *flipped classroom* is an instructional strategy focused on student engagement and active learning, giving the instructor a better opportunity to deal with mixed levels, student difficulties, and differentiated learning preferences during the in-class time.

#### Benefits of the Flipped classroom:

- More participation of students.
- Versatility for students to learn in time and speed.
- Interaction instructor-student.

- Appropriate use of resources by the teacher for constructive learning methods.

**Objectives of the activity:**

- Inspire students to learn the concepts thoroughly.
- A student discovers the ideas of videos, may use them for discussions and assignments in the classroom to motivate the students to learn the concepts thoroughly.

**Execution Plan:**

- Orientation session: 20 minutes.
- Students are provided with the learning material (Video Link, textbook page numbers) of the topic to be covered and a time of 4 days to prepare for the activity.
- On the day of activity, topics are given as per their position in the classroom (the students are observed writing different topics at the same desk) and 20 minutes are given to think and write about the topic.
- The scripts are collected in chronological order (roll number) after 20 minutes.

**Plan of action:**

- Students are asked to go through the learning materials, and 2 days of training time will be given. Each individual will be given a different question or numeric as per higher bloom level and a time of 15 minutes will be given to complete the task.

**Expected Outcomes:**

- Demonstrate points from a video than from a lecture note.
- Build awareness and understanding of the course field.
- Explain the concepts especially the most basic and important aspects of the course.

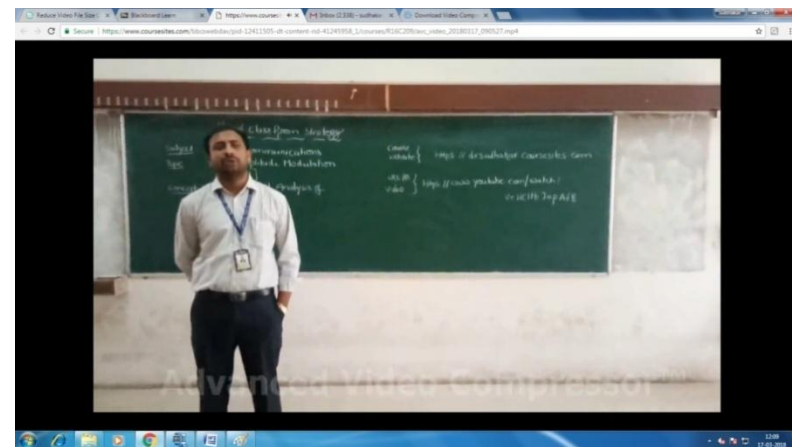
### Flipped Classroom Activities

S.No	Name of the faculty	Course	Topic	No. of students Participated	Relevance to POs & PSOs	Activity Outcome
1	Mrs.Ch.Padma Vani	VLSI	Scan based Techniques	57	PO1, PO2, PO3, PO9, PO10, PO12, PSO1	Faculty-student interaction improved
2	Dr.J.Sudhakar	Analog Communications	Noise	60	PO1, PO2, PO3, PO9, PO10,	Identify the bright students & slow learners
3	Ms.Dhanya M.Ravi	Low Power VLSI	Deep Sub Micron Design	67	PO1, PO3, PO5, PO9, PO10, PO12, PSO1	utilization of time properly to conduct active learning methods
4	Mrs.Ch.Anitha Bhavani	Control Systems	System Stability	55	PO1, PO2, PO3, PO9, PO10	Assess students with different learning styles
5	Mrs. T. Sandhya Kumari	Linear IC Applications	Design of active filters	67	PO1, PO2, PO9, PO10	Students came up with different design methodologies

**Table B.2.2.1.e: Flipped Classroom Activities**

#### Learning Material to students:

Open Source Video selected: <https://www.youtube.com/watch?v=xajgSUci9zs>







**Flipped Classroom activity**

S.No	Student Roll No	Grade Achieved before activity	Grade Achieved After activity	Improvement (Y/N)
1	18NM1A04C6	B	C	N
2	18NM1A04C7	B	A	Y
3	18NM1A04C8	C	A	Y
4	18NM1A04C9	C	D	N
5	18NM1A04D0	C	A	Y
6	18NM1A04D1	B	A	Y
7	18NM1A04D2	C	A	Y
8	18NM1A04D3	B	A	Y
9	18NM1A04D4	D	A	Y
10	18NM1A04D5	B	A	Y
11	18NM1A04D6	C	B	Y
12	18NM1A04D7	D	C	Y
13	18NM1A04D8	B	A	Y
14	18NM1A04D9	D	C	Y
15	18NM1A04E0	C	B	Y
16	18NM1A04E1	B	A	Y
17	18NM1A04E2	B	C	Y
18	18NM1A04E3	B	A	Y
19	18NM1A04E4	C	A	Y
20	18NM1A04E5	C	D	Y
21	18NM1A04E6	C	A	Y
22	18NM1A04E7	B	A	Y
23	18NM1A04E8	C	A	Y
24	18NM1A04E9	B	B	N
25	18NM1A04F0	D	A	Y
26	18NM1A04F1	B	A	Y
27	18NM1A04F2	C	B	Y
28	18NM1A04F3	D	C	Y
29	18NM1A04F4	B	B	N
30	18NM1A04F5	D	C	Y

**Figure B.2.2.1.i: Evaluation sheet of Flipped Classroom activities**

#### 4. Collaborative learning activities: Student Teams Achievements Division (STAD)

Collaborative learning involves implementing projects, writing reports, debates, group discussion and other activities. In our department, we implemented Student Teams Achievements Division (STAD) collaborative activity for effective content delivery to the students. With the help of these collaborative activities the classroom environment is converted into more students centric from teacher centric environment. The benefits of STAD and outcomes of the activity are explained below

##### Benefits of STAD:

- Participation of students in unique discussions
- Encourage transparency during learning
- Boost the potential of individual learning
- Knowledge of different learning environments

##### The outcome of the activity:

- Develop sharing thoughts and suggestions.
- Constructs peer knowledge.
- Plan for strong class involvement.
- Estimate the results.

##### Plan of Action for STAD:

Initially, the teacher gives a brief idea of the STAD operation to produce better performance. To this interactive session, a session of 50 min time will be allocated. The findings of the exercise should be conveyed to all students. In addition to the operation, the teacher explains the basics involved in the assigned tasks as set out in the following schedule.

##### Execution Plan:

##### Total time required to conduct this activity

• Interaction session by educator	: 50 min (1 session)
• Making Teams, Sources of information	: 50 min (1 session)
• Activity (3 sessions)	
▪ Collaborative learning- (Characteristics of radio receivers)	: 50 min (1 session)
▪ Individual Quiz	: 50 min (1 session)
▪ Group Quiz	: 50 min (1 session)
Total sessions	: 05

**Activity Procedure:**

The procedure followed for the implementation of collaborative activities is:

- Basic information on the topic in question was given at previous sessions
- Heterogeneous teams have been set up based on their styles. Similar learning style students have been grouped.
- A strong global learner in a team has been identified as a manager
- A full session was arranged for students to learn the topic from the suggested textbooks, journals, web resources, etc.
- The student's success was measured individually and as a group in both formative and summative ways.
- Individual quiz (viva-voce) and group quiz were conducted for summative assessment.
- Every individual has been asked three questions 3 Marks
- Each team is asked five questions – 5 Marks

**Attempts made to keep the discussion going on & Motivation to nonparticipation members:**

- Observe all teams whether or not the discussion is going in the right direction
- Advise and motivate students who are not actively involved in the activity;
- Present some animations and vignettes to visual learners
- The importance of teamwork has been demonstrated

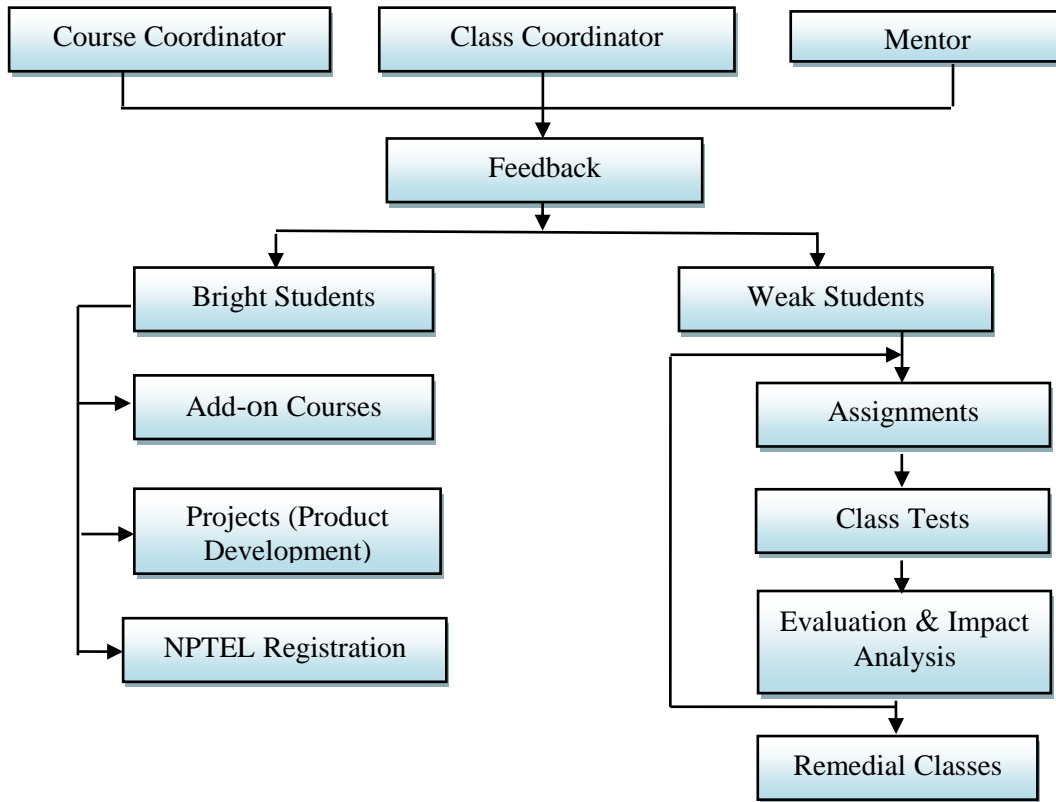
**Collaborative Activities**

Sl.No	Name of the Faculty	Course	Topic	No. of students Participated	Relevance to POs & PSOs	Activity Outcome
1	Dr.J.Sudhakar	Analog Communications	Radio Receivers	60	PO1, PO2	Maintain good learning environment
2	Mrs.T.Sandhya Kumari	Linear IC Applications	Active Filters- Analysis of first-order Low-pass and High-pass filters.	64	PO1, PO2, PO3	Students came up with different solutions with different approaches
3	Mrs.S.Malathi	Microwave Engineering	Microwave waveguide components & their S parameters	65	PO1, PO2, PO4	Students summarized the concepts in different styles
4	Mr.G.Lakshmana	Switching Theory and Logic Design	Sequential Circuits	57	PO1, PO2	Able to assess the students individually and as a team

**Table B.2.2.1.f: Collaborative Activities (STAD) conducted by the faculty**

### C. Methodologies to support weak students and encourage bright students (4)

The feedback from the course coordinator, class coordinator and mentor helps to identify the weak and bright students in a class. The process to identify the bright and weak students and the actions taken to support them is described in Figure B. 2.2.1.j as shown below.



**Figure B.2.2.1.j: Process to identify weak & bright students**

#### Guidelines to identify weak and bright students

The bright students are identified from their participation in classroom discussion, performance in the assessment tests and participation in classroom seminars, questioning ability and University result analysis. The Counselors regularly conduct meetings regarding progress of their mentees and are responsible to identify students who scored less than 60% marks in their internals. Under the HOD direction, the students Counselors evaluates the progress of the students who score below 60% marks in three or more subjects in MID examinations are considered as weak students and same is also intimated to their parents.

**i) Support for bright students:**

- Bright students are encouraged by cash awards every year by the management. The department also encourages the bright students with merit awards and cash prizes every year.
- The bright students were given an opportunity to enhance their skills by allowing them to participate in various events like SMART INDIA HACKATHON, VISTA, Jana Vignana Vedika and etc. where the students exhibit their skills.
- Institute encourages the bright students to participate in the National Level Technical Competitions organized by other Institutes and Universities.
- The bright students are also encouraged to enroll for NPTEL courses and acquire certificate from reputed institutes. The management encourages such students with cash awards.
- They are motivated by conducting seminars on advanced electronic tools required for industry.
- Students are encouraged to publish their scientific articles in the department level/college level news letter and Institute organizes events such as Technical Paper presentation, Student Symposium, and Project Expos, to develop and promote creativity and critical thinking among the students.
- Students are involved in organizing Workshops, Seminars, Student Technical fest (Yuvatarang and Techfest) and FDPs so that they get awareness about the importance of such activities in the college.
- College students are involved in campus recruitment drives, Independence Day celebrations extra and Anchoring in technical fests.
- The department insists and encourages students to bring out Technical Articles / Papers at the end of final year project so that they are exposed to Technical Paper writing skills, peer reviews, plagiarism and research ethics.
- The students are actively participated in UBA and NSS Activities.
- Incentives are given for online courses and extra projects are allocated to them.
- Bright students are allowed to utilize the lab facilities provided by the department to implement their innovative ideas to product based projects.
- The bright students act as mentors to slow learners and encourage them in studies.

- Innovation Fair 2017 at JNT University, Kakinada, created a platform for undergraduate students to explore their innovative ideas necessary for societal requirements where the students of ECE secured first prize.

**Impact Analysis:**

- Bright students have registered and received certificates for advanced courses by NPTEL.
- Students have given solutions to few real-time problems through Hackathon programs and got selected.
- Students have done working models of real-time projects and secured prizes in various technical events.
- Students showed interest to adapt to new technological courses.
- Academic performance is also improved.



**Figure B.2.2.1.k: Students achievements in various technical events**

**Bright Students achievements in technical events**

S.No	Date	Name of the Participation Event	Place	Name of the Students	Award
1	07-10-2017	Innovation idea on "Automatic LPG booking through IVRS, leakage detection and real time gas monitoring system"	Innovation Fair at JNTUK, Kakinada	P.Chandana sravani, V Tirumala gayatri, S Jyothi, S Prasanna lakshmi	First
2	11-02-2019 & 12-02-2019	IoT based industrial safety	Eclectique 2k19, JNTU, Vizianagaram	K. Sai Komali, M. Deekshitha, M. Jyothirmayee	Third
3	25-01- 2018	IoT based green house monitoring	Smart India Hackathon	J.V.Sakunthala G.Sravanthi K.Mamatha G.shanthi S.H.Sandhya V.N.Priya	Selected for Hackathon
4	25 -01-2018	Water Quality monitoring using IoT	Smart India Hackathon	M.sravani sandhya N.susila M.Manjusha M.Poornima T.Harshitha S.C. Priyanka	Selected for Hackathon
5	25-01- 2018	Vision based security system	Smart India Hackathon	D.Jhanavi G.Revathi K.Manju bhargavi K. N. Varalakshmi V. Manju R. Divya sai	Selected for Hackathon
6	14-09-2017 to 17-09-2017	Hands on implementation of IoT	VIEW, Visakhapatnam	A.Jhansi , B.Saranya	Second
7	14-09-2017 to 17-09-2017	Live model expo	VIEW, Visakhapatnam	A.Alekya , D.S.K. Sravanthi	Third
8	14-09-2017 to 17-09-2017	Hands on implementation of IoT	VIEW, Visakhapatnam	B Rama Devi	Second

**Table B.2.2.1.g: Bright students' achievements in various technical events**

The institute offers full fee waiver for merit students including fee reimbursement. The details for last three academic years are given below:



**List of Bright Students Encouraged with Merit Awards**

Academic Year	Year	Rank	Regd. No	Name of the student	% Scored	Cash Award (Rs)
2016-17	I B.Tech	1	16NM1A04C6	Rapaka Ramya Sri	96.3	23,400
	I B.Tech	1	16NM1A04D4	S. Heanth Sandhya	96.3	23,400
	I B.Tech	1	16NM1A048	Sushmita Mondal	96.3	23,400
	II B. Tech	1	15NM1A0494	P Madhu Mounika	87.84	17,500
	III B. Tech	1	14NM1A0452	K. Harika Supriya	86.32	10,000
	IV B. Tech	3	13NM1A0423	Devu Jhansi Lakshmi	82.89	5,000
2017-18	I B. Tech	2	17NM1A04D9	Ryali Roopa Sri	85.21	10950
	I B. Tech	3	17NM1A0417	B.M. Vidya Chandana	85.00	5000
	I B. Tech	3	17NM1A4A0	N Harsha Sri Maneesha	85.00	5000
	II B.Tech	3	16NM1A0407	Badagala Sharmila	80.45	22225
	III B.Tech	3	15NM1A0431	Gantla Poojitha	85.13	5000
	IV B. Tech	1	15NM5A0407	Ellapu Revathi	82.89	5000
2018-19	I B.Tech	3	18NM1A04F7	Yellapu Deepa	9.44	7300
	II B.Tech	2	17NM1A0472	L Kamakshi Poojitha	9.11	7087
	II B.Tech	2	17NM1A04B0	Paravada Anusha	9.11	7087
	II B.Tech	3	17NM1A0417	B M Vidya Chandana	9.05	4725
	II B.Tech	3	17NM1A0482	M Jahnavi Srilakshmi	9.05	22225
	II B.Tech	3	17NM1A0490	M Bindu Bhagya Sri	9.05	4725
	III B.Tech	1	16NM1A0467	Kandukuri Sushmitha	9.50	9450
	III B.Tech	3	16NM1A0407	Badagala Sharmila	9.07	22225
	IV B.Tech	2	15NM1A0431	Gantla Poojitha	86.52	7500

**Table B.2.2.1.h: Merit awards to bright students**



Figure B.2.2.1.I: NPTEL certificates attained by bright students

### Student upgradation in various courses

S. No	Name of the Certification Course	Name of the Student	Date of participation
1	Python3 and Raspberry Pi in Udemy	B.S.S Pradyumna	July 11 <sup>th</sup> 2019
2	Python3 and Raspberry Pi in Udemy	T.Jyothsna	July 8 <sup>th</sup> 2019
3	Python3 and Raspberry Pi in Udemy	Sowmya C	July 2 <sup>nd</sup> 2019
4	Python3 and Raspberry Pi in Udemy	B.Joshna	June 14 <sup>th</sup> 2019
5	Smart India hackthon2019–Monitoring input and output water quality of a water purifier through smart sensing using IoT	Ch Sowmya	May-2019
		G.Niharika	
		B.Joshna	
		A.V.A. Prathyusha	
		J.Chandini	
6	Smart India hackthon 2019 - Automatic alert to safety officers using IoT	B.Alekhyia	May-2019
		C.Divya Lakshmi	
		D.Sai vasavi	
		G.Thanmai	
		A.Kavitha Rao	
G.Rajeswary			
		G.Anjanadruthi	

Table B.2.2.1.i: Details of students' upgradation in various courses

**Skill Development Courses**

S. No.	Name of the workshop	In Association with	Duration	Resource Persons	No of students attended
1	Computational Thinking and problem solving skills using C	APSSDC	05-12-2018 to 10-12-2018	Mrs.R.Devi Lalitha Mrs.B.Bhargavi	52
2	Siemens systems for Robotics	CoreEL Technologies	13-12-2018	Mr.A.Ravi Kumar	53
3	Build Box Workshop	APSSDC	26-12-2018 to 10-01-2019	Mr.T.Ravi Kishore Mr.P.Alluru Raju	25
4	Computational thinking and problem solving skills using C	APSSDC	25-02-2019 to 02-03-2019	Mrs.R.Devilalitha Ms.B.Bhargavi	58
5	Analog & Digital IC Design using MENTOR GRAPHIC Tools	CoreEL Technologies	08-07-2019 to 12-07-2019	Mr. M. Nagendra	90
6	Cyber HACKING and Malware analysis	Indian Servers	12-09-2019 to 13-09-2019	Mr.D.Sai Satish, CEO	84

**Table B.2.2.1.j: Skill Development Courses****ii) Support to weak students:**

- The Faculty Counselor identifies the slow learners after every mid exam and external exams. The Department appoints one faculty for every 25 students entering in the first year.
- The department of ECE supports the students with backlogs by conducting remedial classes during semester break.
- This Faculty Counselor establishes a close relationship with each student and orients them to college practices, monitors their daily progress regularly (e.g., with at least fortnightly/monthly meetings) and guides them throughout the four-year course.
- The Faculty Counselor gives academic as well as personal advice. Sometimes, she may not necessarily be able to address all problems – but faculty plays a role in guiding the student, putting the student in touch with the appropriate assistance, and so on.
- The faculty helps the students by teaching the essential concepts, assignments will be given and conduct tests to improve the student. The students with backlogs will be identified from the results.

- Extra classes will be arranged to slow learners after the regular class hours that improve the faculty-student interaction so that the faculty can understand the learning level of the student.
- Separate material for easy understanding and practice will be provided.
- Faculty mentors are allotted to counsel them and motivate to study.
- Support to students with economically related problems is provided by the institute through mean scholarship.
- The timetable for remedial classes is prepared by the program coordinator.
- Monitoring of the student regularity is done by the faculty in-charge.

<b>Identification Criteria</b>	<b>Actions taken</b>
Students scoring less than 60% of marks in Internal Assessment.	<ul style="list-style-type: none"> <li>• Student counselor follows their progress regularly advising students about attending classes, making up classes missed, and getting additional help.</li> <li>• Conduction of remedial classes</li> <li>• Providing separate fast track material</li> </ul>
Diploma students who entered from other branches and late joining	<ul style="list-style-type: none"> <li>• Conduction of remedial classes and extra classes</li> </ul>
Students who fail in semester exams	<ul style="list-style-type: none"> <li>• Allotting separate faculty for each subject</li> <li>• Conduction of extra classes to those who failed in previous semester subjects.</li> </ul>

**Table B.2.2.1.k: Identification criteria for weak students**

SUBJECT NAME: DIP			FACULTY NAME: Mr. K. Rajendra Prasad
PERIOD: 05-11-18 & 06-11-18		TIME: 3.00- 5.00PM	TOTAL DURATION :2hr
S. No	Reg. No.	Name of the Student	Signature
1.	15NM1A0491	PAILA PRATHYUSHA	
2.	15NM1A0499	PUDI SAI KEERTHI	
3.	15NM1A04B6	TATAPUDI LIKHITA ROJY	
4.	15NM1A04B8	THAGARAMPUDI SRI VARSHNI	
5.	15NM1A04D6	GADIRAJU NAGALAKHSJMI BHAVANI	
6.	15NM1A04D9	GOISETTI ANUSHA	
7.	15NM1A04F1	MUDDADA NAVYA SREE	
8.	14NM1A04A5	SIVATI YAMUNA	

FACULTY

FACULTY IN-CHARGE

HEAD OF THE DEPARTMENT

**Figure B.2.2.1.m: Remedial Classes for Weak Students****Impact Analysis:**

- Balance their emotions and concentrate on studies.
- Gain moral support.
- Regularity is maintained.
- Backlogs are cleared.
- Participation in extra circular activities is improved.

**Impact analysis of mentoring weak students**

Roll No.	Name of the student	Problem of student	Back logs	Mentor	Outcome
15NM1A0491	P. Prathyusha	Marriage issue with parents	7	Mr. S. Tarun Prasad	Concentrated on studies
15NM1A0499	P.Sai Keerthi	Mother's health issue	3	Mr. P. Sudhakar	Regular to classes
15NM1A04B8	T. Sri Varshini	Health issue	6	Mr. G. Lakshmana	Build self confidence
15NM1A0483	M. Sai Jyothi	Depression due to family issue	4	Mrs.Ch. Padma Vani	Build self confidence
14NM1A04A5	Sivati Yamuna	Detained due to Health issue and got readmitted	4	Mr. B. Sandeep Kumar	Cope up with studies
16NM1A0447	G. A. Druthi	Not interested in studies	3	Mr.D.A.Tatajee	Motivated towards her career

14NM1A0481	P. S. Priyanka	Detained due to Health issue and got readmitted	4	Mr.B.Sai Bharadwaj	Concentrate on studies
17NM5A0407	Chiriki Divya	Health issue	3	Mr.D.Tilak Raju	Regular to classes
17NM1A0406	A. Padma	Financial issues	8	Mr.D.Tilak Raju	Self motivated
17NM1A0471	L Neeharika	Transport problem	4	Mrs.Ch. Anitha Bhavani	Regular to classes
17NM1A0484	M Gouthami	Health issue	8	Mr. K. Rajendra Prasad	Regular to classes
17NM1A04C2	P. Sailaja	Health issue & irregularity	3	Mr. P. Sudhakar	Regular to classes

**Table B.2.2.1.1: Impact analysis of mentoring weak students**

#### **D. Quality of Classroom Teaching (3)**

Vignan's Institute of Engineering for Women is very particular in maintaining quality of teaching in the classroom. Every faculty in our institute is trained to deliver the content in the classroom by adopting following procedures.

##### **Step 1: Create an outline:**

- ✓ What is the main goal for the lecture
- ✓ Create 3-5 objectives for the lecture: These will describe how the teacher help the learner reach the goal
- ✓ Create an outline for the key concepts required to understand these objectives
- ✓ Create a timeline for the session

##### **Step 2: Create a timeline:**

As per our class timetable, every session is planned for 50 minutes.

<b>Time</b>	<b>Activity</b>
5 mins	Revision of previous class content
5 mins	Formative Assessment (2-3 questions on previous class)
15 mins	Deliver of new content / slides
5 mins	Interactive questions
15 mins	Continuation of the content / slides
5 mins	Review / Questions / Summary of the sessions
<b>50 mins</b>	<b>End promptly</b>

**Step 3: Slides preparation:**

- ✓ For a 50 minutes lecture , plan no more than 20 slides
- ✓ PPT will contain the following
  - Font size for body text is 20 to 32
  - Provide an outline slide
  - Use short phrases
  - More graphics, less text
  - Move tables and dense text to a separate handout

**Step 4: Be confident**

- ✓ Talk to the students, not to the slides / blackboard
- ✓ Make eye contact with the students in different parts of the classroom
- ✓ Talk clearly, not too fast, not too slow
- ✓ Use humor judiciously. Keep it professional.

**Step 5: Provide links for web content**

Quality of classroom teaching is measured by

- Quality of content delivered by the faculty.
- Use of various instructional strategies to meet all the students understanding level.
- Student-teacher interaction that benefits the students to learn.
- Effectiveness of the content delivery.
- Objectivity in assessment.
- Transparency in evaluation.
- Attainment of COs & POs.
- Plan of action for unattained COs, POs and PSOs.
- ICT based classrooms in our department helps the faculty to implement OBE system and students to improve their learning skills.
- Program Vision, Mission, POs & PSOs are displayed in classroom notice boards for the student awareness to understand the significance of the program. The notice board is used to update the schedule regarding the exam conduction, revision etc.

The elements that measure the quality of classroom teaching is shown in Figure B.2.2.1.n

### **1. Quality Lecture Notes**

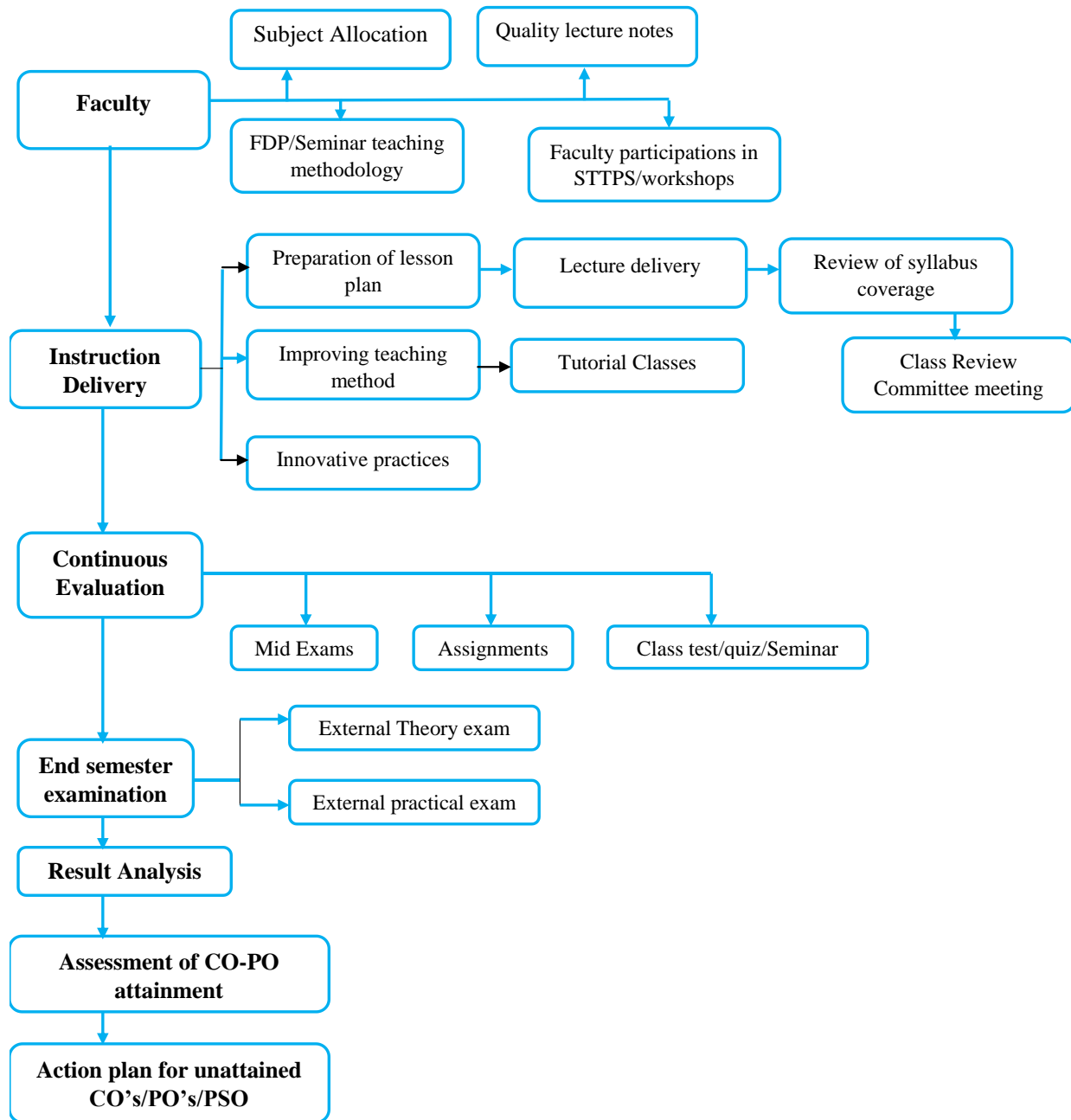
A Course file for the allotted course is prepared by the faculty well in advance and is verified by the internal experts for further improvements if required. The faculty for the allotted course maintains a course file that contains:

- Department vision, mission
- University academic calendar
- Course delivery plan
- Lecture notes
- Question bank (unit wise)
- Tutorial topics / problems
- Topics beyond syllabus
- Internal question papers& scheme
- Assignment questions
- University old question papers
- Result analysis & course attainments.

### **2. FDP/Seminar in Teaching Methodology**

The new faculty recruited by the recruitment committee is trained through orientation classes before he/she gives the class lecture to students in order to maintain quality in his/her teaching. The new faculty is asked to prepare the lecture notes for the allotted course and present it to the team consisting of Principal, program coordinator and senior faculties. The suggestions such as to improve the board management, rewrite the lecture notes by referring more text books, improve the speed in teaching will be given to the concerned faculty in order to improve his / her teaching skills. Also Faculty Development Programs, seminars on effective teaching methodologies for new faculty members.





**Figure B.2.2.1.n: Elements of quality teaching**

### 3. Course Delivery Plan (CDP)

It is a regular practice in the institution to prepare Course Delivery Plan (CDP) prior to the commencement of the class work handled by the individual faculty taking the guidance from the course coordinator. The CDP comprises of the entire plan for the course, learning objectives specified for each unit, course outcomes and CO-PO mapping. The CDP is prepared in

harmonious to the university academic calendar. The innovative practices to be implemented are planned in advance and are mentioned in CDP. ICT tools are used by the faculty to deliver the content in an effective manner. The CDP comprises the teaching aids required to deliver the particular concept and textbooks to be referred. At the end of each unit, the Course Outcome is defined and the CO-PO mapping table for the particular course is prepared at the end of CDP that build the student understanding level of the objectives and outcomes of each unit. The sample CDP for a course Signals & Systems is given in Figure B.2.2.1.o



VIGNAN' S INSTITUTE OF ENGINEERING FOR WOMEN: VISAKHAPATNAM

**COURSE DELIVERY PLAN –THEORY**

<b>DEPARTMENT OF ELECTRONICS &amp; COMMUNICATION ENGINEERING</b>			T : 3+1
PROGRAM (UG/PG)	: ECE		P : 0
Course Code	: C205		C : 3
Course Name	: SIGNALS & SYSTEMS		Date : 11/5/2016
Regulation	: R13		Rev No : 00
<b>Class</b>	<b>Course Coordinator</b>	<b>Section</b>	<b>Name of the Faculty</b>
II YEAR -I SEM	Mrs. T. Sandhya Kumari	A	Mrs. D. Vijaya Lakshmi
		B & C	Mrs. T. Sandhya Kumari

**UNIT 1: SIGNAL ANALYSIS & FOURIER SERIES****Unit Syllabus:**

Analogy between vectors and signals, Orthogonal signal space, Signal approximation using orthogonal functions, mean square error, Closed or complete set of orthogonal functions, Orthogonality in complex functions, Exponential and sinusoidal signals, Concepts of Impulse function, Unit step function, Signum function. Representation of Fourier series, Continuous time periodic signals, properties of Fourier series, Dirichlet's conditions, Trigonometric Fourier series and Exponential Fourier series, Complex Fourier spectrum.

**Objective:** To study the basic concepts of continuous time signals, classification and representation of continuous time signals using Fourier series.

Session No	Topics to be covered	Reference	Teaching Aids
1.	Introduction to Signals	T.B: 2, Foreword Page No: xxvii-xxx	BB
2.	Analogy between vectors and signals	T.B: 1, Ch:3 Page No: 44-48	BB
3.	Orthogonal vectors, signals	T.B: 1, Ch:3 Page No: 49-51	BB
4.	Orthogonal vector space	T.B: 1, Ch:3 Page No: 51-53	BB
5.	Signal approximation using orthogonal functions	T.B: 1, Ch:3 Page No: 53-54	BB
6.	Mean square error	T.B: 1, Ch:3 Page No: 55-56	BB
7.	Closed or complete set of orthogonal functions	T.B: 1, Ch:3 Page No: 56-58	BB
8.	Orthogonality in complex functions	T.B: 1, Ch:3 Page No: 58-61	BB
9.	Classification of signals, Basic operations on signals	T.B: 2, Ch:1 Page No:1-14	BB

10.	Exponential and sinusoidal signals	T.B: 2, Ch:1 Page No:15-20	BB
11.	Concepts of Impulse function	T.B: 2, Ch:1 Page No:30-33	BB
12.	Unit step function, Signum function.	T.B: 2, Ch:1 Page No:34-35	BB
13.	Tutorial Problems on calculating energy, power etc.	RB: 4, Ch:1 Page No:65-82	BB
14.	Tutorial Problems on testing the type of signal.	RB: 4, Ch:1 Page No:41-54	BB
15.	Fourier series Representation	T.B: 2, Ch:3 Page No:186-187	BB
16.	Evaluating the Fourier coefficients	R.B: 5, Ch:5 Page No:5.3-5.5	BB
17.	Continuous time periodic signals	T.B: 2, Ch:3 Page No:190-192	BB
18.	Properties of Fourier series	T.B: 2, Ch:3 Page No:202-205	BB
19.	Dirichlet's conditions	T.B: 2, Ch:3 Page No:195-201	BB
20.	Exponential Fourier series	T.B: 1, Ch:3 Page No:66-68	BB
21.	Complex Fourier spectrum	T.B: 1, Ch:3 Page No:89-91	BB
22.	Tutorial Problems on trigonometric Fourier Series	RB: 4, Ch:4 Page No:207-211	BB
23.	Tutorial Problems on Exponential Fourier Series	RB: 4, Ch:4 Page No:234-242	BB
24.	Tutorial Problems on Magnitude &Phase Response	RB: 4, Ch:4 Page No:259-273	BB
<b>Content beyond syllabus covered (if any):</b> Review on vectors, Basic operations on signals.			
<b>Course Outcome (CO1):</b> Describe the characteristics of continuous-time signals and represent using Fourier series.			

## UNIT 2: FOURIER TRANSFORMS & SAMPLING

### Unit Syllabus:

Deriving Fourier transform from Fourier series, Fourier transform of arbitrary signal, Fourier transform of standard signals, Fourier transform of periodic signals, properties of Fourier transforms, Fourier transforms involving impulse function and Signum function. Introduction to Hilbert Transform. Sampling theorem – Graphical and analytical proof for Band Limited Signals, impulse sampling, Natural and Flat top Sampling, Reconstruction of signal from its samples, effect of under sampling – Aliasing, Introduction to Band Pass sampling.

**Objective:** To learn Fourier Transforms, properties of Fourier Transform and understand the concept of sampling a signal.

Session No	Topics to be covered	Reference	Teaching Aids
25.	Deriving Fourier transform from Fourier series	RB: 4, Ch:5	BB

		Page No:298-299	
26.	Fourier transform of arbitrary signal	T.B: 1, Ch:4 Page No:105-109	BB
27.	Fourier transform of standard signals	T.B: 1, Ch:4 Page No:113-121	BB
28.	Fourier transform of periodic signals	T.B: 1, Ch:4 Page No:128-129	BB
29.	Properties of Fourier transforms	T.B: 1, Ch:4 Page No:137-151	BB
30.	Fourier transforms involving impulse function and Signum function	RB: 4, Ch:1 Page No:300-311	BB
31.	Introduction to Hilbert Transform	RB: 4, Ch:1 Page No:380-384	BB
32.	Tutorial Problems on determining Magnitude & phase response	RB: 4, Ch:1 Page No:328-340	BB
33.	Tutorial Problems on properties of Fourier Transform	RB: 4, Ch:1 Page No:349-355	BB
34.	Tutorial Problems on Signum function	RB: 4, Ch:1 Page No:345-347	BB
35.	Sampling theorem	T.B: 2, Ch:7 Page No:550	PPT
36.	Graphical and analytical proof for Band Limited Signals	RB: 4, Ch:8 Page No:542-545	BB
37.	Impulse sampling,	T.B: 2, Ch:7 Page No:545-549	BB
38.	Natural and Flat top Sampling	T.B: 3, Ch:6 Page No:434-437	BB
39.	Reconstruction of signal from its samples	T.B: 2, Ch:7 Page No:522-527	BB
40.	Effect of under sampling – Aliasing	T.B: 2, Ch:7 Page No:527-534	Think-Pair-Share
41.	Introduction to Band Pass sampling	T.B: 3, Ch:6 Page No:430-432	BB
<b>Content beyond syllabus covered (if any): NIL</b>			
<b>Course Outcome (CO2): Analyze a signal by applying Fourier transform and interpret the sampling process to reconstruct the sampled signal.</b>			

### Unit 3: SIGNAL TRANSMISSION THROUGH LINEAR SYSTEMS

#### Unit Syllabus:

Linear system, impulse response, Response of a linear system, linear time invariant (LTI) system, linear time variant (LTV) system, Transfer functions of a LTI system. Filter characteristics of linear systems. Distortion less transmission through a system, Signal bandwidth, system bandwidth, Ideal LPF, HPF and BPF characteristics, Causality and Poly-Wiener criterion for physical realization, relationship between bandwidth and rise time.

**Objective:** To realize the response of a system when applied with continuous time signal.

Session No	Topics to be covered	Reference	Teaching Aids
42.	Linear system, impulse response, Response of a linear system	R.B: 4, Ch:6 Page No:410-412	STAD
43.	Linear time invariant (LTI) system, Linear time variant (LTV) system	T.B: 1, Ch:1 Page No:1-4	
44.	Transfer function of a LTI system	R.B: 4, Ch:6 Page No:416-417	
45.	Filter characteristics of linear systems	T.B: 1, Ch:6 Page No:245-248	BB
46.	Distortion less transmission through a system	T.B: 1, Ch:6 Page No:248-250	BB
47.	Signal bandwidth, system bandwidth	R.B: 4, Ch:6 Page No:420-421	BB
48.	Ideal LPF, HPF and BPF characteristics	T.B: 1, Ch:6 Page No:250-252	BB
49.	Causality and Poly-Wiener criterion for physical realization	T.B: 1, Ch:6 Page No:252-254	BB
50.	Relationship between bandwidth and rise time.	R.B: 4, Ch:6 Page No:424-427	BB
51.	Tutorial Problems on classification of systems.	R.B: 4, Ch:6 Page No:427-432	BB
52.	Tutorial Problems on computing the response of systems.	R.B: 4, Ch:6 Page No:432-447	BB
<b>Content beyond syllabus covered (if any): NIL</b>			
<b>Course Outcome (CO3): Determine the response of a linear system to continuous time signal.</b>			

#### UNIT IV: CONVOLUTION AND CORRELATION OF SIGNALS

##### Unit Syllabus:

Concept of convolution in time domain and frequency domain, Graphical representation of convolution, Convolution property of Fourier transforms. Cross correlation and auto correlation of functions, properties of correlation function, Energy density spectrum, Parseval's theorem, Power density spectrum, Relation between auto correlation function and energy/power spectral density function. Relation between convolution and correlation, Detection of periodic signals in the presence of noise by correlation, Extraction of signal from noise by filtering.

**Objective:** To understand the convolution and correlation functions and their application for the detection of a periodic signal in the presence of noise.

Session No	Topics to be covered	Reference	Teaching Aids
53.	Concept of convolution in time domain and frequency domain	R.B: 4, Ch:7 Page No:457-459	BB

54.	Graphical representation of convolution	T.B: 1, Ch:10 Page No:400-403	BB
55.	Convolution property of Fourier transforms	R.B: 4, Ch:7 Page No:459,463-464	BB
56.	Cross correlation and auto correlation of functions	R.B: 4, Ch:7 Page No:485-491	BB
57.	Properties of correlation function	T.B: 1, Ch:12 Page No:519-524	BB
58.	Energy density spectrum(ESD), Parseval's theorem, Power density spectrum	R.B: 4, Ch:7 Page No:491-497	BB
59.	Relation between auto correlation function and energy/power spectral density(PSD) function	R.B: 4, Ch:7 Page No:497-498	BB
60.	Relation between convolution and correlation	T.B: 1, Ch:12 Page No:518-519	BB
61.	Detection of periodic signals in the presence of noise by correlation	T.B: 1, Ch:12 Page No:526-529	BB
62.	Extraction of signal from noise by filtering	T.B: 1, Ch:12 Page No:531-535	BB
63.	Tutorial Problems on convolution	R.B: 4, Ch:7 Page No:460-462,465-483	BB
64.	Tutorial Problems on correlation	R.B: 4, Ch:7 Page No:487,499-500	BB
65.	Tutorial Problems on ESD & PSD	R.B: 4, Ch:7 Page No:500-515	BB
<b>Content beyond syllabus covered (if any): NIL</b>			
<b>Course Outcome (CO4): Compute the signal characteristics using correlation and convolution functions.</b>			

**UNIT V: LAPLACE TRANSFORMS**

**Unit Syllabus:** Review of Laplace transforms, Partial fraction expansion, Inverse Laplace transform, Concept of region of convergence (ROC) for Laplace transforms, constraints on ROC for various classes of signals, Properties of L.T's, Relation between L.T's, and F.T. of a signal. Laplace transform of certain signals using waveform synthesis.

**Objective:** To review Laplace Transforms, properties of Laplace Transforms and to understand the application of Laplace Transform for representation of signals.

Session No	Topics to be covered	Reference	Teaching Aids
66.	Review of Laplace transforms(L.T.)	T.B: 2, Ch:9 Page No:655-656	BB
67.	Partial fraction expansion	R.B: 1, Appendix Page No:767-772	BB
68.	Inverse Laplace transform(I.L.T)	T.B: 2, Ch:9 Page No:670-673	BB
69.	Concept of region of convergence (ROC) for L.T.	T.B: 2, Ch:9	BB

		Page No:662-670	
70.	Constraints on ROC for various classes of signals	RB: 4, Ch:9 Page No:682-683	BB
71.	Properties of L.T's	T.B: 2, Ch:9 Page No:683-691	Flipped Classroom
72.	Relation between L.T's, and F.T. of a signal	RB: 4, Ch:9 Page No:594-595	BB
73.	Laplace transform of certain signals using waveform synthesis.	T.B: 3, Ch:7 Page No:495-497	BB
74.	Tutorial Problems on computing L.T	RB: 4, Ch:9 Page No:602-616	BB
75.	Tutorial Problems on properties of L.T	RB: 4, Ch:9 Page No:630-650	BB
76.	Tutorial Problems on computing I.L.T	RB: 4, Ch:9 Page No:650-668	BB
77.	Tutorial Problems on waveform synthesis	RB: 4, Ch:9 Page No:703-718	BB
<b>Content beyond syllabus covered (if any): Review on Laplace Transforms</b>			
<b>Course Outcome (CO5): Determine the region of convergence of continuous time signals using Laplace transform.</b>			

**UNIT VI: Z–TRANSFORMS****Unit Syllabus:**

Fundamental difference between continuous and discrete time signals, discrete time signal representation using complex exponential and sinusoidal components, Periodicity of discrete time using complex exponential signal, Concept of Z- Transform of a discrete sequence. Distinction between Laplace, Fourier and Z transforms. Region of convergence in Z-Transform, constraints on ROC for various classes of signals, Inverse Z-transform, properties of Z-transforms.

**Objective:** To learn the differences between continuous and discrete time signal and introduce Z-Transforms for the representation of a discrete sequence.

Session No	Topics to be covered	Reference	Teaching Aids
78.	Fundamental difference between continuous and discrete time signals	T.B: 2, Ch:1 Page No: 1-5	BB
79.	Discrete time signal representation using complex exponential and sinusoidal components	T.B: 2, Ch:1 Page No:21-25	BB
80.	Periodicity of discrete time using complex exponential signal	T.B: 2, Ch:1 Page No:25-29	BB
81.	Concept of Z- Transform of a discrete sequence	T.B: 2, Ch:10 Page No:741-743	BB
82.	Distinction between Laplace, Fourier and Z -transforms.	T.B: 3, Ch:8 Page No:582-584	BB
83.	Region of convergence in Z-Transform, Constraints on	T.B: 2, Ch:10	BB



	ROC for various classes of signals	Page No:748-757	
84.	Inverse Z-transform	T.B: 2, Ch:10 Page No:757-758	BB
85.	Properties of Z-transforms	T.B: 2, Ch:10 Page No:767-774	BB
86.	Tutorial Problems on computing Z-Transforms	RB: 4, Ch:10 Page No:761-783	BB
87.	Tutorial Problems on Properties of Z-Transforms	RB: 4, Ch:10 Page No:799-814	BB
88.	Tutorial Problems on computing inverse Z-Transforms	RB: 4, Ch:10 Page No:817-855	BB
<b>Content beyond syllabus covered (if any): NIL</b>			
<b>Course Outcome (CO6): Examine the region of convergence of discrete time signals using Z-transform.</b>			

\* Session duration: 50 min.

Mapping COs and POs:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	3	3	-	-	-	-	-	-	3	-	2
CO2	3	2	2	3	2	-	-	-	-	2	-	2
CO3	3	2	2	2	3	3	-	-	3	2	-	2
CO4	3	3	3	-	2	3	-	-	2	2	-	2
CO5	3	3	2	3	2	2	-	-	2	3	-	2
CO6	2	3	3	3	-	-	-	-	-	2	-	2

**3: Strong**

**2: Medium**

**1: Low**

**TEXT BOOKS:**

1. Signals, Systems & Communications - B.P. Lathi, BS Publications, 2003.
2. Signals and Systems - A.V. Oppenheim, A.S. Willsky and S.H. Nawab, PHI, 2nd Edn.
3. Signals & Systems- Narayan Iyer and K Satya Prasad, Cenage Pub.

**REFERENCE BOOKS:**

1. Signals & Systems - Simon Haykin and Van Veen, Wiley, 2nd Edition.
2. Signals and Systems – K R Rajeswari
3. Fundamentals of Signals and Systems- Michel J. Robert, MGH International Edition, 2008.
4. Signals & Systems- A. Anand Kumar, Third Edition, PHI Learning Pvt. Ltd

### Figure B.2.2.1.o: Sample Course Delivery Plan

#### 4) Instruction Delivery

Faculty members take classes as per time table and lesson plan, duly compensating for lost classes due to leaves or unexpected holidays following various teaching-learning techniques and aids that are suitable for a particular topic to be discussed in the class effectively. The entire faculty also adopts ARCS (Attention, Relevance, Confidence and Satisfaction) model of

instruction delivery. While delivering the lecture faculty draw the attention of students in the class room by giving examples to related topics. The faculty explains the relevance of the topic to students by bringing its future use in industry and R&D applications. To create confidence in the students, their future goals are prepared and displayed in their study room or hostel room. Great scientist's photos like Einstein, Faraday, etc., were asked to display in their study room. The goals are revised by the faculty frequently. To create satisfaction among students, outstanding performance students are appreciated through rewards in public, like displaying names in college notice board, special appreciation from principal, fee waiving from management. Newly recruited faculties are trained on how to use the ICT tools for lecture delivery. Easy concepts are explained with PPTs, models using ICT tools. Difficult concepts that are practical oriented are explained in Labs. ICT based classrooms in the department helps the faculty to implement OBE and students to improve their learning skills.

### **5) Continuous Evaluation**

This consists of two mid exams every semester both descriptive and objective online conducted by university with assignments for theory courses and weekly viva voce, observation, record evaluation and internal lab exam for laboratory courses. There are surprise tests conducted once in 3 to 4 days to understand the attention level of students. The performance of the identified weak learners is improved by

- Regular monitoring & counseling to provide moral support
- Encourage them towards studies
- Counsel them to be regular
- Give assignments frequently
- Arrange extra classes if required.

### **6) Review of Syllabus Coverage**

HoD reviews the coverage of syllabus on a regular basis in faculty meetings. Class Review Committee (CRC) constitutes of HoD, two bright and two average students of the class along with class faculty and class coordinator. CRC meetings are organized before each mid examination to review the syllabus coverage of each course.

### **7) Results Analysis**

Analysis of Results for mid examination is done by department DEO under the guidance of HoD for taking action for low pass percentage in any course to improve the result in the end

examination. Analysis is also done after the end examination results by the examination cell. They provide marks/grades of each student for every course. With respect to results, we are proud to convey that Vignan's Institute of Engineering for Women remains in the first five places of the JNTUK affiliated colleges from year it started even though the ranks of the students joining the college ranges from 10,000 to 60,000. This elevates the effectiveness of the teaching learning process in the college.

**Impact Analysis:**

- The quality of teaching by the faculty is reflected in the external exam results scored by the students where the program is at top 5 places in the university.

**E. Conduct of Experiments (3)**

Practical knowledge is equally significant to theoretical knowledge for the undergraduate program. The practical implementation of the theoretical concepts helps the students to improve their technical skills. Every student will maintain an observation book for each laboratory and she will record her observation during the conduct of experiment in this book. Along with this, the student will submit record sheets of the experiment done in the laboratory during previous week.

- Sufficient equipment is available in every lab for conducting the lab session.
- The labs are under the supervision of skilled and qualified lab technicians.
- The lab assistants take the responsibility of checking the equipment in proper condition.
- The faculty allotted with the lab course checks for the readiness of the equipment and experiment before conduction of the lab experiments to students.
- The list of the experiments prescribed by the university is displayed in the laboratories for the student to be aware of the lab syllabus structure.
- The faculty handling the lab sessions for the semester prepares the manuals describing the objective of the experiment, model graphs and circuits, model waveforms and expected results.
- The experiment results are validated by the faculty well in advance before the start of the semester.
- The students are formed into batches of 3 members each and the labs are conducted logically.

- The faculty gives the demonstration of the experiment beforehand and explains the outcome of the experiment.
- The lab assistants ensure that the equipment is handled properly by the students and make them complete the assigned task.
- The students are assessed as per the designed rubrics and the results are verified. The faculty asks the student to submit the written document (Record) after successful completion of the experiment.
- Attitude and behavioral issues of the student in performing the experiment as a team is also assessed.
- The quality of lab conduction is improved by conducting experiments beyond the specified list by university through virtual Labs. Virtual labs enrich the educational experience of the student and focus on conceptual understanding and technical skills. Design and analysis type experiments are done by students to improve their critical thinking skills.
- In addition to the lab conduction, every year there is a procedure to conduct annual audit to laboratories to identify the working status of the equipment available in the laboratory to conduct experiments as per the university norms. The recommendations for the equipment servicing/purchase for smooth conduction of experiments will be specified by the lab-Incharge and is forwarded to the management through HoD. The stock registers are updated after the procurement of the equipment.

#### **F. Continuous Assessment in the laboratory (3)**

- For internal evaluation, total 25 marks are distributed as 10 marks for day-to-day evaluation, 10 marks for internal exam and 5 marks for record work.
- Effective assessment is done by defining the rubrics.

#### **Rubric for day-to-day evaluation:**

The rubric for day-to-day evaluation of laboratory experiments is designed based on student technical skills, laboratory skills, interpersonal skills and regularity. The rubric for a lab session is designed to assess the student's

- Technical Skills:
  - Prior preparation to the current experiment
  - Practical knowledge to interpret the results properly

- Participation in performing the experiment
- Interpersonal Skills:
  - Time management-ability to complete the task in stipulated time
  - Communication skills- able to correctly interpret the obtained results.
- Regularity:
  - Punctuality and regularity to lab.

To maintain regularity to lab, 2 marks were allotted to student's regularity.

**Assessment Sheet:**



**VIGNAN'S INSTITUTE OF ENGINEERING FOR WOMEN**

**DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING**

**DAY TO DAY LAB EVALUATION SHEET**

**Date:**

**Laboratory Name:**

**Reg.No:**

**Experiment:**

ASSESSMENT	MAXIMUM MARKS	AWARDED MARKS
Laboratory Skills	2	
Pre-preparation	2	
Experiment knowledge	2	
Interpersonal Skills	2	
Subsistence	2	
<b>TOTAL</b>	<b>10</b>	

**Faculty Incharge**

- *Laboratory Skills*: Student's lab performance during rotation in your lab.
- *Pre-preparation*: Student's prior preparation to the current experiment.
- *Experiment knowledge*: Student's appropriate amount of concept and understood the content enough.
- *Interpersonal Skills*: Team work and Communication skills
- *Subsistence*: Time management, Punctuality, Attendance.

**Figure B.2.2.1.p:** Assessment sheet for regular lab day-to-day evaluation

### Rubric sheet for day-to-day evaluation of Lab

<b>Name of the Lab</b>		<b>Date</b>	
<b>Name of the Student</b>		<b>Regd. No.</b>	
<b>Name of the experiment</b>		<b>Max. Marks</b>	08

Metrics/ Attributes	Excellent	Good	Average/Needs Improvement	Score
	(2 Marks)	(1 Marks)	(0.5 Marks)	
<b>Laboratory skills</b>	Participated actively in conducting the experiment. Good team work.	Showed interest to do the experiment but could not mingle with the team.	Lack of interest in conducting the experiment.	
<b>Pre-Preparation</b>	Suffice knowledge on the basic concepts to conduct the experiment.	Good knowledge to conduct the experiment. Correlation to the theoretical concept is missing.	No prior preparation to conduct the experiment	
<b>Experiment Knowledge</b>	Clearly demonstrated the experiment conducted and results obtained.	Conducted the experiment successfully but could not interpret the results clearly.	Conducted the experiment but poor understanding of the results obtained.	
<b>Interpersonal Skills</b>	Effective time management to complete the experiment, graphs and able to draw the conclusions.	Completed the experiment but could not draw the result from the graphs drawn. Need to manage time properly.	Could not complete the graphs and results in stipulated time.	
<b>Total Score</b>				

**Table B.2.2.1.m: Rubric sheet for day-to-day evaluation of Lab**

**G. Student Feedback on teaching learning process and actions taken (6)**

There is a regular practice of collecting the feedback from the students regarding the content delivery, their understanding capability about the concepts taught by the faculty, speed of content delivery and board management. The feedback is analyzed and orientation classes will be conducted for the faculty with substandard feedback for improvement. Faculty Development Programs are organized by the department to the enhancement and upgradation of latest trends in technology. Training classes are organized for faculty and students to get exposure with modern tools required for the development of real time projects and implementation. Faculties of the department undergo training courses related to quality improvement in engineering education to impart pedagogical methods in teaching.

The institute has a procedure of collecting feedback from students once in every semester. The feedback form is designed such that the student can express the difficulties encountered in learning a course by a particular faculty handling the course. The collected feedback will be summarized and is communicated to the faculty. This feedback is also considered as a part of Annual Performance Appraisal with a weightage of 25% in Teaching-Learning and Evaluation category. More than 90% of the faculties are graded on 9 to 10 point scale which evidences for good quality in the teaching. A sample student feedback form is shown in Figure B.2.2.1.q, a sample feedback analysis sheet in Figure B. 2.2.1.r and consolidated student feedback analysis in Figure B. 2.2.1.s.

**Action Taken**

- The faculty with less feedback is asked to give an orientation class before Principal, HoD and another senior subject faculty. Based on the performance, panel members will provide to improve teaching skills.
- The lecture notes of the faculty is reviewed and suggested to improve the quality by referring more books and rewrite the content.
- After 2-3 weeks, feedback is again taken from students in the subject for necessary action.
- In extreme cases, where the faculty member is unable to improve to the minimum desired standard, the faculty member is advised to improve and the course is allotted to another faculty.

**VIGNAN'S INSTITUTE OF ENGINEERING FOR WOMEN:: VISAKHAPATNAM**  
**STUDENT FEEDBACK - ECE -B**

(66)

Class: III B. Tech(2017 Admitted Batch) - II Sem      Academic Year: 2019-20      Date: \_\_\_\_\_

S. No		MPMC	VLSI	MWE	DSP	OOPS	IPR
		Ch.RB	DAT	SM	TSK	BHL	MSR
1	Do you feel the class interesting?	NO	Yes	Yes	NO	Yes	Yes
2	Are the fundamental concepts presented with clarity?	NO	Yes	Yes	Yes	NO	Yes
3	Do you consider the teacher knowledge in subject?	Yes	Yes	Yes	NO	NO	Yes
4	Does the teacher come to the class well prepared?	Yes	Yes	Yes	NO	NO	Yes
5	Is Teacher speed adequate?	Yes	Yes	Yes	Yes	Yes	Yes
6	Is the syllabus properly covered?	NO	Yes	Yes	Yes	Yes	Yes
7	Are the classes regularly & punctually taken?	NO	Yes	Yes	Yes	Yes	Yes
8	Can the teacher be heard by the back-bench students?	Yes	Yes	Yes	Yes	Yes	Yes
9	Is the teacher approachable for clarification of doubts?	NO	Yes	Yes	Yes	NO	Yes
10	Is the handwriting/figures visible?	Yes	Yes	Yes	Yes	Yes	Yes

\* Rating should be given in Yes/No

Subjects	
MPMC	Microprocessors & Micro Controllers
VLSI	VLSI Design
MWE	Microwave Engineering
DSP	Digital Signal Processing
OOPS	Object Oriented Programming through C++
IPR	Intellectual Patent Rights

Overall Opinion


MPMC	Excellent	Very Good	Fair	✓	Poor
VLSI	Excellent	Very Good	Fair	✓	Poor
MWE	Excellent	Very Good	✓	Fair	Poor
DSP	Excellent	Very Good	Fair	✓	Poor
OOPS	Excellent	Very Good	Fair	✓	Poor
IPR	Excellent	Very Good	✓	Fair	Poor

Comments if any \_\_\_\_\_

Name of the Faculty	
Ch.RB	Mr. Ch. Ramesh Babu
DAT	Mr.D.Appanna Tatajee
SM	Mrs.S.Malathi
TSK	Mrs.T.Sandhya Kumari
BHL	Ms.B.Haritha Lakshmi
MSR	Mrs.M.Sirisha Rani

**Figure B.2.2.1.q: Sample Student Feedback Form**




**VIGNAN'S INSTITUTE OF ENGINEERING FOR WOMEN: VISAKHAPATNAM**  
**STUDENT FEEDBACK ANALYSIS**

Class: 10 B Tech Branch: ECF-A Sem - 2 Date: 08.8.2019  
[2017 Admitted] Total No. of Students: 59/67 Academic Year: 2017-18

Name of the Theory Course	Name of the Staff Member
<u>AWP [Antenna and wave Propagation]</u>	<u>Mrs. T. Ulma Maheswari</u>

1) Do you feel the class interesting?	YES <input type="checkbox"/>	<u>58</u>	NO <input type="checkbox"/>	<u>1</u>
2) Are the fundamental concepts presented with clarity?	YES <input type="checkbox"/>	<u>59</u>	NO <input type="checkbox"/>	<u>-</u>
3) Do you consider the teacher knowledge in subject?	YES <input type="checkbox"/>	<u>59</u>	NO <input type="checkbox"/>	<u>-</u>
4) Does the teacher come to the class well prepared?	YES <input type="checkbox"/>	<u>59</u>	NO <input type="checkbox"/>	<u>-</u>
5) Is Teacher speed adequate?	YES <input type="checkbox"/>	<u>56</u>	NO <input type="checkbox"/>	<u>3</u>
6) Is the syllabus properly covered?	YES <input type="checkbox"/>	<u>59</u>	NO <input type="checkbox"/>	<u>-</u>
7) Are the classes regularly & punctually taken?	YES <input type="checkbox"/>	<u>59</u>	NO <input type="checkbox"/>	<u>-</u>
8) Can the teacher be heard by back bench students?	YES <input type="checkbox"/>	<u>59</u>	NO <input type="checkbox"/>	<u>-</u>
9) Is the teacher approachable for the clarification of the doubts?	YES <input type="checkbox"/>	<u>59</u>	NO <input type="checkbox"/>	<u>-</u>
10) Is the handwriting/figures visible?	YES <input type="checkbox"/>	<u>59</u>	NO <input type="checkbox"/>	<u>-</u>

Overall opinion:

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>52</u>	<u>7</u>	<u>-</u>	<u>-</u>
Excellent	Very Good	Fair	Poor

Super  
  
9.76  
 Overall Index

Signature of the Faculty: [Signature]  
 Signature of the HOD: [Signature]  
 Signature of the Principal: [Signature]

**Figure B.2.2.1.r:** Sample Student Feedback Analysis Form

VIGNAN'S INSTITUTE OF ENGINEERING FOR WOMEN: VISAKHAPATNAM  
III B.Tech - II Semester (2016 Admitted batch)  
Consolidated Feedback Branch wise

Branch: ECE-A      Academic Year - 2018-19      III Year - II Sem      Date: 04.02.2019

Sl. No	Name of the Faculty	Designation	Subject	Grades				Total Strength	A+B+C	10% Overall	Signature
				A	B	C	D				
1	Dr.J.Sudhakar	Assoc.Prof	VLSI	25	15	6	0	46	46	8.57	
2	Mr.Ch.Ramesh Babu	Assoc.Prof	MPMC	26	15	4	1	46	46	8.61	
3	Mrs.S.Malathi	Asst.Prof	MWE	19	19	6	1	46	45	7.96	
4	Mr.K.V.Ramana Rao	Asst.Prof	DSP	14	22	6	4	46	46	7.39	
5	Ms.G.Pavani Latha	Asst.Prof	OOPS	27	18	1	0	46	46	9.09	
6	Mr.K.Santhosh Kumar	Asst.Prof	IPR	34	10	0	0	46	44	9.13	

Branch: ECE-B

Sl. No	Name of the Faculty	Designation	Subject	Grades				Total Strength	A+B+C	10% Overall	Signature
				A	B	C	D				
1	Mrs.Ch.Padma Vani	Asst.Prof	VLSI	44	17	0	0	61	61	9.44	
2	Mr.B.Sandeep Kumar	Asst.Prof	MPMC	33	28	0	0	61	61	9.08	
3	Mrs.P.Kamala	Asst.Prof	MWE	31	30	0	0	61	61	9.02	
4	Mr.K.V.Ramana Rao	Assoc.Prof	DSP	34	26	0	0	61	61	8.98	
5	Ms.G.Pavani Latha	Asst.Prof	OOPS	38	19	4	0	61	61	8.98	
6	Ms. L. Tejaswini	Asst.Prof	IPR	50	11	0	0	61	61	9.64	


Branch: ECE-C

Sl. No	Name of the Faculty	Designation	Subject	Grades				Total Strength	A+B+C	10% Overall	Signature
				A	B	C	D				
1	Mrs.Ch.Padma Vani	Asst.Prof	VLSI	30	34	0	0	64	64	8.94	
2	Mr.B.Sandeep Kumar	Asst.Prof	MPMC	17	42	5	0	64	64	8.22	
3	Mrs.S.Malathi	Asst.Prof	MWE	31	28	5	0	64	64	8.66	
4	Mr.P.Sudhakar	Asst.Prof	DSP	14	34	14	2	64	64	7.31	
5	Mr.Ch.V.Bhikshapathi	Asst.Prof	OOPS	36	27	1	0	64	64	9.06	
6	Mrs. A.V.Lakshmi	Asst.Prof	IPR	48	15	1	0	64	64	9.44	

10% Overall Index Scale: A = 10, B = 8, C = 4, D = 0

Subjects

VLSI	VLSI Design
MPMC	Microprocessors & Micro Controllers
MWE	Microwave Engineering
DSP	Digital Signal Processing
OOPS	Object Oriented Programming through C++
IPR	Intellectual Patent Rights

  
Principal

**Figure B.2.2.1.s:** Sample Consolidated Feedback Analysis Form

### Impact analysis

- The faculty will improve their presentation skills in the content delivery through orientation classes.
- The continuous improvement of substandard feedback in teaching by the faculty helps the student to have good academic record.

The Table B 2.2.1.o below shows the impact analysis of orientation classes conducted to the faculty with less feedback and the improvement in feedback through orientation class.

Sl. No	Faculty identified to improve teaching through student feedback	Name of the Subject	Year-Sem	Date of orientation class conducted	Number of times orientation class conducted	Improve ment in feedback (10 Point Scale)
1	Mrs. B. V. R. Gowri	RVSP	II-I	25-04-2019	01	7.90
		AC	II-II	23-09-2019	01	8.14
2	Mr. K. V. Ramana Rao	DSD/ DICA	III-II	08-09-2017	02	7.38
		RS	IV-I	08-07-2019	01	8.30
3	Mrs. B. Manjula	DC	III-I	09-07-2019	01	7.52
4	Mr. K. Rajendra Prasad	DIP	IV-I	08-07-2019	02	8.34
5	Mr. Ch. Ramesh Babu	DIP	IV-I	08-09-2017	02	7.74
6	Mr. Shaik Peer Ahmed	DC	III-I	31-10-2018	01	9.17
7	Mr. G. Lakshmana	AWP	III-I	08-09-2017	01	7.32
		CS	II-II	31-10-2018	01	8.02
8	Mr. K. Sridhar	EDC	II-I	05-07-2017	01	9.12
9	Ms. Dhanya M. Ravi	DLD	II-I	21-08-2017	01	8.68
10	Mr. B. Sai Bharadwaj	OC	IV-I	08-09-2017	01	8.60

**Table B.2.2.1.n: Impact analysis on orientation classes**

The list of faculty to whom the subject is changed in the last three academic years due to less feedback is given below in Table: B.2.2.1.p.

Sl. No.	Academic Year	Year/Section/Semester	Course Name	Name of the old faculty	Name of the new faculty
1	2019-20	IV ECE-C	EMI	Mr. M. Ravindra Kumar	Mrs. B. Manjula
2	2018-19	III ECE-B	DICA	Mrs. P. Kamala	Mr. S. Tarun Prasad
3	2017-18	II ECE-A	EDC	Mrs. K. Lakshmi	Mr. P. Gopi Krishna
4		II ECE-B	STLD	Mr. Shaik Peer Ahmed	Mr. D. Tilak Raju

**Table B.2.2.1.o: List of faculty whose course is changed due to poor feedback**

### **2.2.2 Quality of internal semester Question papers, Assignments and Evaluation (20)**

*(Mention the initiatives, implementation details and analysis of learning levels related to quality of semester question papers, assignments and evaluation)*

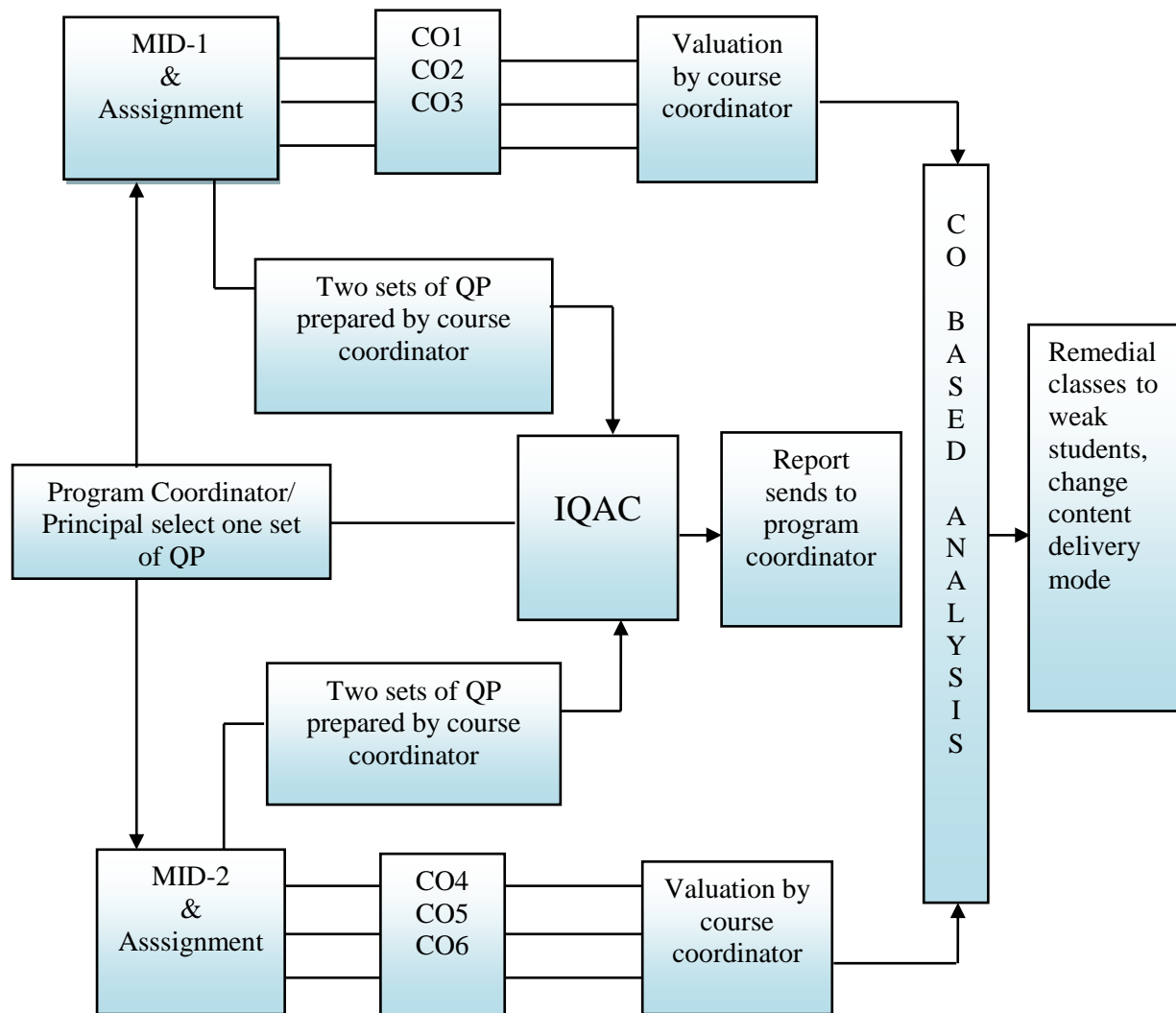
The department ensures that the students are assessed correctly by maintaining the quality in preparing the internal exam question papers and assignments for the courses taught in a semester. The faculty maintains good teacher-student relationship by effective, transparent and ethical assessment methodology. The questions for internal examinations are given from the syllabus covered in the class. The assignment questions are framed to test the creative and critical thinking of the student. The faculty maintains transparency in evaluation and avoids unfair, harsh and inappropriate grading. The questions are framed as per the Bloom's Taxonomy knowledge level of mapping to Course Outcomes.

#### **A. Process for internal semester question paper setting, evaluation and effective process implementation (5)**

- The department ensures that the faculty completes the syllabus required to conduct exam by taking the course completion survey report by the Class Review Committee twice in a semester.
- The question paper is set as per the guidelines provided by the university curriculum giving equal weightage to all the units in the course.
- Two sets of question paper will be prepared by the faculty for every mid term examination. The question paper contains questions from the syllabus with COs coverage and the level of difficulty as per the revised Bloom's Taxonomy. Scheme of evaluation will be prepared by the corresponding faculty.
- The quality of the question paper is evaluated by the members of IQAC and sends a report to the program coordinator for improvement if required.
- One set will be selected by the program coordinator in presence of the Principal one hour before on the day of exam.
- Papers are evaluated by the course coordinator as per the scheme and the scripts were shown to students to maintain transparency. The students are given a chance to ask doubts regarding

the evaluation procedure or marks allotted. The doubts are clarified by the course coordinator and the assessment is done.

- Marks will be displayed in the notice boards for students. Academically poor students will be identified and we organize remedial classes for such students to improve their learning ability through tests, assignments etc.



**Figure B.2.2.2.a: Process for internal examination evaluation & assessment**

A sample Mid-I question paper is given below



## VIGNAN'S INSTITUTE OF ENGINEERING FOR WOMEN

(Kapujaggarajupeta, Duvvada, Visakhapatnam-530 049)

### Mid Term Examination-I (II- B.Tech I Sem, Regulations: R16)

SET-1

Course Name: Signals & Systems.

Max Time: 1 ½ Hrs.

Branch: Electronics & Communication Engineering

Max Marks: 15

Faculty: T. Sandhya Kumari/Ch. Anitha Bhavani

Date: 09-08-2019

CO: Course Outcome no. (1-6), LEVEL: Revised Bloom's Taxonomy level no. (1-6)

3x5=15 M

CO	LEVEL	Q.No	QUESTION
CO 1	1a: K2 1b: K2	01	<p>(a) Identify whether the given signal is an Energy or Power signal:  <math>x(t) = 8 \cos(4t) \cos(6t)</math>. [2.5M]</p> <p>(b) Show that <math>\cos(m\omega_0 t)</math> and <math>\sin(n\omega_0 t)</math> are orthogonal over any interval <math>(t_0, t_0 + 2\pi/\omega_0)</math> for integers value of m, n [2.5M]</p>
CO 2	2a: K3 2b: K4	02	<p>(a) Examine the Exponential Fourier series representation for the periodic signal <math>x(t)</math> shown in figure [3M]</p> <div style="text-align: center;"> <p>The graph shows a periodic square wave signal <math>x(t)</math> on a coordinate system with time <math>t</math> on the horizontal axis and amplitude <math>x(t)</math> on the vertical axis. The signal has a period <math>T_0</math> and a duty cycle of 50%. It is high at amplitude <math>A</math> for the first half of each period and low at amplitude <math>-A</math> for the second half. The origin <math>0</math> is marked, and the half-period <math>T_0/2</math> is also indicated.</p> </div> <p>(b) Write Time Convolution property and Frequency Shifting properties of Fourier transform and prove. [2M]</p>
CO 3	3a: K3 3b: K3	03	<p>(a) Show that the original signal is perfectly reconstructed at <math>f_s = 2f_m</math> for ideal or impulse sampling. [3M]</p> <p>(b) Sketch the discrete time signals obtained after sampling the given signal <math>x(t) = 8 \cos(200\pi t)</math> with sampling frequencies 400 Hz &amp; 150 Hz respectively. [2M]</p>

\* K1 (R): Remembering, K2 (U): Understanding, K3 (P): Applying,

\* K4 (A): Analyzing, K5 (E): Evaluating, K6 (C): Creating.

COURSE CODE: R1621043

Figure B.2.2.2.b: Sample Question Paper



## VIGNAN'S INSTITUTE OF ENGINEERING FOR WOMEN

(Kapujaggarajupeta, Duvvada, Visakhapatnam-530 049)

### Mid Term Examination-I

(II B.Tech I Sem, Regulations: R16)

SET-1

**Course Name:** Signals & Systems

**Max Time:** 1 ½ Hrs.

**Branch:** Electronics & Communication Engineering

**Max Marks:** 15

**Faculty:** T. Sandhya Kumari/Ch. Anitha Bhavani

**Date:** 09-08-2019

### Scheme of Evaluation

1. (a)  $E = \int_{-\infty}^{\infty} x^2(t) dt$   
 $P = \lim_{T \rightarrow \infty} \frac{1}{T} \int_{-T}^T x^2(t) dt \quad \dots\dots (0.5M)$   
 Energy & Power calculation ..... (1M)  
 $E = \infty, P = 16W \quad \dots\dots\dots (1M)$
- (b)  $\int_{t_1}^{t_2} f_1(t) f_2(t) dt = 0 \quad \dots\dots\dots (0.5M)$   
 Proof for orthogonality ..... (2M)
2. (a) Exponential Fourier series expression ..... (0.5M)  
 $F_n$  coefficient calculation ..... (1.5M)  
 $f(t) = \sum_{n=-\infty}^{\infty} \frac{j}{n\pi} [(-1)^n - 1] e^{jn\omega_0 t} \quad \dots\dots\dots (1M)$
- (b)  $x(t) * y(t) \xrightarrow{\text{fourier transform}} X(\omega)Y(\omega) \quad \dots\dots\dots (0.5M)$   
 Proof for time convolution property..... (0.5M)  
 $e^{j\omega_0 t} x(t) \xrightarrow{\text{fourier transform}} X(\omega - \omega_0) \quad \dots\dots\dots (0.5M)$   
 Proof for frequency shifting ..... (0.5M)
3. (a) Sampling Theorem Statement ..... (0.5M)  
 Time domain representation ..... (0.5M)  
 Frequency domain representation..... (1M)  
 Reconstruction..... (1M)
- (b) Sketch for  $F_s = 400\text{Hz}$  ..... (1M)  
 Sketch for  $F_s = 150\text{Hz}$  ..... (1M)

**Figure B.2.2.2.c: Sample Scheme of Evaluation**

**B. Process to ensure questions from outcomes/learning levels perspective (5)**

- The department ensures that the faculties strictly follow the learning levels while preparing the question paper for internal examination.
- The course coordinator defines the Course Outcomes for the allotted course and maps the COs to POs.
- The COs are written considering the contents in the syllabus and the ability of the student to learn after successful completion of the course. The verb used to describe the CO specifies the Bloom's Taxonomy level of understanding.
- The course coordinator while preparing the questions for internal examination ensures that the questions framed are also mapped to the same level as defined by COs and is clearly indicated in the question paper.

A sample copy of question with their knowledge levels along with the COs for the subject Signals & Systems is shown below:

Course Code: **C205**      Course Name: **Signals & Systems**      Regulation: **R16**

**Course Outcomes:**

**CO1:** Describe the characteristics of various signals using orthogonal basis and vector space.

**CO2:** Select Fourier series and Fourier Transform to analyze periodic and aperiodic signals.

**CO3:** Choose the sampling frequency to reconstruct the sampled signal without aliasing effect.

**CO4:** Explain the response characteristics of linear systems using correlation and convolution functions.

**CO5:** Demonstrate the region of convergence with Laplace Transforms to various classes of signals.

**CO6:** Examine the region of convergence with Z- Transforms to a discrete sequence.

CO	Action Verb Used	Revised Blooms Taxonomy Level
1	Describe	Understand (K2)
2	Select	Analyze (K4)
3	Choose	Apply (K3)
4	Explain	Understand (K2)
5	Demonstrate	Apply (K3)
6	Examine	Apply (K3)

**Figure B.2.2.2.d:** Sample Course COs and Learning levels





**VIGNAN'S INSTITUTE OF ENGINEERING FOR WOMEN**

(Kapujaggarajupeta, Duvvada, Visakhapatnam-530 049)

**Mid Term Examination-I**  
(II- B.Tech I Sem, Regulations: R16)

**SET-1**

**Course Name:** Signals & Systems.  
**Branch:** Electronics & Communication Engineering  
**Faculty:** T. Sandhya Kumari/Ch. Anitha Bhavani

**Max Time:** 1 ½ Hrs.  
**Max Marks:** 15  
**Date:** 09-08-2019

**CO: Course Outcome no. (1-6), LEVEL: Revised Bloom's Taxonomy level no. (1-6) 3x5=15 M**

CO	LEVEL	Q.No	QUESTION
CO 1	1a: K2 1b: K2	01	(a) Identify whether the given signal is an Energy or Power signal: $x(t) = 8 \cos(4t) \cos(6t)$ . [2.5M] (b) Show that $\cos(n\omega_0t)$ and $\sin(m\omega_0t)$ are orthogonal over any interval $(t_0, t_0+2\pi/\omega_0)$ for integers value of m, n [2.5M]
CO 2	2a: K3 2b: K4	02	(a) Examine the Exponential Fourier series representation for the periodic signal $x(t)$ shown in figure [3M] <div style="text-align: center;"> <p>The graph shows a periodic square wave signal <math>x(t)</math> on a coordinate system with time <math>t</math> on the horizontal axis and signal amplitude <math>X(t)</math> on the vertical axis. The signal has a period <math>T_0</math> and a duty cycle of 50%. It is high at amplitude <math>A</math> for the first half of each period and low at amplitude <math>-A</math> for the second half. The origin <math>0</math> is marked, and the midpoint of the period is <math>T_0/2</math>.</p> </div> (b) Write Time Convolution property and Frequency Shifting properties of Fourier transform and prove. [2M]
CO 3	3a: K3 3b: K3	03	(a) Show that the original signal is perfectly reconstructed at $f_s=2f_m$ for ideal or impulse sampling. [3M] (b) Sketch the discrete time signals obtained after sampling the given signal $x(t)=8 \cos(200\pi t)$ with sampling frequencies 400 Hz & 150 Hz respectively. [2M]

\* K1 (R): Remembering, K2 (U): Understanding, K3 (P): Applying,  
\* K4 (A): Analyzing, K5 (E): Evaluating, K6 (C): Creating.

**COURSE CODE:** R1621043

**Figure B.2.2.2.e: Sample question paper to assess the learning levels**

**Justification of questions from outcomes/learning levels perspective**

Question	Action Verb Used	Revised Bloom's Taxonomy Level
1a	Identify	Understand (K2)
1b	Show	Understand (K2)
2a	Examine	Analyze (K4)
2b	Write	Apply (K3)
3a	Show	Apply (K3)
3b	Sketch	Apply (K3)

**Table 2.2.2.a: Mapping of question paper verbs to Bloom's Taxonomy level**

### C. Evidence of COs coverage in class test/mid-term tests (5)

The department strictly ensures that the class test/mid-term examinations are conducted as per the defined COs. The sample copy of mid term examinations for a course is shown below and the coverage of COs in the exam is illustrated.



**VIGNAN'S INSTITUTE OF ENGINEERING FOR WOMEN**

(Kapujaggarajupeta, Duvvada, Visakhapatnam-530 049)

**Mid Term Examination-I**

(II- B.Tech I Sem, Regulations: R16)

SET-1

**Course Name:** Signals & Systems.

**Max Time:** 1 ½ Hrs.

**Branch:** Electronics & Communication Engineering

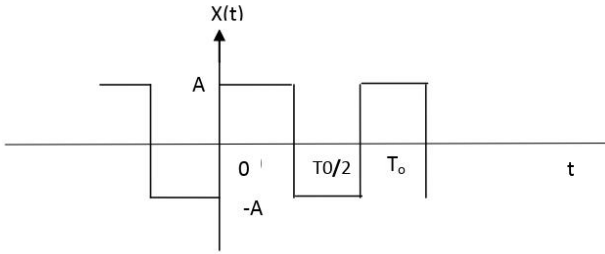
**Max Marks:** 15

**Faculty:** T. Sandhya Kumari/Ch. Anitha Bhavani

**Date:** 09-08-2019

**CO: Course Outcome no. (1-6), LEVEL: Revised Bloom's Taxonomy level no. (1-6)**

**3x5=15 M**

CO	LEVEL	Q.No	QUESTION
CO 1	1a: K2 1b: K2	01	(a) Identify whether the given signal is an Energy or Power signal: $x(t) = 8 \cos(4t) \cos(6t)$ . [2.5M] (b) Show that $\cos(n\omega_0 t)$ and $\sin(m\omega_0 t)$ are orthogonal over any interval $(t_0, t_0 + 2\pi/\omega_0)$ for integers value of m, n [2.5M]
CO 2	2a: K3 2b: K4	02	(a) Examine the Exponential Fourier series representation for the periodic signal $x(t)$ shown in figure [3M]  (b) Write Time Convolution property and Frequency Shifting properties of Fourier transform and prove. [2M]
CO 3	3a: K3 3b: K3	03	(a) Show that the original signal is perfectly reconstructed at $f_s = 2f_m$ for ideal or impulse sampling. [3M] (b) Sketch the discrete time signals obtained after sampling the given signal $x(t) = 8 \cos(200\pi t)$ with sampling frequencies 400 Hz & 150 Hz respectively. [2M]

\* K1 (R): Remembering, K2 (U): Understanding, K3 (P): Applying,  
\* K4 (A): Analyzing, K5 (E): Evaluating, K6 (C): Creating.

COURSE CODE: R1621043

**Figure B.2.2.2.f: Sample Mid-1 question paper for a course**

**Evidence of COs coverage in Mid-I term test:**

CO No.	Action Verbs Used	Revised Bloom's Taxonomy Level	Question Verbs	Revised Bloom's Taxonomy Level
1	Describe	Understand(K2)	Identify	Understand (K2)
			Show	Understand (K2)
2	Select	Analyze (K4)	Examine	Analyze (K4)
			Write	Apply (K3)
3	Choose	Apply (K3)	Show	Apply (K3)
			Sketch	Apply (K3)

**Table B.2.2.2.b: Sample Course CO & Question paper to Learning levels mapping for Mid-1**



**VIGNAN'S INSTITUTE OF ENGINEERING FOR WOMEN**

(Kapujaggarajupeta, Duvvada, Visakhapatnam-530 049)

**Mid Term Examination-II**  
(II- B.Tech I Sem, Regulations: R16)

**SET-1**

**Course Name:** Signals & Systems.

**Max Time:** 1 ½ Hrs.

**Branch:** Electronics & Communication Engineering

**Max Marks:** 15

**Faculty:** T. Sandhya Kumari/Ch. Anitha Bhavani

**Date:** 16 -10-2019

**CO: Course Outcome no. (1-6), LEVEL: Revised Bloom's Taxonomy level no. (1-6)**

Answer ALL Questions

**3x5=15 M**

CO	LEVEL	Q.No	QUESTION
CO 4	1a: K2 1b: K2	01	(a) Identify whether the following systems are linear, causal and Time Invariant or not? (i) $y[n]=a x[n]+b$ (ii) $y[n]=x[n-n_0]$ [2M] (b) Show the mathematical relation between rise time and bandwidth. [3M]
			CO 5
CO 6	3a: K3 3b: K3	03	(a) Evaluate the Z-Transform of the following: [2M] $x[n]=(0.8)^n u[n]+(0.6)^n u[-(n+1)]$ (b) Solve the Inverse Z-Transform of the following: [3M] $X(Z) = \frac{z}{(z-1)(z-2)(z-3)}$ ; (i) $ Z  > 3$ (ii) $ z  < 2$

\* K1 (R): Remembering, K2 (U): Understanding, K3 (P): Applying,

\* K4 (A): Analyzing, K5 (E): Evaluating, K6 (C): Creating.

**COURSE CODE:** R1621043

**Figure B.2.2.2.g: Sample Mid-2 question paper for a course**

**Evidence of COs coverage in Mid-I term test:**

CO No.	Action Verbs Used	Revised Bloom's Taxonomy Level	Question Verbs	Revised Bloom's Taxonomy Level
4	Explain	Understand(K2)	Identify	Understand (K2)
			Show	Understand (K2)
5	Demonstrate	Apply (K3)	Compute	Apply (K3)
			Calculate	Apply (K3)
6	Examine	Apply (K3)	Evaluate	Apply (K3)
			Solve	Apply (K3)

**Table B.2.2.2c: Sample Course CO & Question paper to Learning levels mapping for Mid-2****D. Quality of Assignment and its relevance to CO (5)**

The assignments to the students were given related to social consciousness, improve creativity and conceptual knowledge.

- The assignments are evaluated internally by the course coordinator handling the course.
- The questions are prepared to improve the problem solving skills of the student.
- In a semester, the assignment is given after the completion of every unit covering the syllabus of that particular unit and in line with the defined COs.
- Assignments are evaluated by the course coordinator after the due submission date and marks will be posted in attendance register.
- The sample assignment questions framed after covering the unit and their relevance to CO is shown below:



## Vignan's Institute of Engineering for Women:: Visakhapatnam

(Kapu Jaggaraju Peta, Vadlapudi, Gajuwaka, Visakhapatnam-530046. A.P.)

Department of ECE

### Assignment-I

#### Problems on Introduction to Signals

**Date of Issue:** 04-07-2019

**Date of Submission:** 08-07-2019

1. (a) Identify whether the following signals are Energy/Power Signals:

(i)  $x(t) = e^{-2t} u(t)$  (energy)      (ii)  $x(t) = A \sin(\omega_0 t + \theta)$  (power)

- (b) Observe whether the following signals are periodic/Non-periodic signals. If periodic, determine the fundamental time period of the signal:

(i)  $x(t) = e^{at}$  (aperiodic)      (ii)  $x(t) = \cos^2(2t - \pi/3)$  (periodic)

- (c) A rectangular function is defined as:

$$x(t) = \begin{cases} A; & 0 < t < \frac{\pi}{2} \\ -A; & \frac{\pi}{2} < t < \frac{3\pi}{2} \\ A; & \frac{3\pi}{2} < t < 2\pi \end{cases}$$

Estimate the above function by  $A \cos t$  between the intervals 0 to  $2\pi$  such that mean square error is minimum.

CO1	Action verb used	Assignments verbs	Revised Blooms taxonomy level
Describe the characteristics of various signals using orthogonal basis and vector space	Describe	Identify Observe Estimate	Understand(K2)

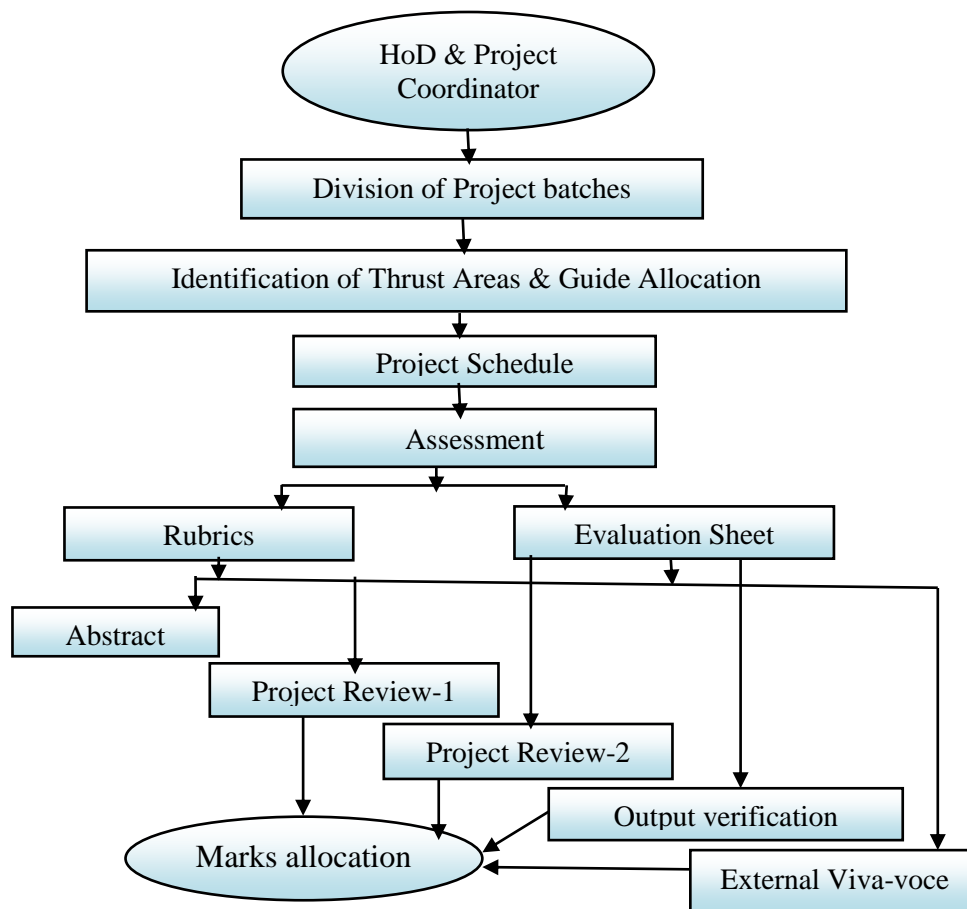
**Figure B.2.2.2.h: Sample Assignment for a Course**

### 2.2.3. Quality of Student Projects (25)

*(Quality of the project is measured in terms of consideration to factors including, but not limited to limited to, environment, safety, ethics, cost, type (application, product, research, review etc.) and standards. Processes related to project identification, allotment, continuous monitoring, evaluation including demonstration of working prototypes and enhancing the relevance of projects. Mention Implementation details including details of POs and PSOs addressed through the projects with justification)*

To ensure the quality in the projects implemented by the students in the department, procedural steps are implemented that includes planning, scheduling and implementation related to the completion of project. The Figure B. 2.2.3.a describes the entire process that is being followed by the program for the successful implementation of the project. The project coordinator in

discussion with the program coordinator prepares a project schedule and frames project batches. The students select respective fields of interest in the program and accordingly the guides are allocated. The program conducts Abstract review is conducted to identify the selected field and provide necessary suggestions. As per the schedule, two internal reviews assessing the students' individual and team performance is conducted. Final review is conducted as per the date scheduled by the university. The project assessment is made purely based on the rubrics pre-defined.



**Figure B.2.2.3.a: Process for Student Project**

Students work on projects resourcefully by the facilities provided by the department and institute. Software tools such as Mentor Graphics, Xilinx, MATLAB, HFSS etc., and Hardware boards along with the essential hardware sensors are made available in the project lab to support student project implementation. Students are provided with a facility to access e-journals, e-books, around 15 national and international journals related to the program in the digital library to carry out the literature survey. High speed Internet, NPTEL videos in the digital library are made available to students to learn the concepts related to implement their project work.

### A. Identification of projects and allocation methodology to faculty members (3)

Project batches are formed in the III year to carry out mini/major projects. The projects are carried out in and allied areas of ECE covering VLSI, Embedded systems, Signal & Image Processing, Antenna Design, Machine Learning and IoT. One senior faculty member will be appointed as a project coordinator and prepares project schedule in discussion with Head of the Department. The schedule is prepared in line with the university calendar. The project work carried by the students reflects the individual and collective work done as a team. The department takes appropriate steps in forming the batches and allocation of guides to the respective teams.

#### Batch Formation

The students are formed as batches with maximum of 4 members based on the performance of the students in their internal and external examination till the date of batch formation. The list of teams will be displayed in department notice boards for student verification and corrections. All the active learners who score maximum in a class are appointed as batch leaders followed by successive scores attained by the students. The batches are well balanced as per their academic performance and are transparent to students. The sample batch formation is shown in Table B.

#### 2.2.3.a

Batch No.	Regd. Number	Name of the student	% Scored
C1	16NM1A04C6	Rapaka Ramyasri	81.1
	16NM1A04G0	Vepada Harika	72.3
	16NM1A04D5	Siyadri Navya Sudha	67.7
	16NM1A04E9	Vadlamani Naga Sai Sandeepthy	63.4
	16NM1A04G6	Sesetty Uma Maheswari	62.6
C2	16NM1A04D4	Senapathi Hemanth Sandhya	80.4
	17NM5A0415	Illapu Dhana Lakshmi	71.9
	16NM1A04G4	Gonnabathulla Damini Priya	67.7
	17NM5A0431	Veerlapati Tanuja	63.1
	14NM1A0481	Pathivada Sai Priyanka	50.2
C3	16NM1A04D8	Sushmita Mondal	79.5
	17NM5A0426	Sarvasiddi Ramya	71.9
	16NM1A04F7	Vegesna Pujitha	67.3
	16NM1A04E2	Telakarapu Jayasri	60.7
C4	16NM1A04E4	Thamma Sai Harshitha	79.5
	16NM1A04D2	Sanivada Chandana Priyanka	71.3
	16NM1A04E3	Thadi Sunitha	67.1
	17NM5A0428	Sikha Hemasree	60.7

C5	16NM1A04D7	Sravani Kumari Savithini	78.5
	15NM1A0477	Moka Sai Lakshmi	71.3
	16NM1A04F3	Vasamsetti Haritha	66.6
	16NM1A04C8	Rompalli Keerthi	60.6
C6	16NM1A04E0	Talapureddy Ponny	77.8
	16NM1A04F0	Vankayala Mounika	71.1
	17NM5A0414	Gudivada Srisailalitha	66.2
	16NM1A04F1	Vanumu Navya Priya Harini	60.0
C7	16NM1A04C7	Reddi Divya Sai	76.9
	16NM1A04F8	Vegi Hema	71.1
	16NM1A04D9	Swamy Vasupradha	66.1
	17NM5A0420	Malla Adi Lakshmi	59.9
C8	16NM1A04F2	Varahagiri Joshana Rajeswari	76.4
	17NM5A0416	Kambala Santhi Priya	70.3
	17NM5A0427	Shaik Firdos	66.0
	17NM5A0429	Syed Nayeema Kousar	59.7
C9	17NM5A0432	Voleti Amal Prathyusha	76.2
	16NM1A04C4	Rama Harika Dubasi	69.9
	16NM1A04G3	Vooda Sai Sowjanya	65.4
	17NM5A0422	Pappu Kusumakumari	58.8
C10	16NM1A04D1	Sanapathi Sirisha	76.1
	16NM1A04F5	Vasupilli Manju	69.8
	16NM1A04C9	Rongali Sai Poojitha	64.8
	17NM5A0418	Karusodhi Sailaja	58.7
C11	16NM1A04D6	Somala Maha Lakshmi	76.0
	17NM5A0417	Karanam Sravani	69.7
	16NM1A04E5	Thoota Keerthana	64.8
	17NM5A0419	Kolli Vakula Devi	58.2
C12	16NM1A04D3	Saragada Daisy Angel	75.9
	16NM1A04E8	Tippala Vasudha Reddy	69.2
	16NM1A04F4	Vasamsetti Sindhuja	64.6
	16NM1A04C5	Rambhatla Chinmayi	57.5
C13	16NM1A04E7	Thumpala Jyothsna Prasanthi	73.7
	16NM1A04E1	Tatisetty Alekhya	69.0
	17NM5A0423	Perla Rajeswari	64.5
	16NM1A04F6	Vechalapu Roshini	57.3
C14	17NM5A0421	Miriappalli Lavanya	73.7
	16NM1A04G2	Vinakota Varnika	68.6
	16NM1A04C2	Pulaka Sailaja	64.4
C15	17NM5A0424	Ponnana Lalitha	73.7
	16NM1A04E6	Thota Sirisha	68.5
	16NM1A04C3	Raja Vigna Vigneshwari	63.7



	17NM5A0430	Tumpala Lavanya	53.3
C16	16NM1A04F9	Vennala Poornima	72.6
	16NM1A04C1	Pratti Rishita Jaya	68.1
	16NM1A04D0	Roopashree Pampanaboyina	63.6
	16NM1A04G5	Sridevi Priyadarshini Kolli	50.5

**Table 2.2.3.a: Project batch formation**

### Guide Allocation

The students after team formation were asked to refer the displayed guides list with their specialization enclosed. The students are advised to select their field of interest, flexibility in working with the software/hardware tools and the available sources in the department to implement their project. They are advised to submit one page abstract of their work proposal. The project coordinator scrutinizes the abstracts submitted and advises the batch to approach the corresponding faculty for acceptance as guide. However, the project coordinator of the department assists the students in selecting the field and guide in order to avoid overflow and ambiguity. The finalization of the project teams and guides is done by the Head of the Department in consultation with the project coordinator and is displayed in department notice board for students' reference. The sample guide allocation sheet is shown in Table B 2.2.3.b.

### VIGNAN'S INSTITUTE OF ENGINEERING FOR WOMEN :: VISAKHAPATNAM

Department of ECE

#### Project Batch Allotment of 2016 Admitted Students

Class: IV ECE-C

Batch No	Reg Number	Name of the student	Name of the Guide
C1	16NM1A04C6	Rapaka Ramyasri	Mr. P. Sudhakar
	16NM1A04G0	Vepada Harika	
	16NM1A04D5	Siyadri Navya Sudha	
	16NM1A04E9	Vadlamani Naga Sai Sandeepthy	
	16NM1A04G6	Sesetty Uma Maheswari	
C2	16NM1A04D4	Senapathi Hemanth Sandhya	Mr. B. Sai Bharadwaj
	17NM5A0415	Illapu Dhana Lakshmi	
	16NM1A04G4	Gonnabathulla Damini Priya	
	17NM5A0431	Veerlapati Tanuja	
	14NM1A0481	Pathivada Sai Priyanka	
C3	16NM1A04D8	Sushmita Mondal	Mrs. T. Sandhya Kumari
	17NM5A0426	Sarvasiddi Ramya	

	16NM1A04F7	Vegesna Pujitha	
	16NM1A04E2	Telakarapu Jayasri	
C4	16NM1A04E4	Thamma Sai Harshitha	Mrs. S. Malathi
	16NM1A04D2	Sanivada Chandana Priyanka	
	16NM1A04E3	Thadi Sunitha	
	17NM5A0428	Sikha Hemasree	
C5	16NM1A04D7	Sravani Kumari Savithini	Mr.D.Tilak Raju
	15NM1A0477	Moka Sai Lakshmi	
	16NM1A04F3	Vasamsetti Haritha	
	16NM1A04C8	Rompalli Keerthi	
C6	16NM1A04E0	Talapureddy Ponny	Dr. K.V. Ramana Rao
	16NM1A04F0	Vankayala Mounika	
	17NM5A0414	Gudivada Srisailalitha	
	16NM1A04F1	Vanumu Navya Priya Harini	
C7	16NM1A04C7	Reddi Divya Sai	Mr.P.Gopi Krishna
	16NM1A04F8	Vegi Hema	
	16NM1A04D9	Swamy Vasupradha	
	17NM5A0420	Malla Adi Lakshmi	
C8	16NM1A04F2	Varahagiri Joshana Rajeswari	Mr.B.Sasi Kanth
	17NM5A0416	Kambala Santhi Priya	
	17NM5A0427	Shaik Firdos	
	17NM5A0429	Syed Nayeema Kousar	
C9	17NM5A0432	Voleti Amal Prathyusha	Mr.D.A. Tatajee
	16NM1A04C4	Rama Harika Dubasi	
	16NM1A04G3	Vooda Sai Sowjanya	
	17NM5A0422	Pappu Kusumakumari	
C10	16NM1A04D1	Sanapathi Sirisha	Mrs. Ch. Padma Vani
	16NM1A04F5	Vasupilli Manju	
	16NM1A04C9	Rongali Sai Poojitha	
	17NM5A0418	Karusodhi Sailaja	
C11	16NM1A04D6	Somala Maha Lakshmi	Mrs. S. Malathi
	17NM5A0417	Karanam Sravani	
	16NM1A04E5	Thoota Keerthana	
	17NM5A0419	Kolli Vakula Devi	
C12	16NM1A04D3	Saragada Daisy Angel	Mrs. B. Manjula
	16NM1A04E8	Tippala Vasudha Reddy	
	16NM1A04F4	Vasamsetti Sindhuja	
	16NM1A04C5	Rambhatla Chinmayi	
C13	16NM1A04E7	Thumpala Jyothsna Prasanthi	Mr. Ch. Ramesh Babu

	16NM1A04E1	Tatisetty Alekhya	
	17NM5A0423	Perla Rajeswari	
	16NM1A04F6	Vechalapu Roshini	
C14	17NM5A0421	Miriappalli Lavanya	Mrs. Ch. Anitha Bhavani
	16NM1A04G2	Vinakota Varnika	
	16NM1A04C2	Pulaka Sailaja	
C15	17NM5A0424	Ponnana Lalitha	Mr.P.Sudhakar
	16NM1A04E6	Thota Sirisha	
	16NM1A04C3	Raja Vigna Vigneshwari	
	17NM5A0430	Tumpala Lavanya	
C16	16NM1A04F9	Vennala Poornima	Mr. K. Rajendra Prasad
	16NM1A04C1	Pratti Rishita Jaya	
	16NM1A04D0	Roopashree Pampanaboyina	
	16NM1A04G5	Sridevi Priyadarshini Kolli	

Signature of the Project Coordinator

Signature of the H.O.D

**Table B. 2.2.3.b: Guide allocation sheet****B. Types & relevance of the projects and their contributions towards attainment of POs and PSOs (5)**

The projects implemented by the students are usually involved the design, synthesis and analysis of contemporary issues related to society. The projects completed by the students are implementation of solutions to real time problems considering the factors such as environment, safety, and ethics etc. For successful completion of the student academic project, they are expected to:

- Analyze and formulate a solution to VLSI, Image & Signal Processing, Communication and Embedded system based project.
- Test and validate the results for the project task using modern tools.
- Manage to enhance critical thinking skills in a team.
- Publish the implemented work in reputed journals or conferences.
- Prepare a document in the standard format that describes the implemented work with results obtained and future directions.

The student projects are implemented in line with the department Vision, Mission and Program Outcomes. The project objectives and outcomes are defined and CO-PO mapping is done by the

project coordinator in consultation with the program coordinator. The PO and PSO attainments are calculated after the successful completion of the project.

### Project Course Outcomes:

**CO1:** Formulate and apply mathematical, science and engineering principles to solve real time engineering problems.

**CO2:** Test the existing data, communicate and conduct research on complex problems using modern tools.

**CO3:** Validate the obtained results on contemporary issues related to society and environment.

**CO4:** Demonstrate effectively the engineering principles used in their project individually and as a team as per the norms of engineering practice.

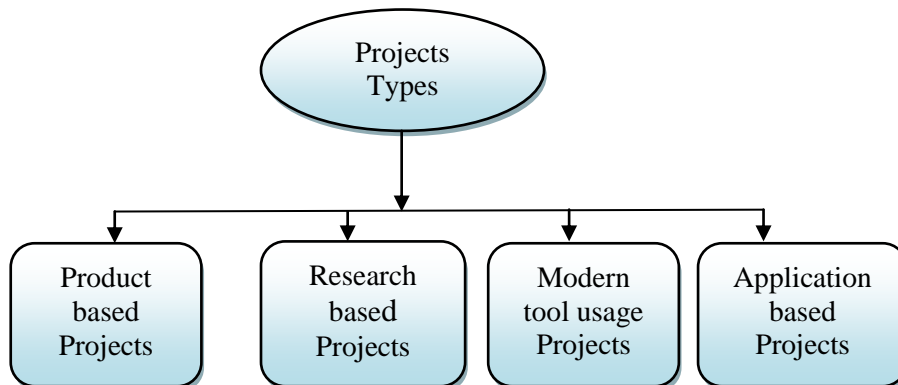
**CO5:** Structure future work to promote life-long learning in the context of technological adaptation.

### CO-PO Mapping:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
<b>CO1</b>	3	3	3	2	2	-	-	-	-	-	-	-
<b>CO2</b>	-	-	3	3	3	2	1	3	-	3	-	-
<b>CO3</b>	-	-	2	2	2	3	3	3	-	-	-	-
<b>CO4</b>	-	-	-	-	-	1	1	3	3	3	3	-
<b>CO5</b>	-	-	-	-	2	2	1	-	-	-	3	3

**Table B.2.2.3.c: CO-PO Mapping of Project Course**

The projects implemented by the students are categorized as product based, research based, application based and modern tool usage based projects. The categorized projects are mapped to the Program Outcomes to verify the relevance in the attainment of POs.



**Figure B.2.2.3.b: Project Categories/ Types**

The following Table B.2.2.3.d shows the mapping of categorized projects to POs and PSOs where the product based and modern tool usage based projects are strongly mapped to

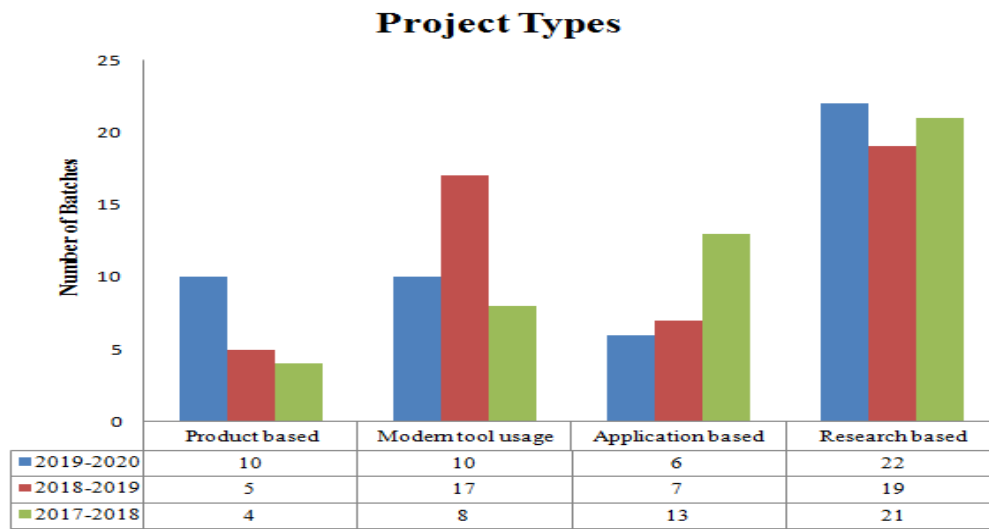
knowledge based POs and PSO1 that exploits the concepts of VLSI and embedded systems for implementation of real time applications. The application and research based projects are strongly mapped to PSO2 that deals with applying advanced algorithms in signal processing, image processing & communication system to solve complex problems. However, the categorized projects are moderately mapped to skill and value based POs. The project carried out under various project categories by the students in the last three academic years is shown in Table B.2.2.3.e and the corresponding plot is shown in Figure B.2.2.3.c

Projects Types	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
Product based	3	2	3	3	2	3	3	3	3	2	2	3	3	2
Modern tool usage	3	3	3	3	3	2	1	2	3	2	1	3	3	2
Application based	3	3	3	3	3	2	2	2	3	2	1	3	2	3
Research based	3	3	2	3	3	2	2	2	3	2	1	3	2	3

**Table B.2.2.3.d: Mapping of Categorized Projects to POs and PSOs**

Projects Types	Year wise no.of projects carried out		
	CAY (2019-20)	CAYm1 (2018-19)	CAYm2 (2017-18)
Product based	10	5	4
Modern tool usage	10	17	8
Application based	6	7	13
Research based	22	19	21

**Table B.2.2.3.e: Project carried out based on various categories**



**Figure B.2.2.3.c: Project Types in the last three academic years**

The list of projects done by the students in the academic year 2019-20 are categorized into product based, modern tool usage based, application based and research based projects is shown below:

**Product based Projects (2019-20)**

Batch No.	Regd.No.	Name of the Student	Project Title	PO & PSO Coverage
A5	16NM1A0416	Beesetty Joshna	Vehicle Detection System with Emergency Notification Abstract	PO1, PO2, PO5, PO6, PO7, PO8, PO9, PO10, PO12 PSO1
	16NM1A0425	Cherukuru Sowmya		
	16NM1A0458	Jandhyam Chandini		
	16NM1A0420	Budaraju S S S Pradyumna		
A9	16NM1A0417	Bhaddirraju Alekhya	Smart Intrusion Detection System for Home Security	PO1, PO2, PO5, PO6, PO7, PO8, PO9, PO10, PO12 PSO1
	17NM5A0401	Agraharapu Devi		
	16NM1A0450	Gudivada Bhargavi		
	16NM1A0440	Ganta Thanmai		
A12	17NM5A0404	Bodala Sagarika	IoT based water quality monitoring system	PO1, PO2, PO5, PO6, PO7, PO8, PO9, PO10, PO12 PSO1
	16NM1A0405	Amarakota Swathi		
	16NM1A0426	Chippada Divya Lakshmi		
	16NM1A0443	Geesala Rajeswary		
A16	16NM1A0404	Agnihotri Padma Sravya Sri	Cardioxy Health Tracker	PO1, PO2, PO5, PO6, PO7, PO8, PO9, PO10, PO12 PSO1
	16NM1A0436	E Swathi Laxmi Santhoshi Devi		
	16NM1A0431	Devisetti Dedeepya		
	16NM1A0454	G Leela Subha Laxmini		
B4	16NM1A0465	K Roshini Krishna Tulasi	Smart stick for blind with GPS tracking system	PO1, PO2, PO5, PO6, PO7, PO8, PO9, PO10, PO12 PSO1
	16NM1A0480	Konathala Jayasri		
	16NM1A04B7	Pavitra Sahu		
	16NM1A0479	Kona Priyanka		
B11	16NM1A04B0	Netti Priyanka	Automatic LPG Cylinder Booking and Leakage Detection Using Arduino UNO	PO1, PO2, PO5, PO6, PO7, PO8, PO9, PO10, PO12 PSO1
	16NM1A04B4	Palisetty Abhinandini		
	16NM1A0497	Mantrapudi Neelima		
	17NM5A0413	Gosala Gowthamy		
B15	17NM5A0412	Gorli Ramya	Proficient Phonocardiogram Using Internet of Things	PO1, PO2, PO5, PO6, PO7, PO8, PO9, PO10, PO12 PSO1
	16NM1A04A4	M Mounika Vimala Dharshini		
	16NM1A0498	Mantri Deekshitha		
	16NM1A0496	Manjeti Devi		

C1	16NM1A04C6	Rapaka Ramyasri	Real - Time pothole detection and notification system	PO1, PO2, PO5, PO6, PO7, PO8, PO9, PO10, PO12 PSO1
	16NM1A04G0	Vepada Harika		
	16NM1A04D5	Siyadri Navya Sudha		
	16NM1A04E9	Vadlamani Naga Sai Sandeepthy		
	16NM1A04G6	Sesetty Uma Maheswari		
C8	16NM1A04F2	Varahagiri Joshana Rajeswari	IoT Based gas leakage and fire alert system	PO1, PO2, PO5, PO6, PO7, PO8, PO9, PO10, PO12 PSO1
	17NM5A0416	Kambala Santhi Priya		
	17NM5A0427	Shaik Firdos		
	17NM5A0429	Syed Nayeema Kousar		
C13	16NM1A04E7	Thumpala Jyothsna Prasanthi	Design and Development of Vehicle theft and Tracking system	PO1, PO2, PO5, PO6, PO7, PO8, PO9, PO10, PO12 PSO1
	16NM1A04E1	Tatisetty Alekhya		
	17NM5A0423	Perla Rajeswari		
	16NM1A04F6	Vechalapu Roshini		
<b>Research based Projects (2019-20)</b>				
Batch No.	Regd.No.	Name of the Student	Project Title	PO & PSO Coverage
A4	16NM1A0419	Boddapu Priyanka	Face Recognition using Elgen Faces Method	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PO10, PO11, PO12, PSO2
	16NM1A0451	Gudiya Manjari		
	16NM1A0408	Balaka Likhitha		
	16NM1A0423	Chemboli Sakshi		
A6	16NM1A0434	Dwarapureddy Yasodha Rani	The Secure Watermarking of Digital Color Images by Using A Combination of Chaotic Mapping	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PO10, PO11, PO12, PSO2
	16NM1A0453	Gunnu Niharika		
	16NM1A0411	Bandaru Vardhani		
	16NM1A0424	Chennavarapu Mohana Ramya		
A7	16NM1A0441	Gara Srinija	Brain tumor Extraction using image processing	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PO10, PO11, PO12, PSO2
	16NM1A0442	Garikipati Sai Poojitha		
	17NM5A0405	Boddetti Durga Ramani		
	16NM1A0433	Duda Lalitha Reddy		
A10	16NM1A0448	Gorle Tulasi	Polsar Image Classification using context - Based Max-Margin	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PO10, PO11, PO12, PSO2
	16NM1A0410	Balleda Sri Vasavi		
	17NM5A0403	Bandaru Bhargavi		
	16NM1A0459	Kadavala Priyanka		
A11	16NM1A0446	Gollu Jayasri	Implementation of Barker code and linear Frequency Modulation Pulse Compression	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PO10, PO11,
	16NM1A0455	Ippili Yamini		

	17NM5A0402	Aripaka Aswini	Technique	PO12, PSO2
	16NM1A0422	Chapala Shaik Someya		
A13	16NM1A0403	Adireddy V A Prathyusha	"Psi" Shaped Frequency Reconfigurable Microstrip Patch Antenna for 5G Application	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PO10, PO11, PO12, PSO2
	16NM1A0429	Dasari Jayasri		
	16NM1A0412	Banki Naveena		
	16NM1A0402	Adari Lakshmi Madhuri		
A15	16NM1A0418	Boddapati Sai Chandini	Vehicle Detection from satellite Images in Digital Image Processing	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PO10, PO11, PO12, PSO2
	16NM1A0406	Ande Sowjanya		
	16NM1A0452	Gummadi Divya		
	16NM1A0457	Jampana Sai Madhuri		
B1	16NM1A0467	Kandukuri Sushmitha	Detection of S1 AND S2 Heart sound signals using intrinsic time scale decomposition	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PO10, PO11, PO12, PSO2
	16NM1A0488	Lalam Manasa		
	16NM1A04B5	Palisetty Venkata Yamini		
	16NM1A0477	Kolli Kanaka Sowrya Anusha		
	16NM1A0485	Kosuru Syama Latha		
B3	16NM1A0471	Karri Sai Komali	Combined diffusion scheme and sharpening filter for digital image denoising	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PO10, PO11, PO12, PSO2
	16NM1A0463	Kalla Naga Tejaswani		
	16NM1A0464	Kalluri Pavani		
	16NM1A04A8	Narava Mounika		
B5	16NM1A0470	KLeela Mangaveni Raj	Contract Enhancement Using Joint Histogram Equalization	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PO10, PO11, PO12, PSO2
	16NM1A04A5	M Durga Lakshmi Pravallika		
	16NM1A0491	Maigapula Roshini		
	16NM1A0468	Kanikella Pratyusha		
B7	16NM1A0469	Kannuru Pavani	AN Adjustable window -based FIR filter and its application in audio signal De- Noising	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PO10, PO11, PO12, PSO2
	16NM1A0466	Kandregula Roopa		
	16NM1A04A6	Murupi Naga Mani		
	16NM1A0495	Manam Sai Rekha		
B8	17NM5A0409	Dhaval Tulasi	Train and land classification of Polsar Data	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PO10, PO11, PO12, PSO2
	16NM1A04A9	Nethi Maneesha		
	16NM1A04B9	Pillala Yogitha		
	17NM5A0408	Dasari Aruna		
B10	16NM1A04C0	Praharaju Ratna Harinya	Modified edge detection for vehicle number plate recognition using image processing	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PO10,
	16NM1A0489	Lopinti Divya Sri		



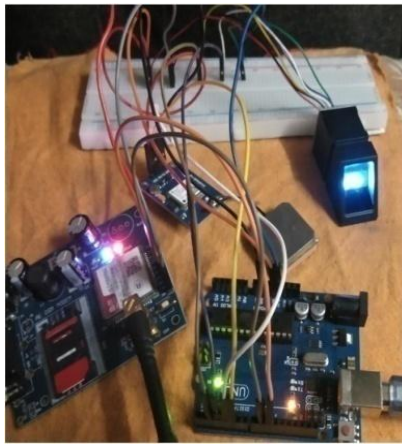
	16NM1A0483	Koona Vaishnavi		PO11, PO12, PSO2
	16NM1A0478	Kommanapalli Susmita		
B13	16NM1A0493	Malla Jyothirmayee Naidu	Design of less detectable radar waveforms using stepped frequency modulation and coding	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PO10, PO11, PO12, PSO2
	16NM1A0484	Kosara Kavya		
	16NM1A04B2	Padala Yerni Naga Anjani		
	16NM1A04A7	Nalla Venkata Divya Vani		
B14	16NM1A0499	Mattaparthi Revathi	Integrated Machine Learning with region based active contour in medical image segmentation	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PO10, PO11, PO12, PSO2
	16NM1A04B6	Pappala Venkata Lakshmi		
	16NM1A0461	Kadiyam Sai Suma		
	16NM1A0481	Konathala Poornima Preethi		
C2	16NM1A04D4	Senapathi Hemanth Sandhya	Detection of third heart sound using intrinsic time scale decomposition	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PO10, PO11, PO12, PSO2
	17NM5A0415	Illapu Dhana Lakshmi		
	16NM1A04G4	Gonnabathulla Damini Priya		
	17NM5A0431	Veerlapati Tanuja		
	14NM1A0481	Pathivada Sai Priyanka		
C3	16NM1A04D8	Sushmita Mondal	Multifocus image fusion using local binary pattern	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PO10, PO11, PO12, PSO2
	17NM5A0426	Sarvasiddi Ramya		
	16NM1A04F7	Vegesna Pujitha		
	16NM1A04E2	Telakarapu Jayasri		
C6	16NM1A04E0	Talapureddy Ponny	Minimization of speckle noise from polarimetric sar data of sentinel -1 sensor	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PO10, PO11, PO12, PSO2
	16NM1A04F0	Vankayala Mounika		
	17NM5A0414	Gudivada Srisailalitha		
	16NM1A04F1	Vanumu Navya Priya Harini		
C7	16NM1A04C7	Reddi Divya Sai	Performance of fuzzy filter and mean filter for removing Gaussian noise	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PO10, PO11, PO12, PSO2
	16NM1A04F8	Vegi Hema		
	16NM1A04D9	Swamy Vasupradha		
	17NM5A0420	Malla Adi Lakshmi		
C12	16NM1A04D3	Saragada Daisy Angel	Removal of noise in ECG Signal using digital filters	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PO10, PO11, PO12, PSO2
	16NM1A04E8	Tippala Vasudha Reddy		
	16NM1A04F4	Vasamsetti Sindhuja		
	16NM1A04C5	Rambhatla Chinmayi		
C14	17NM5A0421	Miriappalli Lavanya	Estimating RCS for a perfectly conducting sphere at different frequencies	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PO10, PO11,
	16NM1A04G2	Vinakota Varnika		

	16NM1A04C2	Pulaka Sailaja		PO12, PSO2
C15	17NM5A0424	Ponnana Lalitha	Brain Tumor deflection based on segmentation using MATLAB	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PO10, PO11, PO12, PSO2
	16NM1A04E6	Thota Sirisha		
	16NM1A04C3	Raja Vigna Vigneshwari		
	17NM5A0430	Tumpala Lavanya		
<b>Modern Tool usage based Projects (2019-20)</b>				
Batch No.	Regd.No.	Name of the Student	Project Title	PO & PSO Coverage
A3	16NM1A0409	Balla Navyasri	Design and Implementation of Full Adder by Using Adiabatic Logic	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2
	16NM1A0432	Dharmavarapu Indhuja		
	16NM1A0439	Gandupalli Manisha		
	16NM1A0401	A Kavita Rao		
A8	16NM1A0413	Baswani Pratyusha	Design and simulation of mems based piezoresistive Pressure sensor using comsol 5.3	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2
	16NM1A0435	Eppili Priyanka		
	16NM1A0438	Gandreti Maheswari		
	16NM1A0456	Jakkireddy Jaisree		
A14	16NM1A0421	Chamanthula Sree Harshitha	Design and analysis of Low power and High Speed Double - Tail Comparator	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2
	16NM1A0430	Dasari Yogitha		
	16NM1A0427	Damarasing Velangini Navya		
	17NM5A0406	Chepala Venkata Lakshmi		
B6	16NM1A0473	Karuturi Binduvallika	Implementation of Vedic multiplier using reversible logic gates	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2
	16NM1A04A0	Metta Prathyusha		
	16NM1A0490	Maddila Mounica		
	17NM5A0411	Gonthini Amrutha Valli		
B9	16NM1A0486	Kowtha Renuka Vijaya Lakshmi	Design of 4-Bit shift register using LCNT D-Flip Flop	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2
	16NM1A0487	Lakku Pushpa Ganga Bhavani		
	16NM1A04B3	Palacherla Sri Satya Abhigyna		
	16NM1A0492	Majji Haritha		
B12	16NM1A0482	Kondepati Lakshmi Likitha	Design and simulation of Heterogeneous Adder using xilinx VIV ADO	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2
	16NM1A04B8	Pericharla Satyasai Sushma		
	16NM1A04B1	Padala Saishanmukhi		
	16NM1A0475	Katta Deepthi		
B15	17NM5A0412	Gorli Ramya	Proficient Phonocardiogram Using Internet	PO1, PO2, PO3, PO4,

	16NM1A04A4	M Mounika Vimala Dharshini	of Things	PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2
	16NM1A0498	Mantri Deekshitha		
	16NM1A0496	Manjeti Devi		
C5	16NM1A04D7	Sravani Kumari Savithini	Low power high speed carry save adder using modified gate diffusion input technique	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2
	15NM1A0477	Moka Sai Lakshmi		
	16NM1A04F3	Vasamsetti Haritha		
	16NM1A04C8	Rompalli Keerthi		
C9	17NM5A0432	Voleti Amal Prathyusha	Implementation of low power dissipation and area efficient decoder using mixed logic circuit	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2
	16NM1A04C4	Rama Harika Dubasi		
	16NM1A04G3	Vooda Sai Sowjanya		
	17NM5A0422	Pappu Kusumakumari		
C10	16NM1A04D1	Sanapathi Sirisha	Design of Hamming code encoder and decoder using different techniques	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2
	16NM1A04F5	Vasupilli Manju		
	16NM1A04C9	Rongali Sai Poojitha		
	17NM5A0418	Karusodhi Sailaja		
<b>Application based Projects (2019-20)</b>				
Batch No.	Regd.No.	Name of the Student	Project Title	PO & PSO Coverage
A1	16NM1A0407	Badagala Sharmila	Alcohol Detection and Automatic Engine Lock System Using ARDUINO	PO1, PO2, PO3, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2
	16NM1A0445	Gogada Venkata Lakshmi		
	16NM1A0414	Batchu Prathyusha		
	16NM1A0449	Goudu Manasa		
	16NM1A0447	Gonagana Anjana Druthi		
A2	16NM1A0444	Ginkala Phani Kumari	Fault Detection in Railway Tracks	PO1, PO2, PO3, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2
	16NM1A0437	Gadilli Manasa		
	16NM1A0428	Darapu Sai Vasavi		
	16NM1A0415	Bathina Sreelekha		
B2	16NM1A0494	Malla Kinnera	Resume shorting using machine learning	PO1, PO2, PO3, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2
	16NM1A04A2	Mondi Niharika		
	16NM1A0462	Kaicharla Anjani Tulasi		
	16NM1A0474	Katapalli Vara Lakshmi		
C4	16NM1A04E4	Thamma Sai Harshitha	Design of array antenna for 5G Applications	PO1, PO2, PO3, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12,
	16NM1A04D2	Sanivada Chandana Priyanka		
	16NM1A04E3	Thadi Sunitha		

	17NM5A0428	Sikha Hemasree		PSO1, PSO2
C11	16NM1A04D6	Somala Maha Lakshmi	Compact H-Shaped sierpinski carpet fractal antenna for 5G Wireless applications	PO1, PO2, PO3, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2
	17NM5A0417	Karanam Sravani		
	16NM1A04E5	Thoota Keerthana		
	17NM5A0419	Kolli Vakula Devi		
C16	16NM1A04F9	Vennala Poornima	Chatbot using machine learning	PO1, PO2, PO3, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2
	16NM1A04C1	Pratti Rishita Jaya		
	16NM1A04D0	Roopashree Pampanaboyina		
	16NM1A04G5	Sridevi Priyadarshini Kolli		

**Table B.2.2.3.f: Student Projects for CAY (2019-20)**

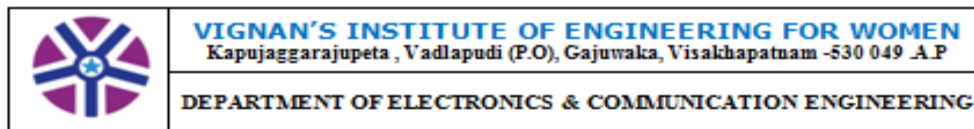


**Figure B.2.2.3.d: Sample Projects based on IoT**

### C. Process for Monitoring and Evaluation (5)

#### Project Monitoring:

Regular meetings with guide by the respective project batches and discussions are recorded in the attendance register provided by the department. Guidelines were provided by the department to the students about the schedule, presentation and preparation frequently necessary to attend reviews. Guidelines to students by their respective guides allow the students to complete their project within the stipulated time. The students plan their work as per the schedule given by the project coordinator in discussion with program coordinator. A sample copy of project schedule is given in Figure B.2.2.3.e



NO: VIEW/ECE/DC/2018-19/22

Date: 15.11.2018

All the faculty members and the students are advised to follow the given schedule meticulously so as to complete the project work effectively within the stipulated submission deadlines.

SNo.	Date	Activity
1.	19-11-2018	Initiation of the Project Work
2.	26-11-2018	Finalization of Domain and Technology
3.	12-12-2018	Problem definition Objective
4.	17-12-2018	Abstract Submission Literature Survey (if applicable)
5.	24-12-2018	<u>Analysis</u> (i) Software Requirement Specification (a) Software Requirement (b) Hardware Requirement (ii) Block Diagram of the proposed project (iii) Algorithms and Flowcharts
6.	07-01-2019 & 08-01-2019	Project Review – I
7.	29-01-2019	Existing Techniques Implementation
8.	27-02-2019	Implementation and Results (i) Integration of the designed Modules (ii) Verification of simulation Results
9.	13-03-2019	Testing and Validation (i) Design of Test Cases and Scenarios (ii) Validation
10.	14-03-2019 & 15-03-2019	Project Review – II
11.	20-03-2019	Submission of the Project

Project Coordinator

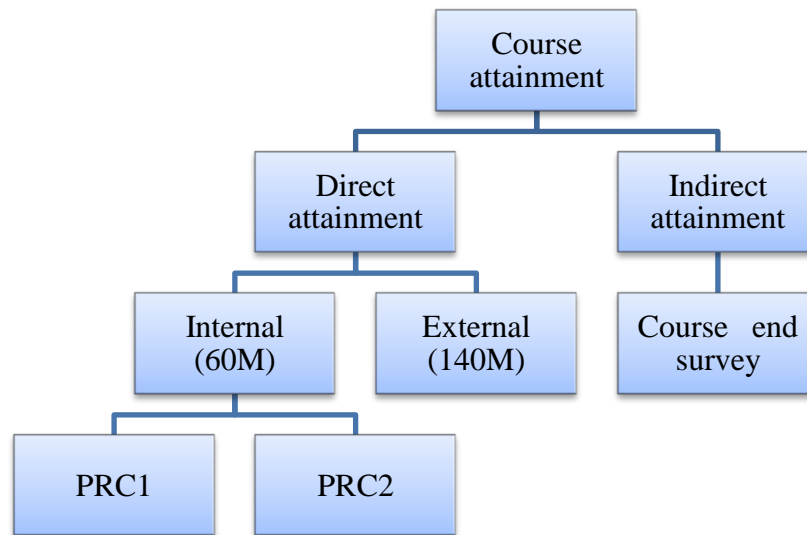
HoD-ECE

Figure B.2.2.3.e: Sample Project Schedule

### Project Evaluation:

Two reviews were conducted to ensure that 50% of the proposed work is implemented by the students for Project Review Committee (PRC)-1 and 100% for Project Review Committee (PRC)-2. Suggestions of the reviewers in the PRC help the students to verify and modify for successful completion of the project.

The marks allotted for project are 200 which are split into 60M as internal and 140M as external. Internal reviews are conducted in two stages under Project Review Committee 1 (PRC1) and Project Review Committee 2 (PRC2).



**Figure B.2.2.3.f: Assessment tools for the calculation of CO attainment for Project course**

PRC1 is based on the following parameters:

- Project Description
- Technical Knowledge
- Presentation Skills
- Contribution
- Quality of work

Project Review Committee comprising of program coordinator, two senior professors and project supervisor evaluates the project done by the students in PRC1 and PRC2 respectively. PRC1 evaluates the students in terms of their ability to

- ❖ Outline the step-by-step procedure of the identified project task.
- ❖ Discuss the fundamental and mathematical concepts related to the project

- ❖ Communicate in an effective way to describe the methodology used in their project.
- ❖ Work as a team to execute the identified task.
- ❖ Explore the quality of the selected project.

PRC2 is based on the following parameters:

- PRC-1 Justification
- Overall Presentation
- Outputs/Results
- Output/Result verification

PRC 2 evaluates the students in terms of their ability to

- ❖ Conclude and validate the results obtained.
- ❖ Defend the work implemented as per the suggestions in PRC1.
- ❖ Communicate as a team or as an individual to explain the work carried out.

A separate team consisting of field experts is assigned to verify the outputs of the batches before the students attend the PRC2. The summary of the project task is evaluated by this team. The tools used, results obtained, comparison with existing methodologies and conclusion of the results are verified by the team assigned.

External project reviews are conducted in the presence of external examiner to validate project's design, simulation and results etc. External evaluation is carried out by the respective batches that defend their work in presence of an external examiner, project coordinator, and project guide. The external examiner will be appointed by the university. The external examiner evaluates based on work carried out by the students as a team, project documentation, conclusion and future scope of the work.

#### **D. Process to assess Individual and team Performance (5)**

The project work is carried out by the students as a team of 4 members maximum. However, the evaluation is done based on the individual performance and as a team. The rubrics for evaluating the team performance and individual performance of the student in implementing the proposed work is framed and evaluated during PRC-1 & PRC-2.

### Rubric sheet for PRC-1

<b>Batch No.</b>		<b>Class/Section</b>	
<b>Date</b>		<b>Max. Marks</b>	<b>25</b>
<b>Project Title:</b>			

Metric and Allotted Marks	Excellent	Very Good	Good	Average/ Need to be Improved	Score
	5	4	3	2	
<b>Project Description</b>	Student provided detail procedure, collect relevant data that is followed in their work.	Student provided procedure, collect relevant data that is followed in their work.	Student provided procedure, collect data that is followed in their work.	Relevant data collected is not up to the mark that is followed in their work.	
<b>Technical Knowledge</b>	Technical content is explained exceptionally	Technical content is explained effectively	Technical content is presented in understanding way	Technical content is not related	
<b>Presentation Skills</b>	Demonstration is excellent and attempted all the queries	Demonstration is very good and answered all questions except one/two	Demonstration is good and answered all questions except three/four	Answered only rudimentary questions	
<b>Contributions</b>	Student has a clear idea, participate in the group and can independently explain the proposed work.	Student has an idea and can explain the proposed work.	Student has idea and can mostly explain the proposed work.	Student has no clear idea and cannot explain their project	
<b>Quality of the work</b>	Execute the work with highest quality	Execute work with high quality.	Need to check to ensure the quality.	Need to revise the work to ensure quality.	
<b>Total Marks</b>					

**Table B.2.2.3.g: Rubrics for PRC-1**



### Rubric sheet for PRC-2

<b>Batch No.</b>		<b>Class/Section</b>	
<b>Date</b>		<b>Max. Marks</b>	<b>35</b>
<b>Project Title:</b>			

Metric and Allotted Marks	Excellent	Good	Satisfactory	Score
<b>Results of Existing Techniques (if any)- 1M</b>	Obtained the results	Partially obtained the results	Not relevant result	
<b>Results of Proposed Technique- 2 M</b>	Obtained the results	Partially obtained the results	Not relevant result	
<b>Project Status- 2M</b>	completed	Partially completed	Not relevant	
<b>Total</b>				

Metric and Allotted Marks	Excellent	Good	Average/ Need to be Improved	Score
	<b>10</b>	<b>6</b>	<b>4</b>	
<b>PRC-1 Remarks</b>	Suggestions were considered and improved	Suggestions are considered but partially implemented	Need to improve as per the suggestions given in PRC-1	
<b>Overall Presentation</b>	The proposed work is presented in a systematic way with improved skills.	The proposed work is presented in a systematic way but need to improve the communication skills	The proposed work is presented but need to improve presentation skills	
<b>Results &amp; Conclusion</b>	Results are relevant and concluded	Results are relevant but need to improve the conclusion	Results are obtained but need to conclude clearly.	
<b>Total</b>				

**Table B.2.2.3.h: Rubrics for PRC-2**

The sample assessment sheets for PRC-1 & PRC-2 are given for reference

**Vignan's Institute of Engineering for Women:: Visakhapatnam.**  
Department of ECE  
**Project Evaluation Form (PRC-1)**

Batch No.: 04 Date: 07-01-2019  
Project Title: High Speed Carry Skip adder implementation using Tri-state Buffer Circuit

Regd.No.	Name of the student	Project Description (5M)	Technical Knowledge (5M)	Presentation Skills (5M)	Contribution (5M)	Quality of work (5M)	Total (30M)
16NMSA0402	Baggi Leela Anura Varshini	4	4	5	5	5	23
15NMI A0439	Gundala Sravanthi	5	4	4	4	5	23
15NMI A0443	Jadda Anuradha	5	4	4	4	5	23
15NMI A0401	Akkarapu Ganeshwari Rupavathi	4	4	4	4	5	21

**Supporting Comments:** Includes (a) overall strengths and weaknesses (b) areas of research or analysis that could be deleted (c) any areas or directions that would be added (d) changes that may have occurred in the research context that might alter the planned targets or goals.

1. Introduction to the topic is not appropriate
2. Not able to explain RCA & CSA topics
3. The explanation of results & waveform is poor
4. Conclude with more analysis part
5. Keep Label numbers for components in schematic
6. Basic program not attached

Name & Signature of Panel Member-1: *[Signature]*  
Name & Signature of Panel Member-2: *[Signature]*  
Name & Signature of Panel Member-3: *[Signature]*  
Name & Signature of Panel Member-4: *[Signature]*  
Name & Signature of the Guide: *[Signature]*

**Vignan's Institute of Engineering for Women:: Visakhapatnam.**  
Department of ECE  
**Project Evaluation Form (PRC-2)**

Batch No.: 04 Date: 18-03-2019  
Project Title: High Speed Carry Skip adder implementation using Tri-state Buffer Circuit

**Results Verification: (5M)** 04

Existing Technique Results (if any)	Proposed Project Results	Project Status	Remarks (if any)
80-bit Carry Skip adder [Cm]	32-bit CSA Tri-state buffer cm	Completed	Waveforms have been distributed [Carry not obtained]

**Proposed:** Delay = 167.80PS (1/PA W+R) [Tri-state]  
Delay = 1.2511NS (1/PA W+R)  
**PRC:** Existing - Delay = 685.80PS (1/PA W+R)  
Delay = 1.0508NS (1/PA W+R)

Signature of Faculty In-charge (Results): *[Signature]* 18/3/19

Regd.No.	Name of the student	PRC-1 Remarks Justification (10M)	Overall Presentation (10M)	Results (10M)	Total (30M)
16NMSA0402	B L Anura Varshini	10	10	10	30
15NMI A0439	Gundala Sravanthi	9	10	10	29
15NMI A0443	Jadda Anuradha	8	9	10	27
15NMI A0401	A Ganeshwari Rupavathi	7	8	10	25

**Supporting Comments:**

- Mathematical Expressions are not presented
- Couldn't able to explain the logic properly
- Presentation flow is not good

Signature of Panel Member-1: *[Signature]*  
Signature of Panel Member-2: *[Signature]*  
Signature of Panel Member-3: *[Signature]*  
Signature of Panel Member-4: *[Signature]*  
Signature of the Guide: *[Signature]*

Figure B.2.2.3.g: Sample assessment sheets for PRC-1 & PRC-2

VIGNAN'S INSTITUTE OF ENGINEERING FOR WOMEN::VISAKHAPATNAM								
Department of ECE								
Project Internal Marks								
Class: IVECE-A							Date : 30.03.2019	
Batch No.	Regd.No	Name of the Student	Project Title	PRC-1 (25M)	PRC-2 (30M)	Code Verification (5M)	TOTAL (60M)	Signature of the Guide
1	15NM1A0410	Basa Kavya Vijaya Lakshmi	Removal of Power Line Interference in ECG using window techniques based on FIR filters.	22	30	5	57	Mrs.B. Manjula
	15NM1A0454	Karaka Poorna		21	29	5	55	
	15NM1A0444	Jallepalli Gayathri Reiki Prathyusha		19	28	5	52	
	15NM1A0435	Gollavilli Revathi		19	25	5	49	
2	15NM1A0430	Gandheti Kanaka Divya	Advancement in Traffic System using ultrasonic Sensor.	22	30	5	57	Mr.B.Srinivas Rao
	15NM1A0402	Andiboyina Janaki		21	25	5	51	
	15NM1A0406	Ayenampudi Alekhya		21	28	5	54	
3	15NM1A0440	Gurugubelli Madhuri	Detection & Identification of third heart sound using Hilbert Vibration Decomposition.	18	26	5	49	Mr. B. Sai Bharadwaj
	15NM1A0431	Gantla Poojitha		25	30	5	60	
	15NM1A0432	Gedela Renuka		23	26	5	54	
	15NM1A0417	Chandaka Vasavi		20	28	5	53	
4	15NM1A0452	Kante Suma	High Speed Carry Skip adder implementation using Tri-state Buffer Circuit.	19	25	5	49	Mr. B. Sandeep Kumar
	16NM5A0402	Boggu Leela Amruta Varshini		23	30	4	57	
	15NM1A0439	Gundala Sravanthi		22	29	4	55	
	15NM1A0443	Jaddu Annamadu		22	27	4	53	
5	15NM1A0401	Allavarapu Ganeswari Rupavathi	Energy aware of IEEE 754 Standard Floating point Multiplier using Delay Insensitive Design Approaches.	21	25	4	50	Ms. K. Sushma
	15NM1A0462	Kovagapu Ranya		23	29	5	57	
	15NM1A0446	Kalaga Lakshmi Prasanna		23	29	5	57	
	15NM1A0423	Dadi Lohitha Lahari		0	23	5	28	
	15NM1A0418	Chappa Padmini		21	26	5	52	

**Figure B.2.2.3.h: Sample project evaluation sheet**

### E. Quality of completed projects/working prototypes (5)

The projects are done in emerging areas of VLSI, Embedded systems, IoT, Machine Learning, Signal and Image processing applications, Antenna Design etc. The students implement projects based on application required for societal improvement or product based projects required for real time implementation. Some of the projects were related to research-based that utilizes the modern tools available and the results obtained can be extended for fabrication necessary for communication, radar and various industrial applications. The innovative projects are turned to papers for publication in reputed journals and conferences.

The list of quality projects implemented to solve contemporary issues for the last three academic years is given in Table B.2.2.3.i

## Students Quality Projects

Academic Year	S.No	Regd. No	Name of the students	Project Title	PO & PSO Coverage
2017-18	1	14NM1A0412	Boddeti Tanuja lakshmi	Iot Based Smart Parking Security System	PO3, PO5, PO6, PO7, PO8, PO12 PSO1, PSO2
		14NM1A0450	Kandregula Annapurna		
		14NM1A0448	Jami gayathri		
		14NM1A0453	Karedla venkata sravani		
	2	14NM1A0463	Madaka Sirisha	Iot Based Infant Abduction Security System	PO3, PO5, PO6, PO7, PO8, PO12 PSO1, PSO2
		14NM1A0451	Kandregula Uma devi		
		14NM1A0433	Gandi leelavathi		
		14NM1A0415	Bonagiri vijaya lakshmi		
	3	14NM1A04C4	A Bhavana Sai Narayani	Solar Driven Arduino based Automatic Irrigation using GSM	PO3, PO5, PO6, PO7, PO8, PO12 PSO1, PSO2
		14NM1A04C3	Ampolu Navya		
		14NM1A04C1	Aki Vandana		
	4	13NM1A0460	L.Swathi	Event-Triggering Method for IoT health care applications	PO3, PO5, PO6, PO7, PO8, PO12 PSO1, PSO2
		15NM5A0412	Marla Monika Reddy		
		14NM1A04F6	Pithani Udaya Lakshmi		
	5	14NM1A04E4	Kothurthi Manasa	IoT Based Smart garbage Alert System Using UNO & ESP 8266	PO3, PO5, PO6, PO7, PO8, PO12 PSO1, PSO2
		14NM1A0404	Ayyapureddi Priyanka		
14NM1A0418		Buddha mohana lakshmi			
14NM1A0454		Koripella saipriya			
6	14NM1A0417	B. Gnaneswari santhosh kusuma	IoT Based smart IV fluid detection	PO3, PO5, PO6, PO7, PO8, PO12 PSO1, PSO2	
	14NM1A04F9	Reddy Mounica			
	15NM5A0413	Siddapu Adilakshmi			
	14NM1A04E3	Korupolu Renuka			
2018-19	7	15NM5A0409	G Vijayalakshmi Babitha	Advancement in Traffic System using ultrasonic Sensor.	PO3, PO5, PO6, PO7, PO8, PO12 PSO1, PSO2
		15NM1A0430	Gandreti Kanaka Divya		
		15NM1A0402	Andiboyina Janaki		
		15NM1A0406	Ayenampudi Alekhya		
	8	15NM1A0440	Gurugubelli Madhuri	Smart Intelligent ECG System based on IoT	PO3, PO5, PO6, PO7, PO8, PO12 PSO1, PSO2
		15NM1A0434	Gollakoti Mani Deepika		
		15NM1A0421	Chitimisetti Haritha		
		15NM1A0433	Gogulamudi Pooja		
	9	15NM1A0449	Kandipalli Sarika	IoT Based Weather Monitoring System using Raspberry Pi Board.	PO3, PO5, PO6, PO7, PO8, PO12 PSO1, PSO2
		16NM5A0405	Buskala Sravani		
		15NM1A0426	Datla Sai Krishna Sravanthi		
		15NM1A0412	Baswa Rajani		
		15NM1A0460	Korada Geetha Madhuri		

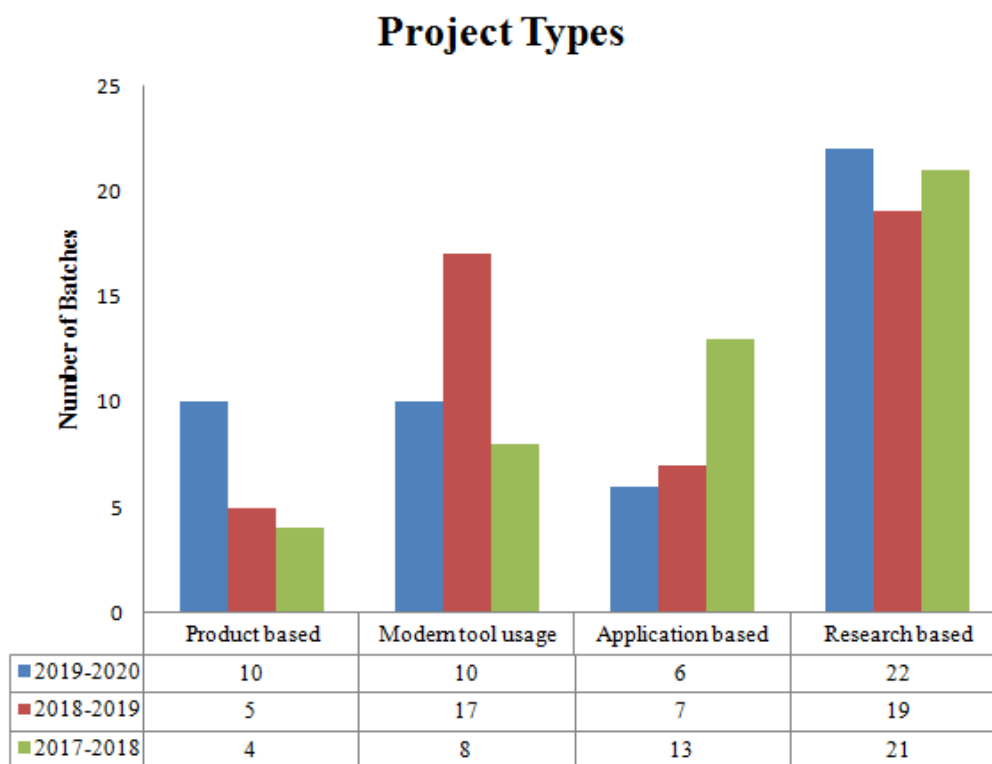
	10	15NM1A0438	Gundala Santhi	Vision based Vehicle Tracking and Counting using Raspberry-Pi 3	PO3, PO5, PO6, PO7, PO8, PO12 PSO1, PSO2
		15NM1A0427	Dokala Anusha		
		15NM1A0413	B Shanmukalakshmi Katyayani		
		15NM1A0429	Ganagala Divyasri		
	11	15NM1A0474	Maradana Manasa	Human Face recognition and edge detection using Raspberry Pi	PO3, PO5, PO6, PO7, PO8, PO12 PSO1, PSO2
		15NM1A04A5	Ramba Vasavi Devi		
		16NM5A0411	Kalla Poornima		
		15NM1A0490	Pagadala Chittilakshmi		
<b>2019-20</b>	12	16NM1A0407	Badagala Sharmila	Alcohol Detection and Automatic Engine Lock System Using ARDUINO	PO3, PO5, PO6, PO7, PO8, PO12 PSO1, PSO2
		16NM1A0445	Gogada Venkata Lakshmi		
		16NM1A0414	Batchu Prathyusha		
		16NM1A0449	Goudu Manasa		
		16NM1A0447	Gonagana Anjana Druthi		
	13	16NM1A0444	Ginkala Phani Kumari	Fault Detection in Railway Tracks	PO3, PO5, PO6, PO7, PO8, PO12 PSO1, PSO2
		16NM1A0437	Gadilli Manasa		
		16NM1A0428	Darapu Sai Vasavi		
		16NM1A0415	Bathina Sreelekha		
	14	16NM1A0494	Malla Kinnera	Resume shorting using machine learning	PO3, PO5, PO6, PO7, PO8, PO12 PSO1, PSO2
		16NM1A04A2	Mondi Niharika		
		16NM1A0462	Kaicharla Anjani Tulasi		
		16NM1A0474	Katapalli Vara Lakshmi		
	15	16NM1A04E4	Thamma Sai Harshitha	Design of array antenna for 5G Applications	PO3, PO5, PO6, PO7, PO8, PO12 PSO1, PSO2
		16NM1A04D2	Sanivada Chandana Priyanka		
		16NM1A04E3	Thadi Sunitha		
		17NM5A0428	Sikha Hemasree		
	16	16NM1A04D6	Somala Maha Lakshmi	Compact H-Shaped sierpinski carpet fractal antenna for 5G Wireless applications	PO3, PO5, PO6, PO7, PO8, PO12 PSO1, PSO2
		17NM5A0417	Karanam Sravani		
		16NM1A04E5	Thoota Keerthana		
		17NM5A0419	Kolli Vakula Devi		
	17	16NM1A04F9	Vennala Poornima	Chatbot using machine learning	PO3, PO5, PO6, PO7, PO8, PO12 PSO1, PSO2
		16NM1A04C1	Pratti Rishita Jaya		
		16NM1A04D0	Roopashree Pampanaboyina		
16NM1A04G5		Sridevi Priyadarshini Kolli			
18	16NM1A0416	Beesetty Joshna	Vehicle Detection System with Emergency Notification Abstract	PO3, PO5, PO6, PO7, PO8, PO12 PSO1, PSO2	
	16NM1A0425	Cherukuru Sowmya			
	16NM1A0458	Jandhyam Chandini			
	16NM1A0420	Budaraju S S S Pradyumna			
19	16NM1A0417	Bhaddirraju Alekhya	Smart Intrusion Detection System for Home	PO3, PO5, PO6, PO7,	

		17NM5A0401	Agraharapu Devi	Security	PO8, PO12 PSO1, PSO2	
		16NM1A0450	Gudivada Bhargavi			
		16NM1A0440	Ganta Thanmai			
	20		17NM5A0404	Bodala Sagarika	IoT based water quality monitoring system	PO3, PO5, PO6, PO7, PO8, PO12 PSO1, PSO2
			16NM1A0405	Amarakota Swathi		
			16NM1A0426	Chippada Divya Lakshmi		
			16NM1A0443	Geesala Rajeswary		
	21		16NM1A0404	Agnihotri Padma Sravya Sri	Cardioxy Health Tracker	PO3, PO5, PO6, PO7, PO8, PO12 PSO1, PSO2
			16NM1A0436	E Swathi Laxmi Santhoshi Devi		
			16NM1A0431	Devisetti Dedeepya		
			16NM1A0454	G Leela Subha Laxmini		
	22		16NM1A0465	K Roshini Krishna Tulasi	Smart stick for blind with GPS tracking system	PO3, PO5, PO6, PO7, PO8, PO12 PSO1, PSO2
			16NM1A0480	Konathala Jayasri		
			16NM1A04B7	Pavitra Sahu		
			16NM1A0479	Kona Priyanka		
	23		16NM1A04B0	Netti Priyanka	Automatic LPG Cylinder Booking and Leakage Detection Using Arduino UNO	PO3, PO5, PO6, PO7, PO8, PO12 PSO1, PSO2
			16NM1A04B4	Palisetty Abhinandini		
			16NM1A0497	Mantrapudi Neelima		
			17NM5A0413	Gosala Gowthamy		
	24		17NM5A0412	Gorli Ramya	Proficient Phonocardiogram Using Internet of Things	PO3, PO5, PO6, PO7, PO8, PO12 PSO1, PSO2
			16NM1A04A4	M Mounika Vimala Dharshini		
			16NM1A0498	Mantri Deekshitha		
			16NM1A0496	Manjeti Devi		
	25		16NM1A04C6	Rapaka Ramyasri	Real - Time pothole detection and notification system	PO3, PO5, PO6, PO7, PO8, PO12 PSO1, PSO2
			16NM1A04G0	Vepada Harika		
			16NM1A04D5	Siyadri Navya Sudha		
16NM1A04E9			Vadlamani Naga Sai Sandeepthy			
16NM1A04G6			Sesetty Uma Maheswari			
26		16NM1A04F2	Varahagiri Joshana Rajeswari	IoT Based gas leakage and fire alert system	PO3, PO5, PO6, PO7, PO8, PO12 PSO1, PSO2	
		17NM5A0416	Kambala Santhi Priya			
		17NM5A0427	Shaik Firdos			
		17NM5A0429	Syed Nayeema Kousar			
		16NM1A04E1	Tatisetty Alekhya			
		17NM5A0423	Perla Rajeswari			
		16NM1A04F6	Vechalapu Roshini			

Table B.2.2.3.i: Quality Projects

Projects Types	Year wise no.of projects carried out		
	CAY (2019-20)	CAYm1 (2018-19)	CAYm2 (2017-18)
Product based	10	5	4
Modern tool usage	10	17	8
Application based	6	7	13
Research based	22	19	21

**Table B.2.2.3.j: Project types for the last three academic years**



**Figure B.2.2.3.i: Project types for the last three academic years**

#### F. Evidences of papers published / Awards received by projects, etc. (2)

The students work with innovative ideas towards implementation of real time projects. They are encouraged to participate in technical symposiums and events where they exhibit their work in presence of experts. The following projects listed below received awards in events conducted intra and inter college competitions.

	CAY (2019-20)	CAYm1 (2018-19)	CAYm2 (2017-18)
<b>Awards</b>	01	03	04
<b>Publications</b>	15	03	05

**Table B.2.2.3.k: Number of Awards/Publications by students**

**Awards received for projects**

Academic year	Name of the project	Event/Venue	Name of the Students	Award
2017-18	Automatic LPG booking through IVRS, leakage detection and real time gas monitoring system	Innovation Fair at JNTUK, Kakinada	P. Chandana Sravani V Tirumala gayatri S Jyothi S prasanna lakshmi	First
	Hands on implementation of IoT	VIEW, Visakhapatnam	A.Jhansi B.Saranya	Second
	Live model expo	VIEW, Visakhapatnam	A.Alekya D.S.K. Sravanthi	Third
	Hands on implementation of IoT	VIEW, Visakhapatnam	B Rama Devi	Second
2018-19	IoT based green house monitoring	Smart India Hackathon	J.V.Sakunthala G.Sravanthi K.Mamatha G.Shanthi S.H.Sandhya V.N.Priya	Selected for Hackathon
	Water Quality monitoring using IoT	Smart India Hackathon	M.Sravani Sandhya N. Susila M.Manjusha M. Poornima T. Harshitha S. Chandana priyanka	Selected for Hackathon
	Vision based security system	Smart India Hackathon	D.Jhanavi G.Revathi K.Manju bhargavi K. Naga varalakshmi V. Manju R. Divya sai	Selected for Hackathon
2019-20	IoT based industrial safety	Eclectique 2k19, JNTU, Vizianagaram	K. Sai Komali, M. Deekshitha, M. Jyothirmayee	Third

**Table B.2.2.3.I: Awards received for the students' projects**



**Paper Publications of students Projects:****CAY m2 (2017-18)**

1. J. Sudhakar, A. Uma Maheswari, “Design of Viterbi Decoder for Underwater Marine Receivers using Dual Rail Delay Insensitive Approaches”, Defence S & T Technical Bulletin, Scopus Indexed, vol.10, no.1, pp. 24-32, H-Index: 8, 2017.
2. J. Sudhakar, K. Sushma, “Energy Efficient IEEE 754 Floating Point Multiplier using Dual Spacer Delay Insensitive Logic”, Circuit World, vol. 43, no. 02, pp. 72-79, 2017.SCI, Scopus Indexed, H-Index:18, 2017.
3. J. Sudhakar, A.L. Durga, K. Sushma “Evaluation of Dual Rail Complete Detection using Asynchronous Delay Insensitive Frameworks”, International Journal of Simulation, Systems, Science & Technology, vol. 19, no. 03, May 2018.
4. J. Sudhakar, Y. Alekhya, K. S. Syamala, “Dual Rail Delay Insensitive IEEE-754 Single Precision Null Convention Floating Point Multiplier for Low Power Applications”, in Lecture Notes in Networks and Systems, 5<sup>th</sup> International Conference on Innovations in Electronics & Communication Engineering, Hyderabad, July 2016 - Springer Proceedings.
5. M GeethaSruthi, Ch Ramesh Babu, Dr. Ch Sumanth Kumar “ Implementation of an IoT based webserver for home automation” in International Journal of electronics, electrical and computational system (IJEECS), vol 6, issues 5, pg 273-279, May 2017.

**CAY m1 (2018-19)**

1. J. Sudhakar, R.V. Jeevitha, “Sense Amplifier Half Buffer Based Ripple Carry Adder for IEEE 754 Standards”, International Conference on Intelligent Computing and Smart Communication Technologies (ICSCT 19), Springer, was held at Anurag group of Institutions Hyderabad during 26th to 27th July 2019.
2. S. Jhansi Rani, J. Sudhakar, “Multi Objective Analysis of Standard Cells using sense Amplifier based QDI approach”, IOSR Journal of Electronics and Communication Engineering (IOST-JECE), Vol. 13, Issue. 4, July-August 2018, ISSN 2278-8735.
3. S Nirosha, Ch Ramesh Babu, “Automated ECG Signal Quality Assessment based on Wavelet Decomposition for Baseline Wander Noise Removal” 3rd International Conference on Innovative Trends in Engineering, Applied Science and Management (ICITEASM-2018).

**CAY (2019-20)**

1. R.V. Jeevitha, J. Sudhakar, “Sense Amplifier Half Buffer Ripple Carry Adder for IEEE 754 Standards”, International Journal of Engineering and Advanced Technology (IJEAT), Vo. 9, Issue. 3, February 2020, ISSN 2249-8958.
2. K. Sunil Kumar, P Ratna Harinya, L. Divya Sri, K. Sushmita, K. Vaishnavi, “KIRSCH Compass Kernel Edge Detection for Vehicle Number Plate Detection Using Image Processing”, International Research Journal of Engineering and Technology (IRJET), Vol. 7, Issue. 3, March 2020, ISSN- 2395-0072.
3. G. Lakshmana, N. Priyanka, P. Abhi Nandhini, M. Neelima, G. Gowthamy, “ Automatic LPG Cylinder Leakage Detection and Booking System using Arduino”, International Research Journal of Engineering and Technology (IRJET), Vol. 7, Issue. 4, April 2020, ISSN- 2395-0072.
4. Dhanya M. Ravi, G.Ramya, M.M.V.Dharshini, M.Deekshitha, M.Devi, “Proficient Phonocardiogram Using Bluetooth Module”, Alochana Chakra Journal, Vol. 9, Issue. 6, June 2020, ISSN- 2231-3990.
5. Dhanya M. Ravi, K. Renuka Vijaya Lakshmi, L. Pushpa Ganga Bhavani, P. Sri Satya Abhignya, M.Haritha, “Power Efficient Shift Register Using Leakage Control NMOS Transistor”, Dogo Rangsang Research Journal, Vol. 10, Issue. 6, June 2020, ISSN- 2347-7180.
6. S. Malathi, A V A Prathyusha, D. Jayasree, B. Naveena, A.Madhuri, “Microstrip Patch Antenna Designed Using Frequency Reconfigurability for 5G Applications”, Journal of Engineering Sciences(JES), Vol. 11, Issue no. 6, June 2020, ISSN-0377-9254.
7. D.A. Tatajee, V. Amal Prathyusha, D.Rama Harika, V.Sai Sowjanya, P. Kusumakumari, “Implementation of a Low Power Dissipation and Area Efficient decoder using Mixed Circuit Logic”, Dogo Rangsang Research Journal, Vol. 10, Issue. 6, June 2020, ISSN- 2347-7180.
8. Ch.Anitha Bhavani, G. Jayasri , I. Yamini , A. Aswini , Ch. Shaik Someya, “Analog Pulse Compression Technique with Improved SNR and Reduced Sidelobes” Dogo Rangsang Research Journal , Vol. 10, Issue. 6, June 2020, ISSN- 2347-7180.
9. Ch.Anitha Bhavani, Lavanya.M, Varnika.V, Sailaja.P “Estimating RCS for Perfectly Conducting Sphere at Different Frequencies and RCS Reduction” Alochana Chakra Journal, Vol. 9, Issue. 6, June 2020, ISSN- 2231-3990.
10. T. Sandhya Kumari, K. Leela, M.D.S. Pravallika, M.Roshini, K.Prathyusha, “Performance comparison of image enhancement techniques”, Journal of Engineering Sciences(JES), Vol. 11, Issue no. 6, June 2020, ISSN-0377-9254.
11. M.Revathi, P.Venkata Lakshmi, K.Saisuma, K.poornimapreethi, Ch.Ramesh Babu, “Integrated machine learning with region based active contour models in medical image

- segmentation” JuniKhyat Journal, UGC Care List 1 Journal, Vol 10, Issue 6, No.7, pp 68-72, ISSN 2278-4632, June 2020.
12. B.joshna, Ch.sowmya, J.chandini, B.pradyumna, Ch. Ramesh Babu, “vehicle accident detection system With emergency notification” Alochana Chakra journal, UGC care list 1 journal, Vol. IX, issue VI, no.7, pp 3195-3200, ISSN 2231-3990, June 2020.
  13. JyothsnaPrasanthi, T. Alekhya, P.Rajeswari, V.Roshini,, Ch. Ramesh Babu, “Design and implementation of vehicle Theft and tracking system” Alochana chakra journal, UGC care list 1 journal, vol. Ix, issue vi, no.7, pp 3201-3207, ISSN 2231-3990, June 2020.
  14. B Sai Bharadwaj ,A.Padma Sravya Sri,E.S.L.Santhoshi Devi, D.Dedeepya,G.Leela Subha Lakhmini,"Cardiac Telemetry monitoring of Sensor based Pulse Oximeter", Test engineering and management,83,14271 - 14277, April,2020
  15. B. Sai Bharadwaj, S. Hemanth Sandhya, I. Dhana Lakshmi, G. Damini Priya and V. Tanuja,"Detection of Third Heart Sound Using Intrinsic Time Scale Decomposition", International Journal of Grid and Distributed Computing,13(1),568-576, April,2020.

### **Impact Analysis:**

- Innovative ideas from the students excelling in creativity
- Skills or abilities of students improved
- Modern tools usage improves the adaptability to technology changes.
- Improved teamwork.
- Presentation and communication skills are enhanced

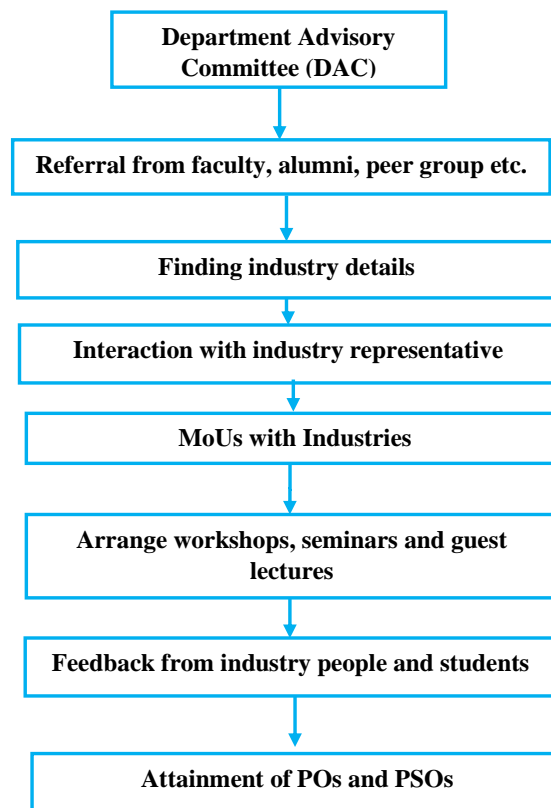
### **2.2.4 Initiatives related to industry interaction (15)**

*(Give details of the industry involvement in the program such as industry-attached laboratories, partial delivery of appropriate courses by industry experts etc. Mention the initiatives, implementation details and impact analysis)*

An engineering student should be technically and globally competent to acquire the opportunities and should also attain the industrial needs. To meet these objectives, it is necessary to provide the students industry exposure and a platform to adapt the technological changes. The department frequently takes necessary measures to fulfill the goals. The Procedure for Industry Interaction is shown in Figure B.2.2.4.a as listed below:

- Initiate tasks by inviting the industrial members for valuable seminars and conference.

- Invite professional HRs and conducted an interaction session personally.
- Encourage the students for industrial visits & training program.
- Interaction with different esteemed industrial experts like APSSDC, NSTL, Steel Plant, CoreEL Technologies, Digital Shark Technologies, QUE Technologies, HT India Labs, SIEMENS and etc.
- Conduct training sessions by industrial experts of latest technologies.
- Collect feedback from experts for progressive conduction of events.
- Feedback assessments are noted from students for further improvement.



**Figure B.2.2.4.a: Procedure for Industry Interaction**

#### **A. Industry Supported Laboratories (5)**

With the advent of globalization and opening up of Indian economy to outside world, competition among industries has become stiff. To solve their engineering problems, they look up now to engineering institutions. Similarly, there is an urgent need to prepare engineering

students for jobs in multinational companies, by exposing them to upcoming technologies and engineering methodologies.

These objectives can only be achieved well by bridging the gap between industry and the academic institutions. Better interaction between technical institutions and industry is the need of the hour. This will have great bearing on the engineering curriculum, exposure of engineering students to industrial atmosphere and subsequent placement of young graduating engineers in industries across the country. The labs established at Vignan's Institute of Engineering for Women are detailed below:

### **I. Andhra Pradesh State Skill Development Corporation (APSSDC) Lab**

Andhra Pradesh State Skill Development Corporation (APSSDC) serves the task of providing skilled manpower as part of Government of Andhra Pradesh skill mission. AP government identified 100 institutes among 276 colleges across the state as their knowledge partners. APSSDC have established a Lab at Vignan's Institute of Engineering for Women to provide internships and training to students in the college. This will help in improving students' technical competency, soft skills and thus employability quotient.

#### **Overview of APSSDC Lab:**

The center has been setup as a step to foster innovation and help instill the startup and research culture in the students as well act as a catalyst of growth by making world class skilled professionals available to key growth sectors for the state and the country. The Lab is equipped with high end configured Acer Laptops in count of 36 laptops provided by APSSDC, and the licenses for the software are provided on Premise. The details of the lab are furnished in Table B.2.2.4a and overview of lab in Figure B. 2.2.4.b.

<b>Infrastructure of the APSSDC Lab</b>	
Capacity of the lab	50 laptops
No. of Laptops Installed	36 Laptops Configuration: Acer, Processor: Intel® core (5-7200 U CPU @2.5 GHz RAM: 16 GB, 64 bit Operating system, Windows10 Hardisk: 500GB
License type	On Premise
UPS	Yes

**Table B.2.2.4.a: APSSDC Lab Details**



**Figure B.2.2.4.b: Overview of APSSDC Lab**

### Objectives of APSSDC Lab:

As per the MoU with VIEW, APSSDC lab will extend the benefits to help the students' in providing training for 1000 students per year at minimal cost and created a platform to organize numerous workshops for students and faculty. The main objectives of the lab are:

- Promoting self-reliance
- Indigenization and technology upgrades
- Improve projects /mini projects developing capabilities of students
- Export the talent in-house at a rapid pace to meet the demands of the industry
- Job assured training (Multi Skill Training Program)

### Utilization of APSSDC Lab:

There are eleven certification programs completed so far in APSSDC Lab from the day of its establishment. The lab utilization details are listed in Table: B.2.2.4b.

Sl. No.	Certification Name	Date	Number of Students attended	Relevance to POs and PSOs
1	Embedded system fundamentals	11-12-2017 to 16-12-2017	162	PO1, PO3, PO4, PO5, PO9, PO11, PO12 PSO1
2	Coursera IoT Certification	14-05-2018 to 02-06-2018	47	PO1, PO3, PO4, PO5, PO9, PO11, PO12 PSO1
3	Coursera IoT Certification	04-09-2018 to 06-12-2018	44	PO1, PO3, PO4, PO5, PO9, PO11, PO12 PSO1

4	SCALE	26-07-2018 to 28-07-2018	45	PO1, PO3, PO4, PO5, PO9, PO11, PO12 PSO1
5	Workshop on Higher Education (Webinar)	22-06-2018	68	PO11, PO12
6	TCS Hackthon	04-07-2018 to 15-07-2018	14	PO1, PO3, PO4, PO5, PO9, PO11, PO12 PSO1
7	C Programming Solving Skills	05-12-2018 to 10-12-2018	57	PO1, PO3, PO4, PO5, PO9, PO11, PO12 PSO1
8	Build Box	26-12-2018 to 10-01-2019	25	PO1, PO3, PO4, PO5, PO9, PO11, PO12 PSO1
9	MSTP (Multi Skill Training Program)	16-08-2019 to 04-03-2020	18	PO1, PO3, PO4, PO5, PO9, PO11, PO12
10	Google android developer phase1	05-03-2020 to 07-03-2020	25	PO1, PO3, PO4, PO5, PO9, PO11, PO12
11	Embedded Systems	01-06-2020 to 13-06-2020	65	PO1, PO3, PO4, PO5, PO9, PO11, PO12 PSO1

**Table B.2.2.4.b: Utilization details of APSSDC Lab**

**Effectiveness of APSSDC Lab:**

- Students are benefitted with hands on experienced training workshops, projects, Nano Degrees of Udacity and Coursera.
- Training programs provide a great opportunity for students to expand their knowledge base and increase their efficiency and productivity.
- Students use their training to keep up with the latest advancements in technology.
- Training and development can help students to perform better in the campus placements as they become more skilled than before.
- Training can update the technical knowledge of the student.
- Students work independently and require less supervision than before.
- Students can use their knowledge from the training to do projects and help other students.
- Students perform better with greater efficiency than before.
- More confidence is built among students and performed well.

## II. Internet of Things (IoT) Lab

Texas Instruments, Bangalore conducted a national level DrishTI online exam to our students to test their technical competency. Around 2300 students participated in this exam and more than 90% of them are qualified. As a token appreciation, Texas Instruments sponsored Teaching labs by procuring latest hardware related to IoT. The students gain hand-on experience with the equipment provided by Texas instruments. The students enhance their knowledge towards developing of IoT applications by gaining knowledge on IoT domain within the campus and to stay ahead of their peers. IoT test bed is an open and developing ecosystem of edge devices, communication protocols, cloud-based platforms and application with a focus on cost-effective IoT technologies.

### Overview of the Lab:

The lab is being utilized for implementing IoT based projects for real time applications. The lab is equipped with hardware kits and software required to carry out simulations. The lab is also equipped with IoT Development board self starting learning kits and various sensors to make the students practically find a solution to real-time issues. The following are the Kits Sponsored by TI kits from STEPS Knowledge services Pvt. Ltd and are used by Department of ECE for academic purpose:

S. No.	Item	Quantity
1	MSP-430 EXP G2 Launch Pad	30
2	MSP-EXP430F5529 Experimenter Board	2
3	RF Booster CC110L	5
4	STEPS Experimental Pack for MSP 430	10
5	MSP-EXP 430F5529LP	10
6	BOOST-DAC8568	2

**Table B.2.2.4.c: Equipment list in Internet of Things (IoT) Lab**

### Objectives of the Lab:


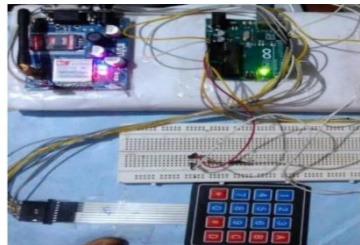
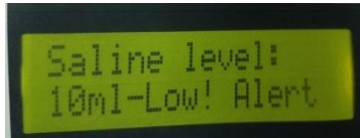
- IoT lab is used to design and develop IoT based real-time projects supporting research activities.
- Develop projects that are cost effective and socially relevant.


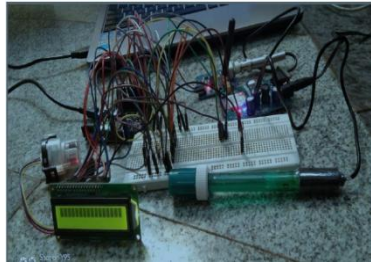
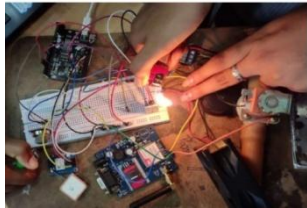


- Students and faculty can utilize IoT test bed available in IoT lab to get hands-on exposure on IoT platform.
- To develop trained manpower through student projects in the field of IoT based application development.

**Utilization of IoT Lab:**

Students developed IoT based projects like Weather Monitoring System, Smart Parking Security, Water Quality Monitoring System and etc., to participate in various technical events. The projects developed in the IoT lab are listed in Table: B.2.2.4.d.

Sl. No.	Student Details	Project Title	Description	Prototype	Relevance to POs and PSOs
1.	Students of IV B Tech II Sem (2017-18) developed this prototype as their project work  14NM1A0412- B. T. Lakshmi 14NM1A0450- K. Annapurna 14NM1A0448- J. Gayathri 14NM1A0453- K. V. Sravani	IoT Based Smart Parking Security System	The system works on ultrasonic sensor and the hardware is controlled by Arduino. If the vehicle belongs to unauthorized user, the ultrasonic sensor detects the vehicle and gives an alert message to authorized user. Smartphone is used for interaction between parking security system and the authorized user.		PO1-PO12 PSO1
2.	Students of IV B Tech II Sem (2017-18) developed this prototype as their project work  14NM1A0463- M. Sirisha 14NM1A0451- K. Uma Devi 14NM1A0433- G. Leelavathi 14NM1A0415- B. G. Lakshmi	IoT Based Infant Abduction Security System	With IoT based infant abduction security system, the manual effort on the part of the nursing staff will be reduced. As the entire proposed system is automated, it requires very less human intervention. It will continuously check the status of the baby and an alert message will be sent to the nurses, doctors, caretakers when the baby is absent.		PO1-PO12 PSO1
3.	Students of IV B Tech II Sem (2017-18) developed this prototype as their project work  14NM1A04F9- R. Mounica 15NM5A0413- S. Adi Lakshmi 14NM1A04E3- K. P. Renuka 15NM5A0409- B. V. Lakshmi	IoT Based smart IV fluid detection	The system is built on the basis of IoT. IR sensor is used to determine the amount of fluid in the saline bottle. Whenever the level of IV fluid reaches to predefined critical value then nurses or caretakers will be alerted through GSM		PO1-PO12 PSO1

			or Buzzer or LCD.		
4.	Students of IV B Tech II Sem (2018-19) developed this prototype as their project work 16NM5A0405- B. Sravani 15NM1A0426- D. S.K. Sravanthi 15NM1A0412-B. Rajani 15NM1A0460- K. G. Madhuri	IoT Based Weather Monitoring System using Raspberry Pi Board.	This project aim is to create a prototype system which employs an embedded system using raspberry pi 3b+ board with a sensehat device for monitoring weather parameters like Temperature, Humidity and Pressure using Internet of things (IOT).		PO1-PO12 PSO1
5.	Students of IV B Tech II Sem (2019-20) developed this prototype as their project work 17NM5A0404- B. Sagarika 16NM1A0405- A. Swathi 16NM1A0426- Ch. D. Lakshmi 16NM1A0443- G. Rajeswary	IoT Based water quality monitoring system	In this project, several sensors are used to measure physical and chemical parameters of the water. The micro controller senses the PH, temperature, conductivity, turbidity values from the sensors and sends them to the Think Speak through the Wi-Fi module and as well as it will be displayed on LCD.		PO1-PO12 PSO1
6.	Students of IV B Tech II Sem (2019-20) developed this prototype as their project work 16NM1A04F2- V. J. Rajeswari 17NM5A0416-K. Santhi Priya 17NM5A0427- S. Firdos 17NM5A0429- S. N. Kousar	IoT Based gas leakage and fire alert system	A GSM and GPS based fire and gas leakage alert system prototype has been designed using Arduino UNO +Wi-Fi R3 Atmega+ ESP8266 board.		PO1-PO12 PSO1

**Table: B.2.2.4.d: Projects developed by students in Internet of Things (IoT) Lab**

**Effectiveness of IoT Lab:**

- IoT lab provided hands on experience to the students to address real time applications.
- Although the projects suggested are of very basic nature but carrying out these give the confidence to take up difficult ones.
- Students develop keen interest to explore various other interdisciplinary courses due to involvement of several varied technologies in IoT.
- Learning of students as a team improved with enhanced inter personnel communication skill.
- Professional ethics and ample opportunity for modern tool usage was improved as students use open source software and resources.

**B. Industry involvement in the program design and partial delivery of any regular courses to students (5)**

- ✓ The Department Advisory Committee (DAC) consults experts from the Industry and Professors from JNTUK and Andhra University to always improve the students in all aspects.
- ✓ In addition, senior engineers from the industry are also consulted for upgrading the students to latest technologies.
- ✓ Workshops, Seminars and Guest Lectures are arranged to improve the student's skills.
- ✓ Involving industry experts in partial delivery of any regular courses to students.
- ✓ MoUs with industries facilitates both the students and faculty an opportunity to understand the concepts in a better way. MOU's was done with industries to emphasize on:
  - Internships
  - Project Works for Students
  - Industrial Visits
  - Students specific training
  - Faculty Development Programs

The tables representing the details of skill development programs by industry experts, soft skill training programs by various experts from MNC companies and talks by Industry experts is listed in the Tables below.

**List of Skill Development courses delivered by Industry experts**

Sl. No	Training Course	Company/ Industry	Resource Person	Date	No. of Students attended	Relevance to POs & PSOs
1	Training on Python Programming	KP Technologies	P. Krishna Prasad, Director	04-07-2019	62	PO3, PO4, PO5, PSO2
2	Cyber HACKING and Malware analysis	Indian Servers	Mr.D.Sai Satish, CEO, Indian Servers	12-09-2019 to 13-09-2019	84	PO1, PO2, PO5
3	Analog & Digital IC Design using MENTOR GRAPHIC Tools	CoreEL Technologies	Mr.B. Nagendra, Application Engineer	29-10-2019 to 03-11-2019	90	PO1, PO2, PO5, PSO1
4	MSTP(Multi Skill Training Program)	APSSDC	M. Gopi, T. Anil Kumar Expert Trainers	16-08-2019 to 04-03-2020	18	PO1, PO2, PO5, PSO2
5	Google android developer phase1	APSSDC	U. Lokesh, B.S. Prasad, Expert Trainers	05-03-2020 to 07-03-2020	25	PO3, PO4, PO5, PSO1, PSO2
6	Training in C, C++, JAVA	DATAPRO, TECHNOSO FT	Mr. Srinivas Rao, Mr. Mohamad Azmal, Technical Trainers	2019	99	PO1, PO2, PO5, PSO2
7	Embedded Systems	APSSDC	Anish, Taj Bhasha Expert Trainers	01-06-2020 to 13-06-2020	93	PO1, PO2, PO5, PSO1
8	Siemens Systems for Robotics	SIEMENS	Mr.A.Ravi Kumar, Multi skill trainer	13-12-2018	53	PO3, PO4, PO5, PSO1
9	SCALE(Student Consortium for Advancement and Learning in Engineering Education)	APSSDC	Shreya Adabala, Sanketh D., Asmitha Rani Expert Trainers	26-07-2018 to 28-07-2018	45	PO6, PO9, PO10, PSO2
10	C Programming Solving Skills	APSSDC	K. Narmala Mani, R. Devi Lalitha, B. Bharagvi, Expert Trainers	5-12-2018 to 10-12-2018	57	PO1, PO2, PO5, PSO2
11	Build Box	APSSDC	T. Ravi Kishore, P. Alluri Raju, Expert Trainers	26-12-2018 to 10-01-2019	25	PO1, PO2, PO5
12	Soft Skills development	Andhra Pradesh Information Technology Academy	Mr Surendranath Mr Phani kumar , APITA Trainers,ESF LABS	20-08-2018 to 25-08-2018	50	PO9, PO10, PO12, PSO2

		Soft Skills Workshop (APITA)				
13	Computational thinking and problem solving skills using C	APSSDC	K. Narmala Mani, R. Devi Lalitha, B. Bharagvi, Expert Trainers	25-02-2019 to 02-03-2019	52	PO3, PO4, PO5, PSO2
14	AI and ML using R-Programming	HT India Labs, Delhi	Deepak Mishra, Manager	29-08-2018 to 01-09-2018	70	PO1, PO2, PO3, PO4, PO5, PSO2
15	PCB Design	QUE Technologies	Mr. Kranthi Kumar Dutta, Managing Director and Design Engineer	30-06-2017 to 01-07-2017	62	PO3, PO5, PSO1, PSO2
16	IoT using MSP-430	Digital Shark Technologies	Mr. P. Rajesh Kumar, Application Engineer	15-02-2017 to 16-02-2017	69	PO3, PO4, PO5, PSO1
17	Internet of Things	APSSDC	Jositha, Chandirani, Expert Trainers	11-12-2017 to 16-12-2017	108	PO1, PO2, PO5, PSO1
18	TCS Hackthon	APSSDC	T.Prabhu Kumari Trainer cum developer	18-12-2017	14	PO3, PO4, PO5, PO6, PO7, PSO2
19	MISSION IGNITITE	IGNITE organization	Suganya, Aptitude Trainer Bhoopathi Raja, Corporate Technical Trainer Sai Prasad- Trainer Mission Ignite	23-04-2018 to 05-05-2018	52	PO1, PO2, PO5

**Table B.2.2.4.e: List of Skill Development courses delivered by Industry experts**

**List of Guest Lectures delivered by Industry Experts**

Sl. No	Course/Topic Name	Resource Person with designation	Date	Relevance to POs & PSOs
1	Two weeks National Level Faculty Development Program sponsored by DST and Organized by National institute for small and medium Enterprises	Dr. P. Satish Dr. PS. Ravindra Mrs. Padmaja Dr. Ch. Govinda Rao	10-02-2020 to 22-02-2020	PO12, PSO1, PSO2
2	Latest trends in Radar systems	Dr. K.S.Ranga Rao, Principal Consultant	14-02-2019	PO12, PSO2
3	Emotional Intelligence	Mr. A. Badrinath	14-2-2019	PO7, PO8

		AGM,	to 15-2-2019	
4	Cloud computing and sales force	Mr.Rama Seshu Pallavajjula, Application Architect, IBM Bangalore	16-08-2019	PO5, PO9, PO12, PSO1
5	Current Market Job and Technology trends	Mr.K.Rajendra Prasad Rao, Application Engineer, Millennium Software Solutions	22-08-2019	PO6, PO7, PO8, PO12, PSO1, PSO2
6	Entrepreneur Development Program in coordination with Software Technology Parks of India	Mr. P. Dubey, Joint Director STPI Mrs. M. Lakshmi, CEO, PATRA Mr. R.L.Narayana, President ITAIP Mrs. P. Neeraja, HR IEMEG	26-11-2019	PO5, PO12
7	Challenges of working Under Water	Sri C.D Malleswar , SC- G , Assoc. Director, NSTL	14-02-018	PO6, PO7, PO12, PSO2
8	Embedded Systems and Networking	Sri.Abraham Varughese, Scientist- G, NSTL	15-02-2018	PO3, PO4, PO5, PO7 PSO1
9	Trends in Communications	Mrs.Nalini Verma, Manager BSNL,	26-02-2018 to 27-02-2018	PO12, PSO2
10	Recent Trends In VLSI	Mr. Vamsi	21-07-2018	PO5, PO12, PSO1
11	5-Day Entrepreneur Development Program in Collaboration with Vignan University	Dr. D. Bhattacharya, VIT Mr. G. Nageswaran, Director, MSME Mr. B. Kalyan Vardhan, Senior coordinator, MSME Mr. K. Satish, CEO 9 Solutions	02-08-2018 to 06-08-2018	PO12
12	Core Electronics & Electromagnetic Interfacing	Dr. B. Subba Rao, Project Director, Sammer Electronics	17-02-2017	PO1, PO2, PO3, PO4, PSO1, PSO2
13	Manifest your dreams	Ms. Maneesha Misra, Senior System Engineer	16-08-2017	PO9, PO10
14	Employability Skills	Mr.Keerthi Sagar Naik,DXC Technologies	24-11-2017	PO10
15	IT trends and Career Development	Sri Gompa Krishna,	01-09-2017	PO10

		Senior Director		
16	Analog IC design	Mr. B. Chakravarthi, INTEL, Bangalore	30-09-2016	PO1, PO2, PO3, PO4, PO5, PSO1

**Table B.2.2.4.f: List of Guest Lectures delivered by Industry Experts**

In order to make our students industry ready, we take the support of various eminent industrialists. They are part of our institute governing body in decision making and framing policies. With the inputs from these members, we encourage our students to take part in industrial tours and training programs. The following is the list of various industrialists who are part of our institute governing body.

**List of industrialists associated with our Institute**

S. No	Name of the Industrialist with designation	Industry	Association with our Institute
1	<b>Dr. CD Malleswar</b> Former Director-NSTL, DRDO Dr Raja Ramanna Distinguished Fellow	Naval Science & Technological Laboratory (DRDO)	Chairman of Governing Body from June 2017 to October 2019
2	<b>Dr V. Bhujanga Rao</b> ISRO Chair Professor Former DG-DRDO- Delhi. Former Director-NSTL Vizag	National Institute of Advances Studies, IISc Campus, Bangalore.	Chairman of Governing Body from November 2019
3	<b>Dr. V. Vizia Saradhi,</b> Former Director	HPCL, Mumbai.	Governing Body Trust Member from June 2017 to October 2019
4	<b>Sri.Venkata Rayulu Bonam,</b> Delivery Project Executive	IBM India (P) Ltd. Hyderabad	Governing Body Member from June 2017
5	<b>Mr.Srikanth Nandigam</b> Head Project Manager	Excel Global Solutions InfoTech Pvt. Ltd. VSEZ, Visakhapatnam	Governing Body Member from June 2017 to October 2019
6	<b>Dr. B. Subba Rao</b> Programe Director,	SAMEER-Centre for Electromagnetic Environmental Effects, Ministry of Electronics & Information Technology, Visakhapatnam	Governing Body Member from June 2017
7	<b>Dr.Archana Sharma</b> Outstanding Scientist Head, PP & EMD	Bhabha Atomic Research Centre (BARC), Mumbai.	Governing Body Trust Member from November 2019



8	<b>Dr.Rishi Verma</b> Scientist-G	BARC, Atchutapuram Visakhapatnam.	Governing Body Member from November 2019
9	<b>Mr.Suresh Kumar Tankala</b> Lead Consultant	Wipro Limited, Visakhapatnam	Governing Body Member from November 2019

**Table B.2.2.4.g: List of industrialists associated with our Institute**

### **C. Impact analysis of industry institute interaction and actions taken thereof (5)**

The Industry-Institute Interaction is highly essential to run longer period for preparing the students, the manpower of world class in the field of science and technology by inculcating the various skills required by the industry, thereby contributing to the economic and social development at large.

Industry institute interaction is effected through

- i. Guest lectures by industry experts
- ii. Membership of industry experts in Institute Governing body
- iii. Membership of industry experts in Department Advisory committee
- iv. Industrial visits by students
- v. Student Project works with the support of industry expert
- vi. Workshops /seminars /guest lecturers make the students gain knowledge on latest technologies and tools and their practices.
- vii. Industry built Labs with modern methodologies provides a practical environment to implement creativity in project work

#### **Impact analysis:**

- Establishment of Industry-Institute Partnership /interaction Cell.
- Organizing Workshops, conferences and symposia with joint participation of the faculty and the industries with students.
- Encouraging engineers from industry to visit the college to deliver lectures.
- Arranging visits of staff members to various industry.
- Professional consultancy by the faculty to industries.
- Industrial testing by faculty & students at site or in laboratory.
- Joint research programmes and field studies by faculty and people from industries.

- Visits of faculties to industry and industry executives to institute to emphasis on latest skills awareness towards industry environment.
- Visits of students to industry to understand the strategic impact of technological development.
- Memoranda of Understanding between the institute and industries to bring the two sides emotionally and strategically closer.
- Human resource development programmes by the faculty for practicing engineers.
- B.Tech. projects work in industries under joint guidance of the faculty and experts from industry.
- Short-term assignment to students/faculty members in industries.
- Visiting faculty/professors from industries.
- Scholarships/fellowships instituted by industries at the Institute for students.
- Practical training of students in industries.

**The list of MOUs with various companies is listed below in Table: B.2.2.4h.**

S.No.	MOU with companies	Description	Date of MoU
1.	Techno Soft Ssolutions(TSS), Visakhapatnam	Imparting training courses	09-01-2012
2.	Globarena Technologies(P) Ltd., Hyderabad	Centre of Excellence for e-resource Development and Deployment Project (CoEeRD)	06-03-2012
3.	Randstad India Limited, Chennai	Providing Job placements	05-04-2013
4.	COIGNEDU & IT Services(P) Ltd., Hyderabad	Imparting Training courses	03-07-2014
5.	M/s. CADD Box solutions, Visakhapatnam	Conducting CAD Training& Certification	19-07-2014
6.	Smart & Soft solutions, Visakhapatnam	Certification Training of Microsoft IT Courses	23-07-2014
7.	Focus Academy for Career Enhancement(FACE), Coimbatore	IBM Specific aptitude cracker programme	02-12-2014
8.	Focus Academy for Career Enhancement(FACE), Coimbatore	Campus placement Cracker programme	14-02-2015
9.	Focus Academy for Career Enhancement(FACE), Coimbatore	Company Specific aptitude cracker programme	06-08-2015
10.	M/s.GRAFX IT Solutions Pvt. Ltd.,	Skill Development Programme	27-08-2015
11.	Leadership 'Foundation', Srikakulam.	Technology incubation Hub	05-01-2016
12.	Talentio solutions India Pvt. Ltd., Hyderabad.	Skill Enhancement Programme	17-02-2016
13.	Focus Academy for Career Enhancement(FACE), Coimbatore	WIZARD IT	03-05-2016

14.	Omni RK Super Specialty Hospital	Health Checkup/Treatment	29-06-2017
15.	Confederation of Indian Industry(CII), Visakhapatnam	Influence inspire and motivation of Students	25-07-2017
16.	APSSDC, Vijayawada	To make qualitative improvements in imparting Technical Skills.	25-07-2017
17.	DataPro, Visakhapatnam	Impart training courses	02-01-2018
18.	Satvat Infosol Pvt. Ltd.,	Infrastructure cum Facility	27-09-2018
19.	APSSDC, CM's Skill Excellence Center	Implement Structured and pragmatic solutions towards skills development	29-07-2019
20.	NSE (NSEIT Limited), Mumbai	Online Examination Service Provide Centre	28-08-2019
21.	NIT, Warangal Electronics and ICT Academy	Organizes various programs to improve the quality of teaching quality of Education	30-08-2019
22.	PARAMARSH Scheme from UGC	Quality Education to the next generation	26-08-2019

**Table B.2.2.4.h: List of MOUs between VIEW and Various Companies**

### **2.2.5: Initiatives related to industry internship/summer training (15)**

*(Mention the initiatives, implementation details and impact analysis)*

Assessment of PO & PSO attainment for the current academic year, feedback analysis from alumni and industrial experts helps us to improve the industry interaction process for the students. Every year the students are motivated to undergo industrial/internship training during semester break for a period of at least two weeks to get industrial exposure. The students with the support of the department approach the industries with a request for seeking training. The acknowledgment received by the industry will be forwarded to head of the institute to get permission to undergo training. A report on the work carried out during the tenure will be provided by the students to the department after successful completion of training. Assessment on training is conducted either by a seminar or by viva-voce. The feedback analysis on the training is collected for taking necessary measures to improve the process.

#### **A. Industrial training/tours for students (3)**

Industrial visit is a self interest and important in a career for a pursuing engineering degree students. It is a part of our institute schedule, mostly seen in professional degree courses. The main purpose of industrial visit is to understand the internal working process and ethics for the students practically. The department level of our institution had figured out that the theoretical

concept is not sufficient for a professional career, thus industrial visit/training is more important for practical knowledge to the students. This industrial visit/training provides an opportunity to gain the concepts practically via interaction, working process.

The details of various industries visited by our students are discussed below:

### **1. Indian Space Research Organization, Sriharikota**

Satish Dhawan Space Centre (SDSC) SHAR, Sriharikota, the Spaceport of India, is responsible for providing Launch Base Infrastructure for the Indian Space Programme.

#### **Overview:**

The department of ECE, VIEW had organized one day visit to Satish Dhawan Space Centre (SDSC) SHAR, Sriharikota, on 25.02.2019, 17.09.2019, and 30.01.2020 for the 3<sup>rd</sup> year and 4<sup>th</sup> year students. The students were accompanied by 3 faculty members. In three visits a total of 252 students visited SHAR.

#### **Type of Industry:**

This centre has the facilities for solid propellant processing, static testing of solid motors, launch vehicle integration and launch operations, range operations comprising telemetry, tracking and command network and mission control centre. The Centre has two launch pads from where the rocket launching operations of PSLV and GSLV are carried out.

SDSC SHAR has a separate launch pad for launching sounding rockets. The centre also provides the necessary launch base infrastructure for sounding rockets of ISRO and for assembly, integration and launch of sounding rockets and payloads.

#### **Planned or Non-Planned Activity:**

All the three visits were pre-planned and took prior permissions from the organization. In all the visits three faculty members accompanied the students. The industrial tour was started one day before the date of visit and students spend one full day in the organization.

#### **Objective:**

- To provide a practical exposure to the students about Space and advancements in Technology.
- To give an idea about the research work carried out in space technology.
- To understand about the carrier prospects in the particular area.
- To educate the students on space assets and application.

## **2. All India Radio (AIR), Visakhapatnam**

All India Radio, Visakhapatnam is an online station from Visakhapatnam (India).

### **Overview:**

The department of Electronics and Communication Engineering, VIEW had organized a one day visit to All India Radio, located at siripuram, Visakhapatnam on 28th June 2018 for the 3rd year students as a part of an event under IETE. Also, students were accompanied with 3 faculty members. The students were taken to the transmitter site which is co-sited with Aakasavani FM-102 station and the receiver station located at Kurmannapalem.

### **Type of Industry:**

All India Radio also referred as Akashvani Visakhapatnam is aired at 102MHz. The AIR always carried news updates in regional languages and also connecting with other state-run radio stations.

### **Planned or Non-Planned Activity:**

The visit was preplanned. The entire group of 65 students was divided into 2 batches to achieve higher level of understanding.

### **Objective:**

- The main aim of the visit is to offer insights to students about the practical application of their theoretical knowledge.
- To provide unique experience for the students to visualize the practical implementation of amplitude modulation & frequency modulation phenomenon.
- To make them to understand various operations happening at recording and editing studios, control rooms and play back studios.

## **3. Radar Station, Visakhapatnam**

India Meteorological Department is one of the oldest organizations in our country. The meteorological observatory was established in the year 1870 at Visakhapatnam, is one of the oldest observatories on the east coast of India taking surface meteorological observations.

### **Overview:**

Industrial visit was carried out at India Meteorological Department Cyclone Warning Centre, Visakhapatnam on 30th June 2018, 1st and 2nd August 2018 especially for IV year ECE students. Overall 150 students of Electronics & Communication Engineering (ECE) branch of 4<sup>th</sup>

B.Tech accompanied by 6 staff members visited “Doppler Weather Radar Station” at Kailasagiri. Mr. Bibiraju, Director for the cyclone warning centre, Visakhapatnam had given a brief description about “Indian Metrological Department”. They had explained the real time capturing of images like high wind capture images, data pictures, charts and prognostic charts from satellites using digital data receiver which is present in warning centre.

#### **Type of Industry:**

The India Meteorological Department Cyclone Warning Centre, Visakhapatnam provides daily updates on local forecast, warning for fisherman, port warning, cyclone warning etc. And also gives a detailed report on cyclone and monsoon.

#### **Planned or Non- Planned Activity:**

The visit was preplanned. The entire group of 150 students was divided into 10 batches and assigned one faculty member to each batch in addition to the overall coordinator.

#### **Objective:**

- The main objective behind the visit was to make student aware about how various activities related to ‘Doppler Weather Radar’ usage and practical knowledge about the automatic radar analysis system as soon as they start their course.
- To make the students to get real time experience as “See & know” is better than “read & learn”.
- To help the students to transfer their theoretical knowledge to practical implication.
- To motivate the students to get into government sectors.

#### **Industrial Visit Details:**

<b>Date of Visit</b>	<b>Place of visit</b>	<b>Number of students</b>	<b>Faculty Coordinator</b>
30-06-2018	All India Radio (AIR), Visakhapatnam	65	Mr. B. Sashikanth
30-06-2018, 01-08-2018 & 02-08-2018	Doppler weather Radar Station, Visakhapatnam	150	Mr. B. Sashikanth
25-02-2019	ISRO SDSC SHAR	62	Mr. Ch. Ramesh Babu
17-09-2019	ISRO SDSC SHAR	95	Mr. Ch. Ramesh Babu
30-01-2020	ISRO SDSC SHAR	95	Mr. Ch. Ramesh Babu

**Table B.2.2.5.a: Industrial Visit Details**



**ISRO Industrial Visit**



**Radar Station Industrial Visit**



**All India Radio Industrial Visit**

**Figure B.2.2.5.a: Students' Industrial Visits**

### **B. Industrial/internship/summer training of more than two weeks and post training assessment (4)**

The students of ECE program are motivated to go for internship at various industries in the summer break of their VI semester. The institute supports students by sanctioning permission to visit industries and gain practical knowledge. The students undergo internship training for a period of one week to a maximum of 20 days. A report on training undergone by the students as a team or as an individual is to be submitted after successful completion of their internship. The training helps them to think innovatively in solving real time problems and implement as

working models. The students' undergone training received stipend from various organizations as shown in table below:

**List of students' received stipend from various Organizations**

S. No	Hired on	Name of the Student	Graduation year	Company name	Stipend
1	25-11-2017	S. Lavanya	2018	AP Janmabhoomi (A Government of Andhra Pradesh Initiative)	Performance Based
2	30-09-2017	A Bhavana	2018	Creation Cradle	Performance Based
3	06-03-2019	P Mounika	2019	Versada Technologies Private Limited	5000 /month
4	28-03-2018	Likhita P	2019	INDIA Redefined	Performance Based
5	12-01-2018	Likhita P	2019	WhizJuniors	3000 /month
6	06-12-2017	K Sravani	2019	AP Janmabhoomi (A Government of Andhra Pradesh Initiative)	Performance Based
7	25-11-2017	D Anusha	2019	AP Janmabhoomi (A Government of Andhra Pradesh Initiative)	Performance Based
8	25-11-2017	Likhita P	2019	AP Janmabhoomi (A Government of Andhra Pradesh Initiative)	Performance Based
9	07-07-2019	Sailaja P	2020	ALHANSAT TECHNOLOGIES (OPC) PRIVATE LIMITED	5000 /month
10	11-06-2018	Priyanka B	2020	Creation Cradle	Performance Based
11	10-08-2020	Priyanka A	2021	Tutree	1000 /month
12	23-06-2020	B Sri Kavya	2021	INDIA Redefined	Performance Based
13	11-06-2020	G V Vijayalakshmi	2021	Hamari Pahchan NGO	500-1000 /month
14	10-06-2020	RYashoda	2021	World Youth Council	Performance Based
15	10-06-2020	M S L Sushmitha	2021	World Youth Council	Performance Based
16	10-06-2020	M Jahnavi Sri Lakshmi	2021	Hamari Pahchan NGO	500-1000 /month
17	08-06-2020	Ch Geetha Rani	2021	World Youth Council	Performance Based
18	30-03-2020	Ch Parimala	2021	INDIA Redefined	Performance Based
19	16-05-2019	Monika K	2021	AKH Innovations	1000 /month
20	28-03-2018	Poojitha N	2021	INDIA Redefined	Performance Based

**Table B.2.2.5.b: List of students' received stipend from various Organizations**



The consolidated table of student internship training details for the last three academic years and the corresponding details of internship training are listed below:

**Consolidated Table:**

<b>Academic Year</b>	<b>Organization</b>	<b>No. of Students</b>
2017-18	BSNL, Visakhapatnam	25
	Steel Plant, Visakhapatnam	41
	NSTL, Visakhapatnam	1
	Airport, Visakhapatnam	2
2018-19	BSNL, Visakhapatnam	3
	Steel Plant, Visakhapatnam	23
	All India Radio Station, Visakhapatnam	16
	BHEL, Visakhapatnam	5
	BHEL, Hyderabad	3
	ONGC ,Rajahmundry	1
	Avantel Limited, Visakhapatnam	3
	SAMEER, Visakhapatnam	9
	NTPC, Visakhapatnam	4
	Port Trust, Visakhapatnam	5
	Air port, Visakhapatnam	15
2019-20	BSNL, Visakhapatnam	15
	Steel Plant, Visakhapatnam	1
	All India Radio Station, Visakhapatnam	24
	BHEL, Visakhapatnam	18
	Port Trust, Visakhapatnam	3
	Air port, Visakhapatnam	4
	BSNL, Vijayawada	1
	NSTL Visakhapatnam	3
	NINL Jaipur	1
	NALCO, Odisha	1
	Hindhustan shipyard	4
BHPV Visakhapatnam	6	
<b>Total number of students completed internships in reputed industries for the last three academic years:2017-18, 2018-19 and 2019-20</b>		<b>225</b>

**Table B.2.2.5.c: Consolidatd list of student Internship from reputed Organizations**

**Student Internships for 2019-20**

Sl. No	Name of the student	Regd.No	Summer Training/Internship Organization	Duration
1	Pratima Yadav	17NM1A04C4	BHPV, Visakhapatnam	Fifteen Days (15-05-2019 to 08-06-2019)
2	Putta Bhavana	17NM1A04C9		
3	R Sri Satya Manojna	17NM1A04D3		
4	Sagi Akhila	17NM1A04E0		
5	Sakalabhaktula Harika	17NM1A04E2		
6	Prasanna Lakshmi	17NM1A04F0		
7	Malla Jahnvi	17NM1A0482	NSTL, Visakhapatnam	Twenty Days (14-05-2019 to 08-06-2019).
8	Sakalabhaktula Harika	17NM1A04E2	BSNL, Visakhapatnam	Twenty Five Days (15-05-2019 to 08-06-2019)
9	Tumpala Lavanya	17NM5A0430		
10	Thota Sirisha	16NM1A04E6		
11	Thadi Sunitha	16NM1A04E3		
12	Gudivada Bhargavi	16NM1A0450		
13	Gouda Manasa	16NM1A0449		
14	Chapala Shaik Someya	16NM1A0422		
15	G.Anjana Druthi	16NM1A0447	BHEL, Visakhapatnam	Fifteen Days (23-05-2019 to 06-06-2019)
16	G.Rajeswary	16NM1A0443		
17	Banki Naveena	16NM1A0412	BHEL, Visakhapatnam	Fifteen Days (13-05-2019 to 27-05-2019)
18	Bathina Sreelekha	16NM1A0415		
19	B S S Sarmishta	16NM1A0420		
20	Duda Lalitha Reddy	16NM1A0433		
21	Vepada Harika	16NM1A04G0	Air Port, Visakhapatnam	Ten Days (01-06-2019 to 09-06-2019)
22	Ippili Yamini	16NM1A0455		
23	Chiriki Divya	17NM5A0407	PortTrust, Visakhapatnam.	Twenty Days (13-05-2019 to 02-06-2019)
24	Kolli Vakula Devi	17NM5A0419		
25	Sikha Hemasree	17NM5A0428		
26	Polarouthu Kavya	17NM1A04C0	BSNL, Visakhapatnam	Two Weeks (20-05-2019 to 05-06-2019)
27	P. Poorna Siva Sai	17NM1A04B5		
28	Reddi Divya Sai	16NM1A04C7	BSNL, Visakhapatnam	Twenty Days (14-05-2019 to 04-06-2019)
29	Siyadri Navya Sudha	16NM1A04D5		
30	Somala Maha Lakshmi	16NM1A04D6		

31	Tatisetty Alekhya	16NM1A04E1		
32	N.Kavya	17NM1A04A2	NSTL, Visakhapatnam	Three Weeks (18-05-2019 to 09-06-2019)
33	B.S. Lalitha Sree	17NM1A0422	All India Radio Station, Visakhapatnam.	Two Weeks (27-05-2019 to 09-06-2019)
34	K.Ramya Sree	17NM1A0460		
35	K.Sai Vinusha	17NM1A0454		
36	B.Jahnavi	17NM1A0419		
37	G.Anusha Vagdevi	17NM1A0440	NALCO, ODISHA	Two Weeks (27-05-2019 to 09-06-2019)
38	M. Bindu Bhagya Sri	17NM1A0490	Hindustan Shipyard Ltd, Visakhapatnam.	15 Days (24-05-2019 to 09-06-2019)
39	M. Kusuma Kumari	17NM1A0494		
40	N Navya Sravani	17NM1A0499		
41	Nallabilli Kavya	17NM1A04A2		
42	Geesala Rajeswary	16NM1A0443	BHEL, Visakhapatnam	15 Days (23-05-2019 to 06-06-2019)
43	G. Anjana Druthi	16NM1A0447		
44	Kosuru Syama Latha	16NM1A0485		
45	G. Anusha Vagdevi	17NM1A0440	All India Radio Station Visakhapatnam.	Two Weeks (27.05.2019 to 09-06-2019).
46	G.Anjanadruthi	16NM1A0447	BHEL, Visakhapatnam	10 Days (28-05-2019 to 06-06-2019)
47	G Thanmai	16NM1A0440		
48	G Rajeshwari	16NM1A0443		
49	K Shyamlatha	16NM1A0485		
50	M .Vimala Dharshini	16NM1A04A4	BHEL, Visakhapatnam.	Fifteen Days
51	Palisetty Abhinandini	16NM1A04B4		
52	P. Venkata Yamini	16NM1A04B5		
53	Pillala Yogitha	16NM1A04B9		
54	P. Ratna Harinya	16NM1A04C0		
55	Ponnaganti Anootha	17NM1A04C1	BSNL, Visakhapatnam	One Week (07-11-2019 to 14-11-2019)
56	Mulakala Harini	17NM1A0495		
57	Choudary Yashaswini	17NM1A0429	All India Radio Station, Visakhapatnam	Ten Days
58	Goka Mounika	17NM1A0441		
59	Kella Sravani	17NM1A0456		
60	Puli Yasodakrishna	17NM1A04C5		
61	Pusarla Sri Divya	17NM1A04C8		
62	Rajana Sinduja	17NM1A04D1		
63	Raparathi Spandhana	17NM1A04D2		

64	Rompalli Yashoda	17NM1A04D7		
65	Ryali Roopa Sri	17NM1A04D9		
66	Samhita Pusapati	17NM1A04E3		
67	Sharifa Shehanaz Khan	17NM1A04E7		
68	Surabhi Prathulya	17NM1A04F3		
69	Teluguntla Supraja	17NM1A04F8		
70	T Nancy Kumari	17NM1A04F9		
71	T Sahitya Bharathi	17NM1A04G0		
72	Thokada Sandhya	17NM1A04G1		
73	V Sai Sushma Sree	17NM1A04G6		
74	V Snehita Katakam	17NM1A04G7		
75	Yekkala Keerthana	17NM1A04G9		
76	S Shehanaz Khan,	17NM1A04E7	Air Port, VSKP	Thirty days (01-05-2020 to 30-05-2020)
77	Ryali Roopa Sri	17NM1A04D9	Air Port, Visakhapatnam.	Thirty days (01-05-2020 to 30-05-2020)
78	D Dedeepya	16NMA0431	BSNL, Visakhapatnam	Two weeks
79	M Harini	17NM1A0495	NSTL, Visakhapatnam	18-05-2019 to 09-06-2019

**Table B.2.2.5.d: Student Internships for 2019-20**

**Student Internships for 2018-19**

Sl. No	Name of the student	Regd.No	Summer Training/Internship Organization	Duration
1	Kata Poornima	16NM5A0415	Steel Plant, Visakhapatnam.	Two weeks (23-04-2018 to 07-05-2018).
2	K SK Maha Lakshmi	16NM5A0412		
3	Challa Divya	16NM5A0406		
4	Masarapu Karishma	16NM5A0419		
5	Kata Poornima	16NM5A0415	Steel Plant, Visakhapatnam	Two weeks (23-04-2018 to 07-05-2018)
6	Sappa Suma	16NM5A0424		
7	Challa Divya	16NM5A0406		
8	Masarapu Karishma	16NM5A0419		
9	Munukoti Priyanka	15NM1A0482	Steel Plant, Visakhapatnam	Two Weeks (23-04-2018 to 07-05-2018)
10	Surada Sunitha	15NM1A04B3		
11	Tatapudi Likhita Rojy	15NM1A04B6		

12	Tekupudi Urmila	15NM1A04B7		
13	Palli Mownica	15NM1A0493		
14	Adduri Hyndhavi	16NM5A0401	All India Radio Station, Visakhapatnam	Two weeks (07-05-2018 to 20-05-2018)
15	BAmrutha Varshini	16NM5A0402		
16	Buskala Sravani	16NM5A0405		
17	Gorle Manisha	16NM5A0409		
18	Kalla Poornima	16NM5A0411		
19	Palli Mownica	15NM1A0493		
20	Kata Poornima	16NM5A0415	Steel Plant, Visakhapatnam	Two weeks (04-06-2018 to 18-06-2018)
21	Challa Divya	16NM5A0406		
22	K S K Maha Lakshmi	16NM5A0412		
23	Kandregula Udayanjali	16NM5A0413	All India Radio Station, Visakhapatnam.	Two weeks (07-05-2018 to 20-05-2018).
24	Mugada Madhavilatha	16NM5A0421		
25	K A Naga Udayasree	16NM5A0417		
26	Dharmala Rohini	16NM5A0408		
27	Koribilli Jhansi	16NM5A0418		
28	Yalla Rupa	16NM5A0428		
29	Ulabala Sujatha	16NM5A0427		
30	Sappa Suma	16NM5A0424		
31	Cherukuru Sowmya	16NM1A0425	BHEL, Hyderabad.	Fifteen Days in the Month of May
32	Bhaddirraju Alekhya	16NM1A0417		
33	Balla Navyasri	16NM1A0409		
34	Gurugubelli Madhuri	15NM1A0440	BHEL, Visakhapatnam	Two weeks (30-04-2018 to 13-05-2018).
35	Kante Suma	15NM1A0452	BSNL, Visakhapatnam	Two Weeks in the Month of May
36	Basangi Sharun Roja	15NM1A0411	ONGC, Rajahmundry	Two Weeks in the Month of May.
37	Gurugubelli Madhuri	15NM1A0440	Avantel Limited, Visakhapatnam	Two Weeks in the Month of May
38	Kante Suma	15NM1A0452		
39	Kovagapu Ramya	15NM1A0462		
40	Munukoti Priyanka	15NM1A0482	SAMEER – CE3, Visakhapatnam.	Four Weeks (02-05-2018 to 30-05-2018)
41	Surada Sunitha	15NM1A04B3		
42	Tekupudi Urmila	15NM1A04B7		
43	Tatapudi Likhita Rojy	15NM1A04B6		
44	Vadamodula Sahithya	15NM1A04B9		

45	Pagadala Chittilakshmi	15NM1A0490		
46	Paila Prathyusha	15NM1A0491		
47	Gogulamudi Pooja	15NM1A0433	Steel Plant, Visakhapatnam	Two weeks in the Month of May
48	Gorle Akhila	15NM1A0437		
49	Gundala Santhi	15NM1A0438		
50	Gundala Sravanthi	15NM1A0439		
51	Jaddu Ammadu	15NM1A0443		
52	Basangi Sharun Roja	15NM1A0411	SAMEER – CE3, Visakhapatnam.	Four Weeks in the Month of May.
53	Buskala Sravani	16NM5A0405		
54	Mungi Aruna Kumari	15NM1A0481	All India Radio Station, Siripuram,	Two weeks (21-05- 2018 to 01-06-2018)
55	Rongali Lohitha	15NM1A04A8		
56	V Thirumala Gayathri	15NM1A04C1	NTPC, Visakhapatnam	Ten Days (01-06-2018 to 10-06-2018)
57	Pchandana Sravani	15NM1A0495		
58	Seelam Jyothi	15NM1A04B1		
59	A Bharathi Lakshmi	15NM1A0405		
60	J G Prathyusha	15NM1A0444	Port Trust, Visakhapatnam.	Two Weeks (June 4 <sup>th</sup> onwards)
61	Gantla Poojitha	15NM1A0431		
62	B K Vijaya Lakshmi	15NM1A0410		
63	Gedela Renuka	15NM1A0432		
64	Jaya Sree Harika V	15NM1A04E4	BHEL, Visakhapatnam.	Fifteen Days (24-05- 2018 to 09-06-2018)
65	S Sai Sagarika	15NM1A04G4		
66	Sireesha Chokkapu	15NM1A04G3		
67	Kanchipati Navya	15NM1A04E5		
68	Challa Divya	16NM5A0406	AIR PORT, Visakhapatnam	Two Weeks in the Month of May.
69	Kalla Poornima	16NM5A0411		
70	Adduri Hyndhavi	16NM5A0401		
71	B L Amrutha Varshini	16NM5A0402		
72	Buskala Sravani	16NM5A0405		
73	Palli Mownica	15NM1A0493	AIRPORT, Visakhapatnam	Two Weeks in the Month of June
74	Maddala Manjusha	15NM1A0464		
75	Majji Poornima	15NM1A0466		
76	M Sravani Sandhya	15NM1A0480		
77	Nandavarapu Susila	15NM1A0486		
78	Pyla Bharathi	15NM1A04A2	Steel Plant, Visakhapatnam	10 Days (08-11-2018 to 18-11-2018)
79	Konathala Jayasri	16NM1A0480		
80	Katta Deepthi	16NM1A0475		

81	Rapaka Ramyasri	16NM1A04C6	BSNL, Visakhapatnam.	Five Days (13-11-2018 to 17-11-2018).
82	Thamma Sai Harshitha	16NM1A04E4		
83	G Damini Priya	16NM1A04G4	Airport, Visakhapatnam.	Fifteen Days (Month of May)
84	K Susmita	16NM1A0478		
85	Shaik Firdos	17NM5A0427		
86	Syed Nayeema Kousar	17NM5A0429		

**Table B.2.2.5.e: Student Internships in 2018-19****Student Internships for 2017-18**

Sl. No	Name of the student	Regd.No	Company Name	Period
1	M. P. S. Gayathri	14NM1A04E9	BSNL, Visakhapatnam	05-05-2017(Two weeks)
2	L. Anusha	14NM1A04E6		
3	M.S.K.Priyanka	14NM1A04E8		
4	P.Harsha Lekha	14NM1A04F5		
5	D Kanaka Durga	15NM5A0406		
6	G. Reshma Priya	15NM5A0408		
7	K. Manikhanta	15NM5A0410		
8	T. Lakshmi	15NM5A0414		
9	M. Umamaheswari	14NM1A0464	BSNL, Visakhapatnam	17-05-2017 (Two weeks)
10	B Divya Jyothi	14NM1A0419		
11	J Gayathri	14NM1A0448		
12	R. Yamini	14NM1A0492	Steel Plant, Visakhapatnam.	18-05-2017 (Two weeks)
13	S. Venkata lakshmi	14NM1A04A1		
14	T S Lakshmi Prasanna	14NM1A04B3	Steel Plant, Visakhapatnam.	18-05-2017 (Two weeks)
15	P. Priyanka Sowjanya	14NM1A0486		
16	B. Nirisha	14NM1A0406	BSNL, Visakhapatnam	19-05-2017 (Two weeks)
17	B Hema Latha	14NM1A0413		
18	Jampa Deepthi	14NM1A0449		
19	K Venkatasri	14NM1A0408	Steel Plant, Visakhapatnam	25-05-2017 (Two weeks)
20	G Reshma	14NM1A04C9		
21	V Vara Lakshmi	14NM1A04B8	Steel Plant, Visakhapatnam	27-05-2017 (Two weeks)
22	I Swathi	13NM1A0460		
23	M Sai Sowjanya	14NM1A04F0		
24	B Anuradha	14NM1A04C5		
25	S Mounika	14NM1A04G3		
26	J.V.N.S. Moulika	14NM1A04H0	BSNL, Visakhapatnam	01-06-2017 ( Two weeks)
27	R.Yamini	14NM1A0492	NSTL, Visakhapatnam.	01-06-2017 ( Two weeks)

28	Vegiraju Divya Janani	14NM1A04H1	BSNL, Visakhapatnam	05-06-2017 (Fifteen days)
29	Yalamanchili Sahithi	14NM1A04H3		
30	Asmanurani	15NM1A04C7	BSNL, Visakhapatnam.	07-11-2017 (Two weeks)
31	Chintada Jeevana Sri	15NM1A04D1		
32	Eathakoti Niharika	15NM1A04D5		
33	G N Bhavani	15NM1A04D6		
34	Garikina Sailaja	15NM1A04D8		
35	Pragada Monalisa	15NM1A04G0		
36	Chukka Shyamala	15NM1A0422	Steel Plant, Visakhapatnam.	08-11-2017 (One week )
37	Gogulamudi Pooja	15NM1A0433		
38	Gundala Santhi	15NM1A0438		
39	Gundala Sravanthi	15NM1A0439		
40	Jaddu Ammadu	15NM1A0443		
41	Dadi Sai Vandana	15NM1A04D2	Steel Plant, Visakhapatnam.	08-11-2017 (One week )
42	Gopiseti Anusha	15NM1A04D9		
43	A Phani Priyanka	15NM1A04C6		
44	Pitta Mamatha	15NM1A04F9		
45	Sakshi Singh	15NM1A04G2	Steel Plant, Visakhapatnam.	08-11-2017 (One week )
46	A E Krishna Sreehitha	15NM1A04C5		
47	Yerra Sireesha	16NM5A0429		
48	T Lakshmi Priyanka	15NM1A04B5	BSNL, Visakhapatnam.	10-11-2017 (two weeks)
49	P Madhu Mounika	15NM1A0494		
50	Nanubolu Sowmya	15NM1A04F3	Steel Plant, Visakhapatnam	24.02.2018 Two Weeks (i.e., 23-04-2018 to 07-05-2018)
51	Nikita Sharma	15NM1A04F5		
52	P V Aparna Chandini	15NM1A04F8		
53	Palla Sandhya	14NM1A0478	Steel Plant, Visakhapatnam	24.02.2018 Two Weeks (i.e., 23-04-2018 to 07-05-2018).
54	Yerra Sireesha	16NM5A0429		
55	Boddepalli .Pujitha	15NM1A04C9		
56	Damineni Lohitha	15NM1A04D3		
57	Nalla Mounika	15NM1A04F2		
58	Pitta Mamatha	15NM1A04F9	Steel Plant, Visakhapatnam	24.02.2018 Two Weeks (i.e., 23-04-2018 to 07-05-2018).
59	Dadi Sai Vandana	15NM1A04D2		
60	Gottimukkala Poojitha	15NM1A04E0		
61	A Phani Priyanka	15NM1A04C6	Steel Plant, Visakhapatnam	24.02.2018 Two Weeks (i.e., 23-04-2018 to 07-05-2018).
62	Sakshi Singh	15NM1A04G2		
63	A E Krishna Sreehitha	15NM1A04C5		
64	Gopiseti Anusha	15NM1A04D9		
65	Muddada Navya Sree	15NM1A04F1		
66	Shaik Karishma Bhanu	16NM5A0426	Steel Plant, Visakhapatnam	14-03-2018 Three Weeks
67	Sushmita Mondal	16NM1A04D8		
68	Pyla Laxmi Prahelika	15NM1A04A3	Airport, Visakhapatnam.	Two weeks in the month of May,2018
69	T Lakshmi Priyanka	15NM1A04B5		

Table B.2.2.5.f: Student Internships in 2017-18




**Post Training Assessment:**

The students after successful completion of the internship training are assessed to test the knowledge gained during the training period. The students are asked to attempt a quiz and are evaluated that helps the department to analyze the significance of training program and to increase the number of such activities for the benefit of students.


**i) Post Training Certification:**

Certification is one of the most important elements of training and essential to increase the uptake and encourage the completion of training. The students are awarded with certificates after the summer training Internship. A sample certificate is shown in Figure B. 2.2.5.b

प्रसार भारती  
भारत का लोक सेवा प्रसारक  
आकाशवाणी  
करतूरीबा मार्ग, सिरिपुरम  
विशाखपट्टणम

  
सत्यमेव जयते

PRASAR BHARATI  
India's Public Service Broadcaster  
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D.Ramakrishna Prasad, IB(E)S  
उप महानिदेशक(इं)/Deputy Director General(E)

स/No.11(12)/2019-E(I)/Trg. दिनांक/Date: 25.11.2019

**प्रमाणपत्र / CERTIFICATE**

प्रमाणित किया जाता है कि विज्ञान इंस्टिट्यूट ऑफ इंजीनीरिंग फ़ार वुमेन, विशाखपट्टणम, के तृतीय वर्ष ई.सी.ई. के छात्रा, **सुश्री वेंकट स्नेहिता.के.**, 17एनएम1ए04जी7, ने आकाशवाणी, विशाखपट्टणम में दिनांक 11.11.2019 से 24.11.2019 तक 2 सप्ताह का औद्योगिक/ परियोजना प्रशिक्षण प्राप्त किया है। इस अवधि के दौरान उन्हें स्टूडियो उपकरणों, 10 कि.वॉट एफ.एम. तथा 100 कि.वॉट मीडियम वेव ट्रांसमीटरों का अध्ययन कराया गया और तत्संबंधी प्रशिक्षण दिलाया गया।

This is to certify that Ms. **Venkata Snehita Katakam**, 17NM1A04G7, 3<sup>rd</sup> Year E.C.E. student of Vignan's Institute of Engineering for Women, Visakhapatnam has undergone an industrial/project training at All India Radio, Visakhapatnam for 2 weeks from 11.11.2019 to 24.11.2019. During this period, she has been given training and familiarization of the studio equipment, 10 kW FM and 100 kW MW Transmitters.

डी.आर. प्रसाद  
(डी.आर.प्रसाद / D.R.PRASAD)  
उप महानिदेशक(इं) / Deputy Director General(E)

**Figure B.2.2.5.b: Sample Certificate for Internship Training**

**Post Training Evaluation:**

- Post Training Evaluation is a very important part of the learning and development process and checks whether the training has had the desired effect.
- Training evaluation ensures that whether students are able to implement their learning in their respective courses.
- The tests and assessments are designed and conducted to all the students who underwent training, and results presented back to the learners to understand their level of training.
- The exam is online in which 10 MCQs are given on the trained topic.
- The students have to give the exam within 1 week after the training.
- The students who have scored at least 50% of marks in the exam only can claim that they have completed their training.

The sample evaluation form for Sameer Electronics is shown in Figure B.2.2.5.c.

The figure displays two side-by-side screenshots of a Google Form titled "GOOGLE FORM QUESTIONS FOR SAMEER, VISAKHAPATNAM".

The left screenshot shows the form's header and input fields:

- Title: GOOGLE FORM QUESTIONS FOR SAMEER, VISAKHAPATNAM
- Required field indicator: \* Required
- Name field: Name \*
- Email field: Email \*
- Section: Quiz Questions
- Question 1: 1. Mention different methods in EMC? \*
- Options for Question 1:
  - earthing
  - Filtering
  - shielding

The right screenshot shows the continuation of the form with more questions:

- Question 2: 2. What are the different methods of EMI Coupling? \*
- Options for Question 2:
  - Radiated way
  - Conducted way
- Question 3: 3. Write any 3 types of Test site / locations? \*
- Options for Question 3:
  - OATS (Open Area Test Site)
  - Shielded Chambers
  - Shielded Anechoic Chamber
  - Reverb chambers
  - TEM cells
  - GTEM cells
- Question 4: 4. What are the different softwares used in Computational electromagnetics? \*
- Options for Question 4:
  - HFSS
  - NEC
  - CST
  - FEKO

**Figure B.2.2.5.c: Sample Evaluation Sheet for Post Internship Training**

The students are also evaluated by sending an evaluation form to the organization they underwent training. They are requested to fill the feedback of the student and reply again. The sample feedback form collected by Steel Plant organization is shown below in Figure B. 2.2.5.d.

SUMMER TRAINING EVALUATION FORM				
Student Name	Student ID	Department	Specialization	
Katta Deepthi	16NM1A0 475	E. C.E.	-	
Company Name	Steel plant, Visakhapatnam			
Address	D.No - 355/A, Sector - G, Uttunagararam, Visakhapatnam			
Area of Specialization	Instrumentation & Telecommunications			
Department	E. C.E.			
Timing Period	From	06/11/2018	Number of Weeks	2
	To	18/11/2018		
Student Training Program Summary:	It was a great experience to be trained, exposed to an industrial platform.			
Student Performance Evaluation	Unsatisfactory	Developing	Satisfactory	Exemplary
Commitment of attendance			✓	
Following the instructions and guidance			✓	
Extent of cooperation		✓		
Ability to understand the work assigned to them				✓
Ability to communicate Effectively			✓	
Ability to work within a group				✓
Ability to work independently				✓
Creativity at work			✓	
Scientific Background			✓	
Overall Evaluation of student				✓
Supervisor Name	Position	Signature		
Mallikarjun Rao	Assistant General Manager (AGM)	M. K. R.		

**Figure B.2.2.5.d: Sample Training Evaluation Sheet**

### C. Impact Analysis of Industrial Training (4)

For the last three years, more than 200 students received training from various industries in and around Visakhapatnam during semester break. The major industries in which students have undergone training are STEEL PLANT, BSNL, AIR, NTPC etc.

- Awareness on recent tools used in industry help them to learn and grab opportunities in various MNC companies.
- Product based projects are implemented by the students.
- Team work, communication skills, soft skills are improved.
- Industry expert interaction helps them to understand the need of applying contextual knowledge to assess societal, health and safety issues.

- The visit to industry helps the student to improve the practical knowledge of the processes and systems.
- Students are motivated towards research based knowledge by improving their degree through higher studies.

Academic Year	No. of Students			
	Participated in Industrial training/ tours	Students product based projects	Students placed	research based projects
2019-20	28	7	12	9
2018-19	46	5	39	12
2017-18	25	1	15	9

**Table B.2.2.5.g: Impact Analysis of Internship Training**

#### **D. Student Feedback on Initiative (4)**

The feedback from the students who have visited the industries for internship/ training is collected and analyzed for further improvement in conducting such activities. The feedback collected helps the department to take necessary measures to improve and increase such activities that benefits the successive student batches. The feedback is collected from the students after successful completion of their training. The feedback analysis conveys that the students are able to:

- Demonstrate the process of networking structure, network management and Telecom services provided by BSNL.
- Describe the electronic measurements and instruments used in Port Trust, Hindustan Shipyard Limited, BHEL, Steel Plant, ONGC and BHPV.
- Discuss the testing of radiation emission and conduction emission as per military and civilian standards at Sameer Electronics Ltd.
- Observe the radiation patterns of various antennas at Avatel Limited.
- Understand the public service broadcasting process, frequency range and bit rate of transmission at All India Radio Station/ Prasar Bharathi, Visakhapatnam.
- Understand the Microprocessor based management system, computer controlled data acquisition systems at NALCO and NTPC.

- Discuss the design and development of underwater weapons, stealth technology at NSTL.
- The process of communication from ground station to aircraft, target tracking etc. at Air Ports Authority Ltd.
- Understand the EMI/ EMC concepts through industrial visit to Andhra Med Tech Zone (AMTz), Visakhapatnam.
- Understand the satellite launch pads, control room process to communicate etc. through ISRO industrial visit.

A sample feedback form for Industry internship/summer training is shown in Figure B.2.2.5d.



**VIGNAN'S INSTITUTE OF ENGINEERING FOR WOMEN**  
Department of Electronics and Communication Engineering

### Internship/ Summer Training Feedback Form

[Training Duration/ Date:

Name of the Industry undergone training:

1. How would you rate the usefulness of the content learnt at training place?  
( 1    2    3    4    5)
2. How would you rate the hands-on experience at training place?  
( 1    2    3    4    5)
3. Did the training program achieve your program objectives?  
( Yes                      No)
4. Was the training above or below your current skill level?  
(Above                      Below              Just right)
5. What did you like best or find most useful about the training?
6. Were your personal learning goals met through this training? If "No," please describe those expectations that were not met.
7. Any other comments/ suggestions?
8. Overall, how would you rate the internship program?  
1. Excellent    2. Very Good              3. Good              4. Satisfactory              5. Poor

**Figure B.2.2.5.e: Feedback form for Industry Internship/Summer Training**

In 2018-19, the number of students completed industrial training in steel plant is 23. The feedback is collected from all the students and consolidated. The consolidated report is given below.

Sl. No	Parameter	Feedback grades				
		5	4	3	2	1
1	Usefulness of the content learnt at training place	18	2	3	-	-
2	Hands on experience at training place	21	2	-	-	-
3	Was the training above or below your current skill level	20	3	-	-	-
4	Overall, how would you rate the internship/training program	17	2	2	1	1
5	Did the training program achieve your program objective	Yes: 22		No: 01		

**Table B.2.2.5.h: Sample form of Industrial Training Feedback Analysis**

<b>Criterion 3</b>	<b>Course Outcomes (CO) and Program Outcomes (PO)</b>	<b>120 M</b>
3.1	Establish the Correlation between the Courses and the Program Outcomes (POs) and Program Specific Outcomes (PSOs)	20M
3.2	Attainment of Course Outcomes	50M
3.3	Attainment of Program Outcomes and Program Specific Outcomes	50M



<b>Criterion 3</b>	<b>Course Outcomes (CO) and Program Outcomes (PO)</b>	<b>120M</b>
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### 3. COURSE OUTCOMES AND PROGRAM OUTCOME (120)

#### 3.1. Establish the Correlation between the Courses and the Program Outcomes (POs) and Program Specific Outcomes (PSOs) (20)

*(Program Outcomes as mentioned in Annexure-1 and Program specific Outcomes as defined by the Program)*

##### 3.1.1. Course Outcomes (COs) (SAR should include course outcomes of one course from each semester of study, however, should be prepared for all courses and made available as evidence, if asked) (05)

Course coordinator, module coordinator and the faculty will draft the outcomes as per the curriculum prescribed by JNTU Kakinada. With the approval of Program Coordinator and Curriculum Review Committee (CRC), the outcomes are finalized. The same is followed if any refinements are required in the outcomes. These outcomes are mapped to POs and PSOs.

The following represents the outcomes of individual course considered one course per semester.

Course Name: <b>Signals &amp; Systems</b> ; Year of Study: <b>2016-17</b> ; Year/Sem: <b>II/I</b>	
<b>C205.1</b>	Describe the characteristics of continuous-time signals and represent using Fourier series.
<b>C205.2</b>	Analyze a signal by applying Fourier transform and interpret the sampling process to reconstruct the sampled signal.
<b>C205.3</b>	Determine the response of a linear system to continuous time signal.
<b>C205.4</b>	Compute the signal characteristics using correlation and convolution functions.
<b>C205.5</b>	Determine the region of convergence of continuous time signals using Laplace transform.
<b>C205.6</b>	Examine the region of convergence of discrete time signals using Z-transform

Course Name: <b>Electronic Circuit Analysis</b> ; Year of Study: <b>2016-17</b> ; Year/Sem: <b>II/II</b>	
<b>C209.1</b>	Represent the parameters of transistor at high frequency in terms of parameters at low frequency.
<b>C209.2</b>	Select the appropriate amplifier for a multistage based on the application.
<b>C209.3</b>	Classify various feedback amplifiers based on input and output connections.

<b>C209.4</b>	Deduce the frequency of oscillations for various low and high frequency oscillators.
<b>C209.5</b>	Distinguish various power amplifiers in terms of their efficiency and distortions.
<b>C209.6</b>	Examine narrow and wideband frequency selectors.

<b>Course Name: Linear IC Applications; Year of Study: 2017-18; Year/Sem: III/I</b>	
<b>C302.1</b>	Examine operating point and gain of the various differential amplifiers.
<b>C302.2</b>	Analyze various parameters of an operational amplifier.
<b>C302.3</b>	Explain various linear and non linear applications of Op-Amp.
<b>C302.4</b>	Analyze the designing of amplifiers and active filters using an Op-amp.
<b>C302.5</b>	Make use of 555 timer to generate waveforms.
<b>C302.6</b>	Design switching circuits for different applications using op amp.

<b>Course Name: Digital Communications; Year of Study:2017-18;Year/Sem: III/II</b>	
<b>C312.1</b>	Distinguish the performance of baseband and pass band transmission of digital signals.
<b>C312.2</b>	Explain various digital modulation techniques
<b>C312.3</b>	Solve the probability of error for various digital modulation techniques.
<b>C312.4</b>	Apply data coding and compression techniques used in various applications.
<b>C312.5</b>	Distinguish different source coding techniques based on their parameters.
<b>C312.6</b>	Express different error detection and correction techniques.

<b>Course Name: Digital Image Processing; Year of Study: 2018-19; Year/Sem: IV/I</b>	
<b>C403.1</b>	Classify different transformation techniques on images.
<b>C403.2</b>	Illustrate spatial and frequency domain filtering on images.
<b>C403.3</b>	Describe image restoration operations/techniques on images.
<b>C403.4</b>	Apply different color conversions and enhancement on color images.
<b>C403.5</b>	Express wavelet based image processing and Image compression.

<b>C403.6</b>	Explain basics of morphological algorithms and Image segmentation techniques.
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Course Name: <b>Low Power IC Design</b> ; Year of Study: <b>2018-19</b> ; Year/Sem: <b>IV/II</b>	
<b>C412.1</b>	Illustrate sources of power dissipation and short channel effect concepts in VLSI Design.
<b>C412.2</b>	Apply Low power design approaches at architectural, system, circuit and mask levels
<b>C412.3</b>	Analyze the power and capacitance of CMOS Circuits at various stages using SPICE simulators.
<b>C412.4</b>	Relate digital CMOS circuits with low power and low voltage techniques.
<b>C412.5</b>	Design digital CMOS circuits with low power and low voltage techniques.
<b>C412.6</b>	Express low voltage, low power techniques in memories and its future scope.

**Table B.3.1.1: Course Outcomes for 2015 admitted batch (R13 Regulations)**

**3.1.2. CO-PO matrices of courses selected in 3.1.1 (six matrices to be mentioned; one per semester from 3rd to 8th semester) (05)**

The mapping of courses with POs and PSOs represent the correlation of the courses with the program. Based on the concept, the outcomes are mapped as 3 (Substantial-High), 2 (Moderate-Medium) and 1(Slight-Low). The following represent the course outcome relation with the PO/PSO for few courses. The table consists of the correlation of the outcomes defined in Sec. 3.1.1 with respect to the Program Outcomes and the PSOs.

Course Name: <b>Signals &amp; Systems</b> ; Year of Study: <b>2016-17</b> ; Year/Sem: <b>II/I</b>												
Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C205.1	2	3	3	-	-	-	-	-	-	3	-	2
C205.2	3	2	2	3	3	-	-	-	-	2	-	2
C205.3	3	2	2	2	3	3	-	-	3	2	-	2
C205.4	3	3	3	3	3	3	-	-	2	2	-	2
C205.5	3	3	2	3	3	2	-	-	2	3	-	2
C205.6	2	3	3	3	2	-	-	-	-	2	-	2
<b>C205</b>	2.67	2.67	2.50	2.80	2.80	2.67	-	-	2.33	2.33	-	2.00

Course Name: <b>Electronic Circuit Analysis</b> ; Year of Study: <b>2016-17</b> ; Year/Sem: <b>II/II</b>												
Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C209.1	3	3	3	2		-	-	-	-	-	-	-
C209.2	3	3	3	3		-	-	-	-	-	-	2
C209.3	2	3	3	-	3	3	3	-	-	3	2	2
C209.4	3	3	3	3	3	2	3	-	-	2	3	2
C209.5	2	3	3	2	2	3	2	-	-	2	2	3
C209.6	3	3	3	3	3	-	-	-	-	-	-	2
<b>C209</b>	2.67	3.00	3.00	2.60	2.75	2.67	2.67	-	-	2.33	2.33	2.20

Course Name: <b>Linear IC Applications</b> ; Year of Study: <b>2017-18</b> ; Year/Sem: <b>III/I</b>												
Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C302.1	3	3	3	3	-	-	-	-	-	-	-	-
C302.2	3	3	3	3	3	3	-	-	-	-	-	2
C302.3	3	3	2	3	2	3	3	3	-	2	-	3
C302.4	3	3	3	3	3	2	3	3	-	-	-	3
C302.5	3	3	3	2	3	2	2	2	-	-	-	2
C302.6	3	3	3	3	3	-	-	-	-	2	-	-
<b>C302</b>	3.00	3.00	2.83	2.83	2.80	2.50	2.67	2.67	-	2.00	-	2.50

Course Name: <b>Digital Communications</b> ; Year of Study: <b>2017-18</b> ;Year/Sem: <b>III/II</b>												
Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C312.1	3	2	3	-	3	-	-	-	-	-	-	2
C312.2	3	3	3	3	2	2	-	-	-	-	-	3
C312.3	3	3	2	2	3	3	3	2	-	-	3	3
C312.4	3	3	3	3	3	-	2	3	-	-	2	3
C312.5	3	3	3	3	3	-	2	2	-	-	-	2
C312.6	3	3	3	3	3	-	-	3	-	-	-	2
<b>C312</b>	3.00	2.83	2.83	2.80	2.83	2.50	2.33	2.50	-	-	2.50	2.50

Course Name: <b>Digital Image Processing</b> ; Year of Study: <b>2018-19</b> ; Year/Sem: <b>IV/I</b>												
Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C403.1	3	2	3	3	3	-	-	-	-	-	-	-
C403.2	3	3	3	3	-	-	-	3	2	-	-	2
C403.3	3	3	2	3	3	3	-	3	3	-	3	3
C403.4	3	3	3	2	3	2	-	2	-	2	2	3
C403.5	3	3	3	3	3	2	-	-	-	3	2	2
C403.6	3	3	3	3	3	3	-	3	-	-	3	2
<b>C403</b>	3.00	2.83	2.83	2.83	3.00	2.50	-	2.75	2.50	2.50	2.50	2.40

Course Name: <b>Low Power IC Design</b> ; Year of Study: <b>2018-19</b> ; Year/Sem: <b>IV/II</b>												
Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C412.1	2	3	-	-	3	-	-	3	-	-	-	-
C412.2	3	2	3	3	3	-	-	3	-	-	-	3
C412.3	3	3	2	3	3	2	2	-	2	-	2	2
C412.4	3	3	3	3	3	2	2	2	1	-	2	3
C412.5	3	3	3	2	3	3	-	3	-	-	2	3
C412.6	3	3	3	3	3	-	-	-	-	-	-	3
<b>C412</b>	2.83	2.83	2.80	2.80	3.00	2.33	2.00	2.75	1.50	-	2.00	2.80

**Table B.3.1.2.a: CO-PO mapping for 2015 admitted Batch (R13 Regulations)**

### CO-PSO matrices of courses selected in 3.1.1

In similar way, the Course to PSO mapping for the admitted batch 2015 is given below as per the following notation. 1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High)

Course Name: <b>Signals &amp; Systems</b> Year of Study: <b>2016-17</b> ; Year/Sem: <b>II/I</b>		
Course Code	PSO1	PSO2
C205.1	-	3
C205.2	-	3
C205.3	-	3

C205.4	2	3
C205.5	2	3
C205.6	-	3
<b>C205</b>	2.00	3.00

Course Name: <b>Electronic Circuit Analysis;</b> Year of Study: <b>2016-17;</b> Year/Sem: <b>II/II</b>		
Course Code	PSO1	PSO2
C209.1	3	3
C209.2	2	3
C209.3	3	3
C209.4	3	3
C209.5	3	3
C209.6	3	3
<b>C209</b>	2.83	3.00

Course Name: <b>Linear IC Applications;</b> Year of Study: <b>2017-18;</b> Year/Sem: <b>III/I</b>		
Course Code	PSO1	PSO2
C302.1	3	3
C302.2	2	3
C302.3	3	3
C302.4	3	3
C302.5	3	3
C302.1	3	3
<b>C302</b>	2.83	3.00

Course Name: <b>Digital Communications;</b> Year of Study: <b>2017-18;</b> Year/Sem: <b>III/II</b>		
Course Code	PSO1	PSO2
<b>C312.1</b>	-	3
<b>C312.2</b>	-	3
<b>C312.3</b>	-	3

<b>C312.4</b>	3	3
<b>C312.5</b>	-	3
<b>C312.6</b>	-	3
<b>C312</b>	3.00	3.00

Course Name: <b>Digital Image Processing;</b> Year of Study: <b>2018-19;</b> Year/Sem: <b>IV/I</b>		
Course Code	PSO1	PSO2
C403.1	-	3
C403.2	-	3
C403.3	-	3
C403.4	-	3
C403.5	-	3
C403.6	-	3
<b>C403</b>	-	3.00

Course Name: <b>Low Power IC Design;</b> Year of Study: <b>2018-19;</b> Year/Sem: <b>IV/II</b>		
Course Code	PSO1	PSO2
C412.1	3	-
C412.2	3	-
C412.3	3	-
C412.4	3	-
C412.5	3	-
C412.6	3	-
<b>C412</b>	3.00	-

**Table B.3.1.2.b: CO-PSO mapping for 2015 admitted Batch (R13 Regulations)**

### 3.1.3. Program Level Course-PO Matrix of all Courses INCLUDING First Year Courses (10)

The following table represents the correlation between individual courses and the Program Outcomes/ Program Specific Outcomes. These values are the average values obtained from the correlation of course outcomes with PO/PSO.

Admitted Batch: 2013												
Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C101	-	-	-	-	-	2.33	2.33	2.33	2.33	3.00	2.50	3.00
C102	3.00	3.00	3.00	3.00	-	3.00	2.50	2.50	-	-	2.50	3.00
C103	2.83	2.67	2.60	2.60	2.50	-	3.00	3.00	-	-	2.60	2.67
C104	3.00	2.67	3.00	3.00	-	3.00	2.75	2.75	-	-	-	2.67
C105	-	-	2.50	-	-	2.00	2.25	2.25	2.25	-	2.33	2.33
C106	2.67	2.50	2.50	2.50	-	2.50	3.00	3.00	3.00	-	3.00	3.00
C107	-	-	-	-	-	2.00	2.00	2.00	3.00	3.00	2.00	3.00
C108	3.00	2.50	2.33	2.33	2.33	2.00	2.00	2.00	2.00	2.00	-	2.00
C109	2.17	2.83	2.83	3.00	3.00	2.67	-	2.60	1.50	-	-	2.67
C110	-	-	-	-	-	2.50	2.33	2.50	2.33	2.50	2.50	3.00
C111	3.00	3.00	3.00	2.33	-	2.33	2.33	2.33	-	-	2.33	3.00
C112	3.00	3.00	2.50	2.50	-	2.50	2.50	2.50	-	-	-	2.50
C113	3.00	3.00	3.00	3.00	2.00	2.50	-	-	-	-	-	-
C114	2.67	2.67	2.50	2.50	2.50	-	-	-	2.50	-	-	2.50
C115	3.00	3.00	3.00	3.00	2.00	2.50	-	-	-	-	-	-
C116	2.67	2.33	-	2.50	2.50	-	2.00	-	2.00	2.00	-	2.00
C117	-	-	-	-	-	2.00	2.00	2.00	3.00	3.00	2.00	3.00
C118	3.00	2.67	2.33	2.33	2.33	-	-	2.33	2.33	-	-	-
C201	3.00	3.00	3.00	3.00	3.00	3.00	2.33	2.50	2.00	2.00	2.83	3.00
C202	2.00	2.50	2.40	2.25	1.00	1.67	2.33	2.50	2.25	1.67	-	2.17
C203	2.00	2.17	2.20	2.25	2.00	2.80	-	1.40	1.75	-	-	1.67
C204	-	-	-	-	-	1.50	3.00	2.00	-	2.50	1.67	2.00
C205	2.00	2.67	2.50	1.75	1.33	2.67	-	-	2.50	1.67	1.33	2.00



C206	2.17	2.67	2.83	2.25	-	-	2.00	-	2.67	-	1.33	-
C207	2.33	3.00	3.00	3.00	-	2.50	-	3.00	2.67	2.50	1.00	2.00
C208	2.33	2.67	2.67	2.00	-	2.50	-	1.67	2.67	2.00	1.50	-
C209	2.33	3.00	3.00	2.20	1.00	2.33	2.00	-	3.00	1.67	2.00	2.40
C210	3.00	3.00	3.00	-	-	3.00	3.00	2.67	2.00	2.00	2.75	2.00
C211	2.00	2.67	2.50	1.75	1.67	2.33	2.00	2.67	3.00	2.00	1.75	2.80
C212	2.17	2.17	2.40	2.00	1.67	-	-	2.00	2.67	1.67	1.75	2.60
C213	2.00	2.50	2.60	2.00	1.50	2.00	2.00	-	2.67	1.67	1.50	1.60
C214	2.17	2.83	2.80	1.75	1.50	1.50	2.00	2.50	2.33	1.75	2.00	2.17
C215	3.00	3.00	3.00	2.00	2.00	2.50	-	2.33	2.00	2.50	1.50	2.00
C216	3.00	2.67	3.00	2.50	2.00	3.00	-	2.50	2.00	2.00	-	2.00
C301	2.17	2.83	3.00	2.20	2.00	-	2.67	1.75	2.75	1.50	2.00	2.20
C302	3.00	2.83	3.00	2.00	1.67	1.33	2.33	2.00	2.50	2.25	1.67	2.25
C303	3.00	2.83	2.17	1.80	1.33	-	2.50	-	2.67	1.40	1.67	2.00
C304	3.00	3.00	2.83	1.80	1.75	2.50	2.75	1.67	3.00	2.00	2.00	2.50
C305	2.17	2.17	2.33	2.20	2.00	1.67	2.25	1.75	2.75	1.50	2.00	2.60
C306	3.00	3.00	3.00	2.33	-	2.00	-	1.67	2.00	2.50	2.50	2.33
C307	3.00	2.33	2.67	2.00	-	2.50	-	2.50	2.50	2.50	2.50	2.00
C308	3.00	2.33	2.67	2.33	2.67	2.50	-	2.33	2.33	1.50	2.50	2.67
C309	-	-	-	-	3.00	2.67	3.00	2.40	3.00	2.50	2.75	2.83
C310	2.33	2.00	2.17	1.67	2.00	2.75	2.25	2.25	2.75	2.67	2.67	2.75
C311	2.83	2.33	2.00	1.33	2.25	2.50	2.33	-	2.75	2.75	2.25	2.80
C312	3.00	2.17	2.17	2.40	2.25	2.50	2.67	1.50	-	-	2.00	2.50
C313	2.83	2.17	1.83	2.25	-	2.33	2.50	1.80	-	2.00	1.75	2.00
C314	2.67	2.17	2.00	1.75	-	2.50	2.67	1.50	-	2.67	2.50	2.67
C315	3.00	2.67	2.33	2.50	2.67	2.50	-	2.33	2.33	2.00	2.50	2.33
C316	3.00	2.33	2.50	2.33	-	-	-	2.00	2.33	2.00	1.00	2.33
C317	3.00	2.33	2.33	2.50	3.00	-	-	2.00	2.33	2.00	2.00	2.33
C318	3.00	3.00	3.00	3.00	1.00	3.00	2.50	3.00	3.00	3.00	3.00	3.00
C401	3.00	2.33	1.67	1.75	2.25	2.33	-	1.75	2.00	-	2.67	2.60

C402	2.83	2.17	1.67	1.67	-	2.50	-	1.50	2.00	-	2.50	2.00
C403	3.00	2.17	1.83	1.60	2.00	2.50	-	1.50	2.50	2.50	2.50	2.40
C404	2.67	2.33	2.00	1.50	-	-	-	2.00	1.50	2.00	2.33	-
C405	2.83	2.17	2.00	2.00	-	2.67	2.20	-	1.60	1.80	2.25	2.33
C406	2.83	2.33	2.17	1.67	-	2.33	2.50	-	2.50	-	2.75	2.25
C407	3.00	2.33	1.67	2.00	2.33	2.50	2.50	1.50	2.50	2.50	2.50	2.33
C408	3.00	2.33	1.67	2.00	-	2.50	-	1.50	2.67	2.00	2.00	2.33
C409	2.83	2.33	2.25	1.80	-	1.75	2.67	1.75	2.00	2.00	2.00	2.25
C410	2.67	2.33	2.33	2.20	-	2.33	2.50	-	2.50	2.50	2.75	2.20
C411	2.83	2.17	2.33	2.17	2.25	2.75	2.50	1.75	2.50	2.50	2.75	2.00
C412	2.83	2.00	2.20	2.00	2.00	2.50	2.50	1.75	2.50	2.50	1.75	2.00
C413	3.00	3.00	3.00	2.50	3.00	3.00	2.25	3.00	3.00	2.50	3.00	3.00

**Table B.3.1.3.a: CO-PO Correlation matrix for 2013 Admitted Batch**

<b>Admitted Batch: 2014</b>												
Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C101	-	-	-	-	-	2.33	2.33	2.33	2.33	3.00	2.50	3.00
C102	3.00	3.00	3.00	3.00	-	3.00	2.50	2.50	-	-	2.50	3.00
C103	2.83	2.67	2.60	2.60	2.50	-	3.00	3.00	-	-	2.60	2.67
C104	3.00	2.67	3.00	3.00	-	3.00	2.75	2.75	-	-	-	2.67
C105	-	-	2.50	-	-	2.00	2.25	2.25	2.25	-	2.33	2.33
C106	2.67	2.50	2.50	2.50	-	2.50	3.00	3.00	3.00	-	3.00	3.00
C107	-	-	-	-	-	2.00	2.00	2.00	3.00	3.00	2.00	3.00
C108	3.00	2.50	2.33	2.33	2.33	2.00	2.00	2.00	2.00	2.00	-	2.00
C109	2.17	2.83	2.83	3.00	3.00	2.67	-	2.60	1.50	-	-	2.67
C110	-	-	-	-	-	2.50	2.33	2.50	2.33	2.50	2.50	3.00
C111	3.00	3.00	3.00	2.33	-	2.33	2.33	2.33	-	-	2.33	3.00
C112	3.00	3.00	2.50	2.50	-	2.50	2.50	2.50	-	-	-	2.50
C113	3.00	3.00	3.00	3.00	2.00	2.50	-	-	-	-	-	-

C114	2.67	2.67	2.50	2.50	2.50	-	-	-	2.50	-	-	2.50
C115	3.00	3.00	3.00	3.00	2.00	2.50	-	-	-	-	-	-
C116	2.67	2.33	-	2.50	2.50	-	2.00	-	2.00	2.00	-	2.00
C117	-	-	-	-	-	2.00	2.00	2.00	3.00	3.00	2.00	3.00
C118	3.00	2.67	2.33	2.33	2.33	-	-	2.33	2.33	-	-	-
C201	3.00	3.00	3.00	3.00	3.00	3.00	2.33	2.50	2.00	2.00	2.83	3.00
C202	2.67	2.50	2.40	2.50	2.00	2.00	2.50	2.50	-	3.00	-	2.17
C203	2.00	2.17	2.20	2.75	2.25	-	-	1.40	1.75	-	-	1.67
C204	-	-	-	-	-	2.50	3.00	2.00	-	2.50	1.67	2.00
C205	2.67	2.67	2.50	2.75	2.25	2.67	-	-	2.33	2.33	-	2.00
C206	3.00	2.67	2.83	2.75	-	-	-	-	-	-	1.00	-
C207	3.00	3.00	3.00	3.00	-	2.50	-	3.00	2.67	3.00	1.00	2.00
C208	3.00	2.67	2.67	2.67	-	2.50	-	2.50	2.67	2.00	1.50	-
C209	2.67	3.00	3.00	2.20	2.25	2.67	2.50	-	-	2.33	2.33	2.20
C210	3.00	3.00	3.00	-	-	3.00	3.00	2.67	2.00	2.00	2.75	2.50
C211	2.33	2.67	2.50	2.50	2.33	2.33	2.00	2.67	-	2.00	-	2.60
C212	2.33	2.17	2.20	2.60	2.33	-	-	2.00	2.67	2.67	2.50	2.60
C213	2.17	2.50	2.60	2.75	2.00	2.00	2.75	-	-	3.00	-	2.80
C214	2.83	2.83	2.80	2.00	1.50	1.50	2.33	2.50	2.33	2.00	-	2.17
C215	3.00	3.00	3.00	3.00	3.00	2.50	-	2.67	2.00	2.50	1.50	2.00
C216	3.00	2.67	3.00	3.00	3.00	3.00	-	2.50	2.00	2.00	-	2.00
C301	3.00	2.83	2.80	2.20	2.50	-	2.67	2.33	2.67	-	2.00	2.80
C302	3.00	2.83	2.80	2.25	2.67	1.33	2.67	2.67	-	2.50	2.00	2.25
C303	3.00	2.83	2.83	2.80	2.33	-	2.67	-	-	2.00	-	2.00
C304	3.00	3.00	2.83	2.80	2.75	2.50	2.67	3.00	-	2.00	2.33	2.50
C305	2.17	2.17	2.33	2.20	2.00	1.67	2.25	2.75	-	-	2.67	2.60
C306	3.00	3.00	3.00	3.00	-	2.00	-	2.33	2.00	2.50	2.50	2.33
C307	3.00	3.00	3.00	3.00	-	2.50	-	2.50	2.50	2.50	2.50	2.00
C308	3.00	3.00	3.00	3.00	3.00	2.50	-	2.33	2.33	2.00	2.50	2.00
C309	-	-	-	-	3.00	2.67	3.00	2.40	3.00	2.50	2.75	2.83

C310	2.33	2.00	2.33	2.80	2.00	2.75	2.75	2.25	-	-	2.67	2.25
C311	2.83	2.83	2.83	2.80	2.50	2.50	2.67	-	-	2.00	2.67	2.60
C312	3.00	2.83	2.83	2.80	2.40	2.50	2.33	2.25	-	-	2.50	2.50
C313	2.83	2.83	2.83	2.75	-	2.67	2.50	1.80	-	-	2.75	2.00
C314	2.67	2.83	2.83	2.50	-	2.75	2.67	2.33	-	-	2.50	2.67
C315	3.00	3.00	3.00	3.00	2.67	2.50	-	2.33	2.33	2.00	2.50	3.00
C316	3.00	3.00	3.00	3.00	-	-	-	2.50	2.33	2.00	-	2.33
C317	3.00	3.00	3.00	3.00	3.00	-	-	2.50	2.33	2.00	2.00	3.00
C318	3.00	3.00	3.00	3.00	3.00	3.00	2.50	3.00	3.00	3.00	3.00	3.00
C401	3.00	2.83	2.83	2.75	2.50	2.67	2.50	2.00	2.00	-	2.67	2.60
C402	2.83	2.83	2.83	2.00	-	2.50	-	2.00	2.00	-	2.50	2.00
C403	3.00	2.83	2.83	2.80	2.67	2.50	-	2.00	2.50	2.50	2.50	2.40
C404	2.67	2.83	2.83	2.50	-	-	-	2.00	1.50	-	2.33	-
C405	2.83	2.83	2.83	2.75	-	2.67	2.33	-	-	2.33	2.25	2.83
C406	2.83	2.83	2.67	2.67	-	2.67	-	-	1.50	-	2.75	2.75
C407	3.00	3.00	3.00	3.00	2.67	2.00	2.50	2.50	2.67	2.50	2.50	3.00
C408	3.00	3.00	3.00	3.00	-	2.50	-	2.50	2.67	2.00	2.00	2.33
C409	2.83	2.83	2.80	2.80	-	2.25	2.00	1.75	1.50	-	-	2.75
C410	2.67	2.67	2.67	2.40	-	2.00	2.50	2.25	1.67	-	2.75	2.60
C411	2.83	3.00	2.83	2.67	2.50	2.50	2.00	2.00	1.67	-	2.75	3.00
C412	2.83	2.83	2.80	2.80	2.67	2.33	2.00	2.00	1.50	-	2.00	2.80
C413	3.00	3.00	3.00	2.50	3.00	3.00	2.25	3.00	3.00	2.50	3.00	3.00

Table B.3.1.3.b: CO-PO Correlation matrix for 2014 Admitted Batch

Admitted Batch: 2015												
Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C101	-	-	-	-	-	2.33	2.33	2.33	2.33	3.00	2.50	3.00
C102	3.00	3.00	3.00	3.00	-	3.00	2.50	2.50	-	-	2.50	3.00
C103	2.83	2.67	2.60	2.60	2.50	-	3.00	3.00	-	-	2.60	2.67

C104	3.00	2.67	3.00	3.00	-	3.00	2.75	2.75	-	-	-	2.67
C105	-	-	2.50	-	-	2.00	2.25	2.25	2.25	-	2.33	2.33
C106	2.67	2.50	2.50	2.50	-	2.50	3.00	3.00	3.00	-	3.00	3.00
C107	-	-	-	-	-	2.00	2.00	2.00	3.00	3.00	2.00	3.00
C108	3.00	2.50	2.33	2.33	2.33	2.00	2.00	2.00	2.00	2.00	-	2.00
C109	2.17	2.83	2.83	3.00	3.00	2.67	-	2.60	1.50	-	-	2.67
C110	-	-	-	-	-	2.50	2.33	2.50	2.33	2.50	2.50	3.00
C111	3.00	3.00	3.00	2.33	-	2.33	2.33	2.33	-	-	2.33	3.00
C112	3.00	3.00	2.50	2.50	-	2.50	2.50	2.50	-	-	-	2.50
C113	3.00	3.00	3.00	3.00	2.00	2.50	-	-	-	-	-	-
C114	2.67	2.67	2.50	2.50	2.50	-	-	-	2.50	-	-	2.50
C115	3.00	3.00	3.00	3.00	2.00	2.50	-	-	-	-	-	-
C116	2.67	2.33	-	2.50	2.50	-	2.00	-	2.00	2.00	-	2.00
C117	-	-	-	-	-	2.00	2.00	2.00	3.00	3.00	2.00	3.00
C118	3.00	2.67	2.33	2.33	2.33	-	-	2.33	2.33	-	-	-
C201	3.00	3.00	3.00	3.00	3.00	3.00	2.33	2.50	2.00	2.00	2.83	3.00
C202	2.67	2.50	2.40	2.75	3.00	2.00	2.50	2.50	-	3.00	-	2.17
C203	2.00	2.17	2.20	2.80	2.75	-	-	1.40	1.75	-	-	1.67
C204	-	-	-	-	-	2.50	3.00	2.00	-	2.50	1.67	2.00
C205	2.67	2.67	2.50	2.80	2.80	2.67	-	-	2.33	2.33	-	2.00
C206	3.00	2.67	2.83	2.75	-	-	-	-	-	-	1.00	-
C207	3.00	3.00	3.00	3.00	-	2.50	-	3.00	2.67	3.00	1.00	2.00
C208	3.00	2.67	2.67	2.67	-	2.50	-	2.50	2.67	2.00	1.50	-
C209	2.67	3.00	3.00	2.60	2.75	2.67	2.67	-	-	2.33	2.33	2.20
C210	3.00	3.00	3.00	-	-	3.00	3.00	2.67	2.00	2.00	2.75	2.50
C211	2.33	2.67	2.50	2.80	2.67	2.33	2.50	2.67	-	2.00	-	2.60
C212	2.33	2.17	2.20	2.80	2.80	-	-	2.00	2.67	2.67	2.50	2.60
C213	2.17	2.50	2.60	2.80	2.67	2.00	2.75	-	-	3.00	-	2.80
C214	3.00	2.83	2.67	2.80	2.83	2.50	2.67	2.67	-	2.00	-	2.17
C215	3.00	3.00	3.00	3.00	3.00	-	-	2.50	2.67	2.00	1.67	2.00

C216	3.00	2.67	2.67	3.00	3.00	-	-	2.50	2.33	2.00	2.00	2.00
C301	2.83	2.83	2.83	2.80	2.75	2.33	2.75	2.67	-	3.00	-	2.75
C302	3.00	3.00	2.83	2.83	2.80	2.50	2.67	2.67	-	2.00	-	2.50
C303	3.00	2.83	2.83	2.83	2.80	-	2.67	-	-	2.00	-	2.00
C304	3.00	3.00	2.83	2.80	2.80	2.50	2.75	3.00	-	2.00	2.33	2.50
C305	2.17	2.17	2.33	2.60	2.67	1.67	2.75	2.75	-	-	2.67	2.60
C306	3.00	3.00	3.00	3.00	-	2.00	-	2.33	2.00	2.50	2.50	2.33
C307	3.00	3.00	3.00	3.00	-	2.50	-	2.50	2.50	2.50	2.50	2.00
C308	3.00	3.00	3.00	3.00	3.00	2.50	-	2.33	2.33	2.00	2.50	2.00
C309	-	-	-	-	3.00	2.67	3.00	2.80	3.00	2.50	2.75	2.83
C310	2.33	2.00	2.33	2.83	2.80	2.75	2.75	2.75	-	-	2.67	2.25
C311	2.83	2.83	2.83	2.83	2.80	2.50	2.67	-	-	2.00	2.67	2.60
C312	3.00	2.83	2.83	2.80	2.83	2.50	2.33	2.50	-	-	2.50	2.50
C313	2.83	2.83	2.83	2.75	-	2.67	2.50	2.40	-	-	2.75	2.00
C314	2.67	2.83	2.83	2.75	-	2.75	2.67	2.33	-	-	2.50	2.67
C315	3.00	3.00	3.00	3.00	3.00	2.50	-	2.67	2.33	2.00	2.50	3.00
C316	3.00	3.00	3.00	3.00	-	-	-	2.50	2.33	2.00	-	2.33
C317	3.00	3.00	3.00	3.00	3.00	-	-	2.50	2.33	2.00	2.00	3.00
C318	3.00	3.00	3.00	3.00	3.00	3.00	2.50	3.00	3.00	3.00	3.00	3.00
C401	3.00	2.83	2.83	2.83	2.80	2.67	2.50	2.75	2.00	-	2.67	2.60
C402	2.83	2.83	2.83	2.00	-	2.50	-	2.50	2.00	-	2.50	2.00
C403	3.00	2.83	2.83	2.83	3.00	2.50	-	2.75	2.50	2.50	2.50	2.40
C404	2.67	2.83	2.83	2.67	-	-	-	2.00	1.50	-	2.33	-
C405	2.83	2.83	2.83	2.83	2.75	2.67	2.33	-	-	2.33	2.25	2.83
C406	2.83	2.83	2.67	2.83	-	2.67	-	-	1.50	-	2.75	2.75
C407	3.00	3.00	3.00	3.00	3.00	2.00	2.50	2.50	2.67	2.50	2.50	3.00
C408	3.00	3.00	3.00	3.00	-	2.50	-	2.50	2.67	2.00	2.00	2.33
C409	2.83	2.83	2.80	2.80	2.67	2.25	2.00	2.75	1.50	-	-	2.75
C410	2.67	2.67	2.67	2.40	-	2.00	2.50	2.75	1.67	-	2.75	2.60
C411	2.83	3.00	2.83	2.67	2.83	2.50	2.00	2.75	1.67	-	2.75	3.00

C412	2.83	2.83	2.80	2.80	3.00	2.33	2.00	2.75	1.50	-	2.00	2.80
C413	3.00	3.00	3.00	2.50	3.00	3.00	2.25	3.00	3.00	2.50	3.00	3.00

**Table B.3.1.3.c: CO-PO Correlation matrix for 2015 Admitted Batch**

**Program Level Course-PSO Matrix of all Courses Including First Year Courses**

<b>Admitted Batch: 2013</b>		
Course	PSO1	PSO2
C101	-	-
C102	-	2.50
C103	-	2.83
C104	2.00	2.25
C105	-	-
C106	-	-
C107	-	-
C108	2.00	2.00
C109	-	-
C110	-	-
C111	-	2.67
C112	2.33	-
C113	-	-
C114	2.00	2.80
C115	2.67	2.83
C116	2.67	2.00
C117	-	-
C118	2.33	2.67
C201	-	-
C202	3.00	2.33
C203	-	-
C204	-	-
C205	2.50	2.83

C206	-	1.75
C207	3.00	2.33
C208	-	2.00
C209	2.33	1.83
C210	-	-
C211	-	3.00
C212	3.00	2.00
C213	-	2.00
C214	-	2.83
C215	3.00	3.00
C216	2.00	3.00
C301	3.00	2.67
C302	2.17	2.83
C303	2.00	2.50
C304	2.17	2.67
C305	-	2.67
C306	2.00	3.00
C307	3.00	3.00
C308	2.33	2.50
C309	-	-
C310	2.00	2.50
C311	-	3.00
C312	2.00	3.00
C313	-	2.83
C314	-	2.80
C315	2.33	2.00
C316	-	3.00
C317	-	3.00
C318	3.00	3.00
C401	2.33	2.00
C402	-	2.60



C403	-	3.00
C404	2.00	-
C405	-	3.00
C406	-	3.00
C407	3.00	-
C408	3.00	3.00
C409	-	3.00
C410	2.80	2.80
C411	3.00	2.33
C412	3.00	-
C413	3.00	3.00

**Table B.3.1.3.d: CO-PSO Correlation matrix for 2013 Admitted Batch**

<b>Admitted Batch: 2014</b>		
Course	PSO1	PSO2
C101	-	-
C102	-	2.50
C103	-	2.83
C104	2.00	2.25
C105	-	-
C106	-	-
C107	-	-
C108	2.00	2.00
C109	-	-
C110	-	-
C111	-	2.67
C112	2.33	-
C113	-	-
C114	2.00	2.80
C115	2.67	2.83
C116	2.67	2.00

C117	-	-
C118	2.33	2.67
C201	-	-
C202	3.00	2.83
C203	-	-
C204	-	-
C205	2.00	3.00
C206	-	2.50
C207	3.00	3.00
C208	-	3.00
C209	2.83	3.00
C210	-	-
C211	-	3.00
C212	3.00	2.83
C213	-	2.83
C214	-	3.00
C215	3.00	3.00
C216	3.00	3.00
C301	3.00	2.83
C302	2.83	3.00
C303	3.00	3.00
C304	2.83	3.00
C305	-	3.00
C306	3.00	3.00
C307	3.00	3.00
C308	3.00	3.00
C309	-	-
C310	3.00	3.00
C311	-	3.00
C312	3.00	3.00
C313	-	3.00

C314	-	2.80
C315	3.00	3.00
C316	-	3.00
C317	-	3.00
C318	3.00	3.00
C401	3.00	3.00
C402	-	2.67
C403	-	3.00
C404	2.50	-
C405	-	3.00
C406	-	3.00
C407	3.00	-
C408	3.00	3.00
C409	-	3.00
C410	2.80	2.80
C411	3.00	2.67
C412	3.00	-
C413	3.00	3.00

**Table B.3.1.3.e: CO-PSO Correlation matrix  
for 2014 Admitted Batch**

<b>Admitted Batch: 2015</b>		
Course	PSO1	PSO2
C101	-	-
C102	-	2.50
C103	-	2.83
C104	2.00	2.25
C105	-	-
C106	-	-
C107	-	-
C108	2.00	2.00
C109	-	-

C110	-	-
C111	-	2.67
C112	2.33	-
C113	-	-
C114	2.00	2.80
C115	2.67	2.83
C116	2.67	2.00
C117	-	-
C118	2.33	2.67
C201	-	-
C202	3.00	2.83
C203	-	-
C204	-	-
C205	2.00	3.00
C206	-	2.50
C207	3.00	3.00
C208	-	3.00
C209	2.83	3.00
C210	-	-
C211	-	3.00
C212	3.00	2.83
C213	-	2.83
C214	-	3.00
C215	3.00	3.00
C216	3.00	3.00
C301	3.00	2.83
C302	2.83	3.00
C303	3.00	3.00
C304	2.83	3.00
C305	-	3.00
C306	3.00	3.00

C307	3.00	3.00
C308	3.00	3.00
C309	-	-
C310	3.00	3.00
C311	-	3.00
C312	3.00	3.00
C313	-	3.00
C314	-	2.80
C315	3.00	3.00
C316	-	3.00
C317	-	3.00
C318	3.00	3.00
C401	3.00	3.00
C402	-	2.67
C403	-	3.00
C404	2.50	-
C405	-	3.00
C406	-	3.00
C407	3.00	-
C408	3.00	3.00
C409	-	3.00
C410	2.80	2.80
C411	3.00	2.67
C412	3.00	-
C413	3.00	3.00

**Table B.3.1.3.f: CO-PSO Correlation matrix for 2015 Admitted Batch**

**3.2. Attainment of Course Outcomes (50)****3.2.1. Describe the Assessment Processes used to gather the Data upon which the Evaluation of Course Outcome is based (10)**

*(Examples of data collection processes may include, but are not limited to, specific exam/tutorial questions, assignments, laboratory tests, project evaluation, student portfolios (A portfolio is a collection of artifacts that demonstrate skills, personal characteristics and accomplishments created by the student during study period), internally developed assessment exams, project presentations, oral exams, etc.)*

The process of course assessment and calculation of course attainments is explained as below. The process includes assessment through marks obtained by the students and feedback survey taken by the respective coordinator on the course outcomes.

**Assessment tools for calculation of Course Outcome Attainment:**

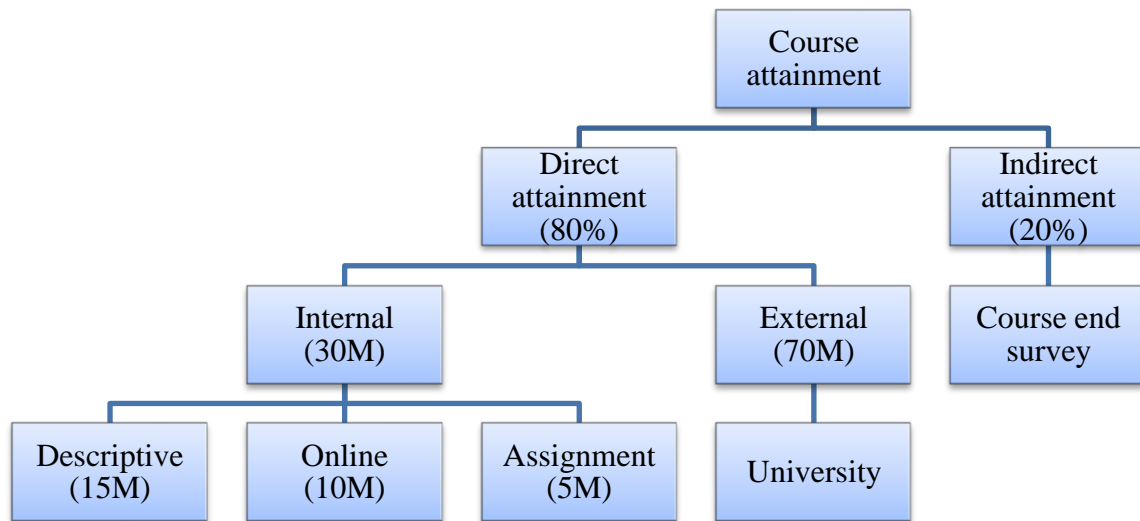
The process of assessment through marks includes:

1. Internal marks (30M)
2. External marks (70M)
3. Course end survey on the respective course outcomes.

**A. Theory assessment:**

Internal Marks:

As prescribed by JNTUK, internal marks are considered from two mid examination marks. The first mid examination covers first three Course Outcomes and the next mid examination covers the next three Course Outcomes. Each mid examination carries 30 marks which are split into:



**Figure B.3.2.1.a: Assessment tools for the calculation of CO attainment for theory course**

**i. Descriptive exam with 15M:**

The questions for descriptive examination are set by the faculty in consultation with the course coordinator. It constitutes of three questions framed using Revised Bloom's Taxonomy with each question carrying equal marks. These questions reflect the Course Outcomes of the course defined by the course coordinator. The answer scripts of the exam are evaluated by the faculty under the supervision of the course coordinator with a scheme of evaluation provided.

**ii. Online exam with 10M:**

The online exam is conducted by the University with twenty multiple choice questions which are to be answered within 20 minutes of duration.

**iii. Student's assignment with 5M:**

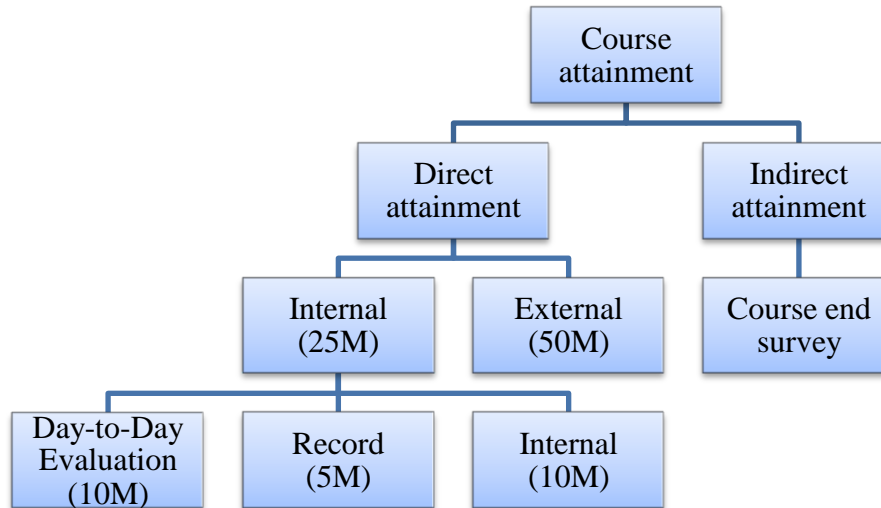
Based on the concepts discussed in the class, few questions like application oriented, problematic, analytical etc. are given as assignment to the students. Assignments are given for all the units and are averaged for the two mid exams.

**External Marks:**

The external marks are obtained from the end exams conducted by JNTU Kakinada. It carries 70M. The overall marks are considered to be uniformly distributed among all the course outcomes of a respective course. These are evaluated by the university. The results are displayed by the University in the website.

**B. Laboratory assessment:**

The marks allotted for laboratory course are 75M, which are distributed as 25M for internal evaluation and 50M for external evaluation. The course attainment of laboratory with respect to the above assessment tools is as described below:



**Figure B.3.2.1.b: Assessment tools for calculation of CO attainment for laboratory course**

**Internal Assessment:**

The internal marks are to be evaluated by the respective faculty through continuous monitoring of the students with respect to the skill and behavior in the lab. The internal marks are split into:

**i. Day to day evaluation with 10M**

The students are regularly monitored with respect to the preparation of the experiments. Based on their performance in conduction of experiment, regularity, viva and the results obtained, ten marks are allotted.

**ii. Record with 5M**

Students will prepare the records after obtaining the valid results for each experiment. On the basis of quality of record preparation and in time submission the marks are allotted.

**iii. Internal exam with 10M**

Internal lab exam is conducted at the end of the course based on the experiments/programs reflecting the course outcomes.

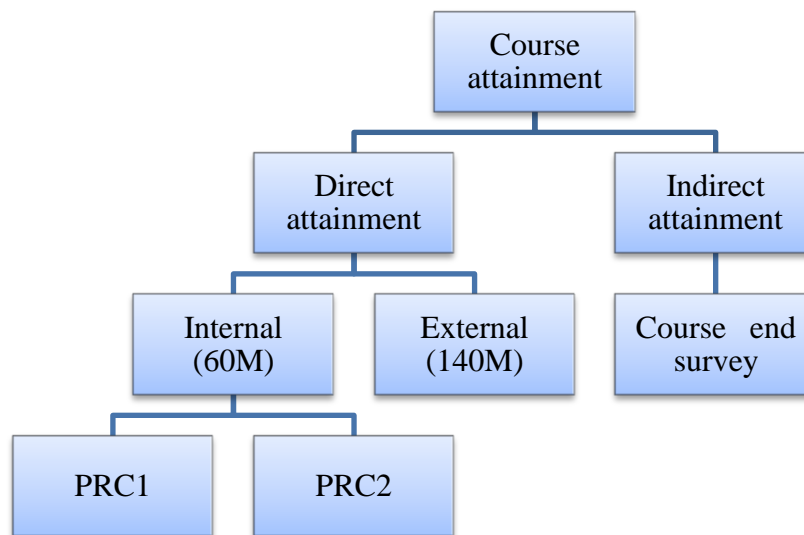


**External Assessment:**

The lab end examination shall be conducted by the concerned faculty and external examiner appointed by JNTUK. This assessment carries 50 marks which are awarded based on the student's practical knowledge in the concerned laboratory.

**C. Project assessment:**

The marks allotted for project are 200M which are split into 60M as internal and 140M as external. Internal reviews are conducted in two stages as Project Review Committee 1 (PRC1) and Project Review Committee 2 (PRC2).



**Figure B.3.2.1.c: Assessment tools for the calculation of CO attainment for Project course**

PRC1 is based on the following parameters:

- Project Description
- Technical Knowledge
- Presentation Skills
- Contribution
- Quality of work

PRC2 is based on the following parameters:

- PRC-1 Justification
- Overall Presentation
- Outputs/Results
- Output/Result verification

External project reviews are conducted in the presence of external examiner which is based on complete project review with design, simulation, results etc. These on a whole produce direct attainment. Course end surveys are taken for indirect attainment.


**D. Seminar assessment:**

The Seminar carries 50M. A evaluation panel consists of coordinator and senior faculties. Each student has to give her own presentation before the panel. The student will be evaluated based on the following points:

- Selection of the topic
- Presentation skills
- Viva
- Quality of seminar document.

**Indirect Assessment:**

A survey on the course outcomes is conducted at the end of the semester, before the University examination. Course coordinator will prepare the questionnaire on the outcomes and will submit the same to Program Assessment Quality Internal Committee (PAQIC). These feedback forms are distributed among the students and are collected by PAQIC. A sample copy of Course End survey form for one course is shown below.


**VIGNAN'S INSTITUTE OF ENGINEERING FOR WOMEN**  
 (Approved by AICTE & Affiliated to JNT University, Kakinada) Estd. 2008  
 ISO 9001:2015, ISO 14001:2015, OHSAS 18001:2007 Certified Institution  
 Kapujaggarajupeta, VSEZ (Post), Visakhapatnam-530 049, Andhra Pradesh, India  
 Phone : 9133300357, 8886066339 :: Fax : 0891-2010485  
 Email : viewvizag@yahoo.com, viewprincipal@gmail.com website : www.vignanview.org

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**Department of Electronics & Communications Engineering**  
**COURSE END SURVEY FORM**

Name of the Faculty: **Mr. P. Gopi Krishna**

Name of the Course	Electronic devices & Circuits	Course Code	C202
Name of the Student	BADAGALA BINDUSHA	Regd. No.	13NM1A0407

**Course Outcomes**

On successful completion of the course the students should able to:

CO1	Determine the fundamental concepts of semiconductor physics.	K3
CO2	Differentiate voltage-current characteristics of various semiconductor devices.	K2
CO3	Distinguish various rectifier circuits based on their parameters.	K2
CO4	Illustrate the behavior of transistor in different configurations.	K3
CO5	Calculate the stability factors for biasing circuits.	K3
CO6	Establish the design aspects of small signal low frequency amplifiers.	K3

Mark a tick '√' in the appropriate cell.  
 (Note: High-3; Medium-2; Low-1)

Course Outcome	Questionnaires	Rating		
CO-1	Are you aware of semiconductor physics concepts?	3 <input checked="" type="radio"/>	2 <input type="radio"/>	1 <input type="radio"/>
CO-2	Can you classify various semiconductor devices according to their characteristics.	3 <input checked="" type="radio"/>	2 <input type="radio"/>	1 <input type="radio"/>
CO-3	Are the concepts of rectifiers clear?	3 <input checked="" type="radio"/>	2 <input type="radio"/>	1 <input type="radio"/>
CO-4	Can you specify the configurations of a transistor based on their characteristics?	3 <input checked="" type="radio"/>	2 <input type="radio"/>	1 <input type="radio"/>
CO-5	Can you derive the stability factors of various biasing circuits of transistors?	3 <input type="radio"/>	2 <input checked="" type="radio"/>	1 <input type="radio"/>
CO-6	Are the design concepts of an amplifier clear?	3 <input type="radio"/>	2 <input checked="" type="radio"/>	1 <input type="radio"/>

**Figure B.3.2.1.d: Sample of course end survey**

### Attainment levels:

Four values of attainment levels are assigned as:

- *Attainment level 1:* If 60% of the total students had achieved the target marks for a course outcome, then the outcome is assigned with Attainment level 1.
- *Attainment level 2:* If 70% of the total students had achieved the target marks for a course outcome, then the outcome is assigned with Attainment level 2.
- *Attainment level 3:* If 80% of the total students had achieved the target marks for a course outcome, then the outcome is assigned with Attainment level 3.

If at least 60% of the total students didn't achieved the target marks for a course outcome, then the outcome is assigned with attainment level 0.

### **Calculation of Course attainment:**

The process of calculating Course Outcome attainment is described below:

1. Marks obtained by the students in Mid-1 and Mid-2 are collected.
2. Marks obtained by each student on each course outcome are calculated.
3. From the assigned attainment levels, the attainment level of each outcome is calculated.
4. The average of attainment levels of all the course outcomes gives the internal attainment level of that course.
5. Attainment level of the external examination is also calculated.
6. According to the weightage given by the University, 30% of the internal attainment and 70% of the external attainment is considered to calculate the direct attainment of that course.
7. Individual faculty will take the course end survey on the course outcomes at the end of every semester to calculate indirect attainment.
8. Hence, 80% of the attainment level obtained through marks and 20% of the attainment level obtained through course end survey, feedbacks, is considered to be the total Course Attainment.

An example of calculating course attainment is described below:

A course from final year, C401, VLSI Design, is considered as example. Course attainment involves direct attainment (DA) and indirect attainment (IA). Direct attainment comprises of mid examinations (descriptive, assignment and online) and External examination.

### **Internal Attainment:**

The following table represents the evaluation of Mid-I. The table consists of total number of students, their marks for individual questions, assignment marks and online marks. Six Course Outcomes were defined for the course in which each CO reflects one unit. Therefore, Mid-I exam covers first three outcomes and Mid-II exam the remaining.

According to mid examination syllabus, CO1 covers Question1 (Q1), Assignment1 (A1) & Online. The total marks of CO1 are the summation of marks obtained in Q1, 1/3<sup>rd</sup> of Online and 1/3<sup>rd</sup> of A1. Similarly, CO2 & CO3 are also calculated.

Target fixed for the internal examination: 60%

Total number of students: 176

Total absentees: 7

Total number of students attended the exam: 169

From the calculation, the marks for each CO are 10. Hence, the target marks will be 6M.

### Mid –1 Evaluation

S.No.	Reg. No.	Student Name	Descriptive			Assignment			Online	Mar ks for CO1	Mar ks for CO2	Mar ks for CO3	Tot al
			Q1	Q2	Q3	A1	A2	A3	Quiz				
			CO1	CO2	CO3	CO1	CO2	CO3					
			5M	5M	5M	5M	5M	5M					
1	14NM1A0401	Adari Mohan Sri Lakshmi	4	4	4	5	5	5	10	9	9	9	27
2	14NM1A0402	Allu Santoshi Kumari	2	5	1	5	5	5	9	6.67	9.67	5.67	22
3	14NM1A0403	Ayyagari Mani Moulika	5	5	5	5	5	5	10	10	10	10	30
	:	:	:	:	:	:	:	:	:	:	:	:	:
	:	:	:	:	:	:	:	:	:	:	:	:	:
174	13NM1A0460	Landa Swathi	5	0	0	5	5	5	5	8.33	3.33	3.33	15
175	14NM5A0416	Mare Chitra	0	0	0	5	5	5	0	1.67	1.67	1.67	5
176	12NM1A0445	Ganji Harika	0	0	0	5	5	5	0	1.67	1.67	1.67	5
		BLOOMS TAXONOMY	Remembering (R)			Analyzing (A)							
			Understanding (U)			Evaluating (E)							
			Applying (P)			Creating (C)							
		Question wise Max Marks	5	5	5	5	5	5	10	CO1	CO2	CO3	
			15			5			10	10	10	10	
		Level / Competance 50% Target	U	P	A	U	A	P		6	6	6	
		CO / Number of students above Target 50%	CO 1	CO 2	CO 3	CO 1	CO 2	CO 3		143	120	98	

**Table B.3.2.1.a: Mid-I evaluation format for course attainment**

Total number of students attained the target for CO1=143

Percentage of students attained CO1= $143/169*100=84.61\%$

From the attainment levels defined above, as the number of students attained  $>80\%$ , the attainment level of CO1 is 3.

Total number of students attained the target for CO2=120

Percentage of students attained CO2= $120/169*100=71\%$

From the attainment levels defined above, as the number of students attained  $>70\%$ , the attainment level of CO2 is 2.

Total number of students attained the target for CO3=98

Percentage of students attained CO3= $98/169*100=57.99\%$

From the attainment levels defined above, as the number of students attained <60%, the attainment level of CO3 is 0.

In a similar manner, from Mid-II exam the attainment levels of CO4, CO5 & CO6 are calculated.

### **External Attainment:**

Collecting the marks from the University, the external attainment is calculated as follows:

Target fixed for External examination: 40%

Total number of students: 176

Total absentees: 2

Total number of students attended the exam: 174

External comprises of 70M. Hence, the target marks will be 28M.

Total number of students attained the target for external examination= 163

Percentage of students attained = $163/174*100=93.67\%$

From the attainment levels defined above, as the number of students attained >80%, the attainment level for External examination is 3.

### **University Exam Assessment**

S.No.	Reg. No.	Student Name	University Exam Marks
			70M
1	14NM1A0401	ADARI MOHAN SRI LAKSHMI	34
2	14NM1A0402	ALLU SANTOSHI KUMARI	38
3	14NM1A0403	AYYAGARI MANI MOULIKA	70
	:	:	:
	:	:	:
175	14NM5A0416	MARE CHITRA	58
176	12NM1A0445	GANJI HARIKA	Absent

**Table B.3.2.1.b: External examination evaluation format for course attainment**

The following figure shows the overall course attainment having tools:

- Internal attainment
- External attainment
- Direct attainment
- Indirect attainment
- Course Attainment

### Course Attainment Calculation

Direct Attainment					Indirect Attainment	
	Mid-I	Mid-II	Internal	University	Feedback	2.53
CO1	3		3	3		
CO2	2		2	3		
CO3	0		0	3		
CO4		3	3	3		
CO5		3	3	3		
CO6		2	2	3		
Average			2.17	3.00		
Weightage			30%	70%		
Attainment			0.65	2.1		
<b>Final Direct Attainment</b>			<b>2.75</b>			
Weightage			80%		20%	
Attainment			2.2		0.506	
<b>Course Attainment</b>			<b>2.706</b>			

**Table B.3.2.1.c: Course attainment template**

The average of attainment levels of CO1, CO2, CO3, CO4, CO5 & CO6 give the internal attainment level. As prescribed by the University, the weightage for internal and external is 30% and 70% respectively.

**Direct attainment:**

Internal attainment = 2.17

External attainment = 3

Direct attainment (DA) =  $0.3 * \text{Internal attainment} + 0.7 * \text{External attainment}$   
 $= 0.65 + 2.1 = 2.75$

**Indirect attainment:**

Feedbacks are collected from at least 70% - 75% of the students on the course outcomes. This is to know how far the students are aware of the outcomes and gained the knowledge regarding these outcomes. The average of all these outcomes results in indirect attainment.

**Course attainment:**

$$\begin{aligned}\text{Course attainment} &= 80\% \text{ of direct attainment} + 20\% \text{ of indirect attainment} \\ &= 80\% \text{ of } 2.75 + 20\% \text{ of } 2.53 \\ &= 2.2 + 0.506 = 2.706.\end{aligned}$$

Similar procedure is followed for all the courses and is displayed in the next section.

**3.2.2. Record the Attainment of Course Outcomes of all Courses with respect to Set Attainment Levels (40)**

Setting the target levels for individual courses, based on the procedure described above, course attainments for outgoing batches of CAYm1, CAYm2 & CAYm3 are displayed below.

<b>Admitted Batch: 2013</b>				
<b>Course</b>	<b>Course Name</b>	<b>Direct Attainment [ 80% ]</b>	<b>Indirect Attainment [ 20%]</b>	<b>Course Attainment</b>
C101	English – I	2.40	0.55	2.95
C102	Mathematics - I	2.12	0.57	2.69
C103	Mathematics – II	2.12	0.57	2.69
C104	Engineering Physics	0.36	0.53	0.89
C105	Professional Ethics and Human Values	2.40	0.53	2.93
C106	Engineering Drawing	2.40	0.51	2.91
C107	English - Communication Skills Lab -1	2.40	0.57	2.97
C108	Engineering Physics Laboratory	2.40	0.55	2.95
C109	Engineering Workshop & IT Workshop	2.40	0.57	2.97



C110	English – II	2.40	0.55	2.95
C111	Mathematics – III	2.28	0.55	2.83
C112	Engineering Chemistry	2.08	0.55	2.63
C113	Engineering Mechanics	0.64	0.55	1.19
C114	Computer Programming	2.24	0.55	2.79
C115	Network Analysis	2.16	0.55	2.71
C116	Engineering Chemistry Laboratory	2.40	0.51	2.91
C117	English - Communication Skills Lab -2	2.40	0.57	2.97
C118	Computer Programming Lab	2.40	0.49	2.89
C201	Managerial Economics and Financial Analysis	2.32	0.51	2.83
C202	Electronic Devices and Circuits	1.72	0.53	2.25
C203	Data Structures	2.08	0.55	2.63
C204	Environmental Studies	2.16	0.55	2.71
C205	Signals & Systems	0.56	0.57	1.13
C206	Electrical Technology	1.80	0.53	2.33
C207	Electronic Devices and Circuits Lab	2.40	0.57	2.97
C208	Networks & Electrical Technology Lab	2.40	0.57	2.97
C209	Electronic Circuit Analysis	1.84	0.57	2.41
C210	Management Science	2.08	0.53	2.61
C211	Random Variables & Stochastic Processes	1.12	0.53	1.65
C212	Switching Theory & Logic Design	1.84	0.57	2.41
C213	EM Waves and Transmission Lines	1.88	0.49	2.37

C214	Analog Communications	1.88	0.49	2.37
C215	Electronic Circuit Analysis Lab	2.40	0.49	2.89
C216	Analog Communications Lab	2.40	0.51	2.91
C301	Pulse & Digital Circuits	1.72	0.53	2.25
C302	Linear IC Applications	1.76	0.57	2.33
C303	Control Systems	1.32	0.59	1.91
C304	Digital System Design & Digital IC Applications	1.16	0.51	1.67
C305	Antennas and Wave Propagation	1.80	0.57	2.37
C306	Pulse & Digital Circuits Lab	2.40	0.47	2.87
C307	LIC Applications Lab	2.40	0.49	2.89
C308	Digital System Design & DICA Lab	2.40	0.47	2.87
C309	IPR& Patents	2.08	0.53	2.61
C310	Microprocessors and Microcontrollers	1.44	0.57	2.01
C311	Digital Signal Processing	1.12	0.55	1.67
C312	Digital Communications	1.88	0.57	2.45
C313	Microwave Engineering	1.84	0.51	2.35
C314	Bio-Medical Engineering	2.00	0.53	2.53
C315	Microprocessors & Microcontrollers Lab	2.40	0.51	2.91
C316	Digital Communications Lab	2.40	0.55	2.95
C317	Digital Signal Processing Lab	2.40	0.53	2.93
C318	Seminar	2.40	0.60	3.00
C401	VLSI Design	2.00	0.55	2.55

C402	Computer Networks	1.96	0.57	2.53
C403	Digital Image Processing	2.00	0.55	2.55
C404	Computer Architecture & Organization	2.08	0.57	2.65
C405	Radar Systems	1.80	0.57	2.37
C406	Optical Communication	1.84	0.57	2.41
C407	V L S I Lab	2.40	0.49	2.89
C408	Microwave Engineering Lab	2.40	0.51	2.91
C409	Cellular Mobile Communication	1.80	0.57	2.37
C410	Electronic Measurements & Instrumentations	1.96	0.53	2.49
C411	Embedded systems/Satellite Comm.	2.24	0.49	2.73
C412	Low Power IC Design	1.84	0.51	2.35
C413	Project & Seminar	2.40	0.60	3.00

**Table B.3.2.2.a: Course-PO Attainment for 2013 Admitted Batch**

<b>Admitted Batch: 2014</b>				
<b>Course</b>	<b>Course Name</b>	<b>Direct Attainment [ 80% ]</b>	<b>Indirect Attainment [ 20% ]</b>	<b>Course Attainment</b>
C101	English – I	2.36	0.51	2.87
C102	Mathematics - I	1.80	0.51	2.31
C103	Mathematics – II	1.52	0.51	2.03
C104	Engineering Physics	0.76	0.51	1.27
C105	Professional Ethics and Human Values	2.40	0.51	2.91
C106	Engineering Drawing	1.84	0.51	2.35

C107	English - Communication Skills Lab -1	2.40	0.49	2.89
C108	Engineering Physics Laboratory	2.40	0.49	2.89
C109	Engineering Workshop& IT Workshop	2.40	0.49	2.89
C110	English – II	2.40	0.51	2.91
C111	Mathematics – III	2.00	0.51	2.51
C112	Engineering Chemistry	0.60	0.51	1.11
C113	Engineering Mechanics	1.68	0.51	2.19
C114	Computer Programming	1.84	0.51	2.35
C115	Network Analysis	1.28	0.51	1.79
C116	Engineering Chemistry Laboratory	2.40	0.49	2.89
C117	English - Communication Skills Lab -2	2.40	0.49	2.89
C118	Computer Programming Lab	2.40	0.49	2.89
C201	Managerial Economics and Financial Analysis	1.52	0.51	2.03
C202	Electronic Devices and Circuits	1.12	0.51	1.63
C203	Data Structures	1.88	0.51	2.39
C204	Environmental Studies	2.08	0.51	2.59
C205	Signals & Systems	1.12	0.51	1.63
C206	Electrical Technology	1.76	0.51	2.27
C207	Electronic Devices and Circuits Lab	2.40	0.49	2.89
C208	Networks & Electrical Technology Lab	2.40	0.49	2.89
C209	Electronic Circuit Analysis	2.00	0.51	2.51
C210	Management Science	2.24	0.51	2.75

C211	Random Variables & Stochastic Processes	0.64	0.51	1.15
C212	Switching Theory & Logic Design	1.24	0.51	1.75
C213	EM Waves and Transmission Lines	1.88	0.51	2.39
C214	Analog Communications	2.08	0.51	2.59
C215	Electronic Circuit Analysis Lab	2.40	0.49	2.89
C216	Analog Communications Lab	2.40	0.49	2.89
C301	Pulse & Digital Circuits	1.84	0.51	2.35
C302	Linear IC Applications	1.84	0.51	2.35
C303	Control Systems	1.80	0.51	2.31
C304	Digital System Design & Digital IC	1.40	0.51	1.91
C305	Antennas and Wave Propagation	1.28	0.51	1.79
C306	Pulse & Digital Circuits Lab	2.40	0.49	2.89
C307	LIC Applications Lab	2.40	0.49	2.89
C308	Digital System Design & DICA Lab	2.40	0.49	2.89
C309	IPR& Patents	2.12	0.51	2.63
C310	Microprocessors and Microcontrollers	1.96	0.51	2.47
C311	Digital Signal Processing	1.96	0.51	2.47
C312	Digital Communications	1.96	0.51	2.47
C313	Microwave Engineering	1.36	0.51	1.87
C314	Bio-Medical Engineering	1.28	0.51	1.79
C315	Microprocessors and Microcontrollers Lab	2.40	0.49	2.89
C316	Digital Communications Lab	2.40	0.49	2.89

C317	Digital Signal Processing Lab	2.40	0.49	2.89
C318	Seminar	2.40	0.60	3.00
C401	VLSI Design	2.20	0.51	2.71
C402	Computer Networks	2.08	0.51	2.59
C403	Digital Image Processing	1.48	0.51	1.99
C404	Computer Architecture & Organization	2.08	0.51	2.59
C405	Radar Systems	1.44	0.51	1.95
C406	Optical Communication	2.00	0.51	2.51
C407	V L S I Lab	2.40	0.49	2.89
C408	Microwave Engineering Lab	2.40	0.49	2.89
C409	Cellular Mobile Communication	1.76	0.51	2.27
C410	Electronic Measurements and Instrumentations	1.88	0.51	2.39
C411	Embedded systems/Satellite Comm.	2.08	0.51	2.59
C412	Low Power IC Design	1.72	0.51	2.23
C413	Project & Seminar	2.40	0.60	3.00

**Table B.3.2.2.b: Course-PO Attainment for 2014 Admitted Batch**

<b>Admitted Batch: 2015</b>				
<b>Course</b>	<b>Course Name</b>	<b>Direct Attainment [ 80% ]</b>	<b>Indirect Attainment [ 20% ]</b>	<b>Course Attainment</b>
C101	English – I	2.28	0.57	2.85
C102	Mathematics - I	0.84	0.58	1.42
C103	Mathematics – II	1.16	0.57	1.73

C104	Engineering Physics	1.20	0.57	1.77
C105	Professional Ethics and Human Values	2.20	0.58	2.78
C106	Engineering Drawing	1.80	0.59	2.39
C107	English - Communication Skills Lab -1	2.40	0.55	2.95
C108	Engineering Physics Laboratory	2.40	0.59	2.99
C109	Engineering Workshop & IT Workshop	2.40	0.57	2.97
C110	English – II	2.00	0.57	2.57
C111	Mathematics – III	0.76	0.57	1.33
C112	Engineering Chemistry	1.84	0.57	2.41
C113	Engineering Mechanics	2.00	0.57	2.57
C114	Computer Programming	1.52	0.57	2.09
C115	Network Analysis	0.72	0.57	1.29
C116	Engineering Chemistry Laboratory	2.40	0.57	2.97
C117	English - Communication Skills Lab -2	2.40	0.58	2.98
C118	Computer Programming Lab	2.40	0.57	2.97
C201	Managerial Economics and Financial Analysis	2.32	0.54	2.86
C202	Electronic Devices and Circuits	1.04	0.57	1.61
C203	Data Structures	1.12	0.57	1.69
C204	Environmental Studies	2.08	0.58	2.66
C205	Signals & Systems	1.12	0.59	1.71
C206	Electrical Technology	1.96	0.55	2.51
C207	Electronic Devices and Circuits Lab	2.40	0.57	2.97

C208	Networks &Electrical Technology Lab	2.40	0.58	2.98
C209	Electronic Circuit Analysis	1.48	0.55	2.03
C210	Management Science	2.28	0.55	2.83
C211	Random Variables & Stochastic Processes	1.28	0.53	1.81
C212	Switching Theory & Logic Design	0.68	0.54	1.22
C213	EM Waves and Transmission Lines	0.68	0.57	1.25
C214	Analog Communications	2.12	0.53	2.65
C215	Electronic Circuit Analysis Lab	2.40	0.55	2.95
C216	Analog Communications Lab	2.40	0.49	2.89
C301	Pulse & Digital Circuits	1.64	0.59	2.23
C302	Linear IC Applications	2.20	0.57	2.77
C303	Control Systems	2.24	0.55	2.79
C304	Digital System Design & Digital IC	2.16	0.53	2.69
C305	Antennas and Wave Propagation	1.00	0.57	1.57
C306	Pulse & Digital Circuits Lab	2.40	0.57	2.97
C307	LIC Applications Lab	2.40	0.59	2.99
C308	Digital System Design & DICA Lab	2.40	0.53	2.93
C309	IPR& Patents	2.32	0.57	2.89
C310	Microprocessors and Microcontrollers	1.48	0.57	2.05
C311	Digital Signal Processing	1.80	0.54	2.34
C312	Digital Communications	2.20	0.55	2.75
C313	Microwave Engineering	1.96	0.57	2.53



C314	Bio-Medical Engineering	1.92	0.57	2.49
C315	Microprocessors and Microcontrollers Lab	2.40	0.57	2.97
C316	Digital Communications Lab	2.40	0.57	2.97
C317	Digital Signal Processing Lab	2.40	0.56	2.96
C318	Seminar	2.40	0.60	3.00
C401	VLSI Design	1.96	0.55	2.51
C402	Computer Networks	2.04	0.56	2.60
C403	Digital Image Processing	2.00	0.55	2.55
C404	Computer Architecture & Organization	1.96	0.54	2.50
C405	Radar Systems	2.08	0.56	2.64
C406	Optical Communication	2.16	0.53	2.69
C407	V L S I Lab	2.40	0.57	2.97
C408	Microwave Engineering Lab	2.40	0.57	2.97
C409	Cellular Mobile Communication	2.00	0.57	2.57
C410	Electronic Measurements and Instrumentations	1.72	0.58	2.30
C411	Embedded systems/Satellite Comm.	2.04	0.57	2.61
C412	Low Power IC Design	1.92	0.57	2.49
C413	Project & Seminar	2.40	0.60	3.00

**Table B.3.2.2.c: Course-PO Attainment for 2015 Admitted Batch**

### **3.3. Attainment of Program Outcomes and Program Specific Outcomes (50)**

#### **3.3.1. Describe Assessment Tools and Processes Used for Measuring the Attainment of each of the Program Outcomes and Program Specific Outcomes (10)**

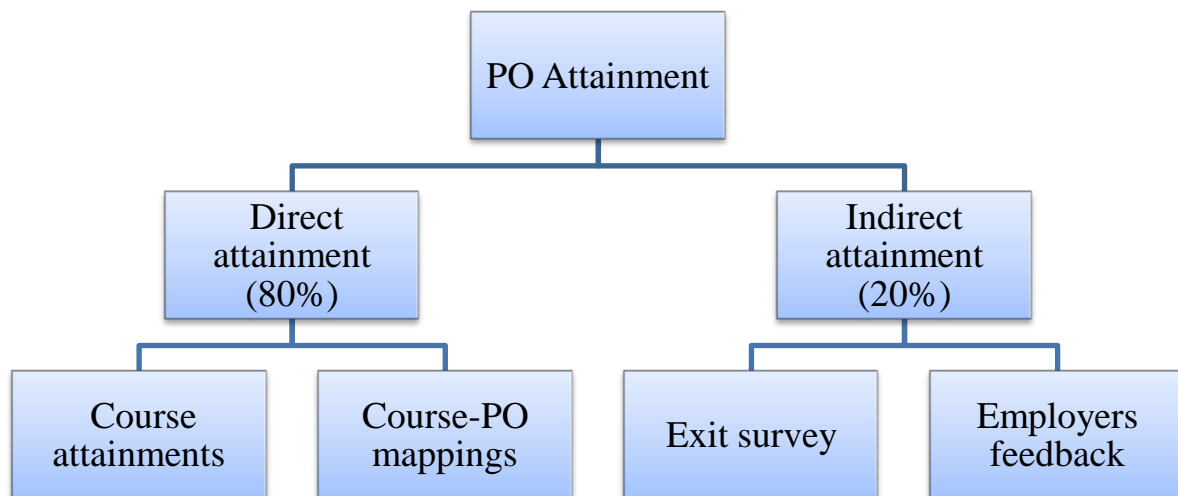
*(Describe the assessment tools and processes used to gather the data upon which the evaluation of each of the Program Outcomes and Program Specific Outcomes is based indicating the frequency with which these processes are carried out. Describe the assessment processes that demonstrate the degree to which the Program Outcomes and Program Specific Outcomes are attained and document the attainment levels)*

The attainment procedure of Program Outcomes comprises direct and indirect assessments. The direct assessment is a process of calculating direct attainment through the marks obtained by the students in all the courses. Indirect assessment is a process of collecting feedbacks from stakeholders on the program outcomes.

#### **Attainment tools for calculation of POs and PSOs:**

The tools for the calculation of attainments are:

- Course attainments of all the courses for a complete batch
- Correlation matrix, as displayed in Sec. 3.1.3., for all the courses.
- Results of surveys conducted which add indirect attainment in the calculation.



**Figure B.3.3.1.a: Assessment tools for the calculation of PO attainment**

#### **Direct Attainment:**

The direct attainment of Program Outcome is the collection of all the course attainments with the assessment process as described below:

1. Course-PO mapping tables, as indicated in Sec.3.1.2, for all the courses are collected from the respective course coordinators.
2. Course attainment values, as described in Sec. 3.2.1, for all the courses are collected from the respective course coordinators.
3. From the above values, Course-PO attainment values are calculated using,

$$\text{Course\_PO attainment} = \frac{(\text{Course\_PO mapping}) * (\text{Course attainment})}{3}$$

4. The average of all these attainments with respect to individual POs is calculated. This gives the direct PO attainment.

The following shows the Course-PO attainment with respect to C401, VLSI Design. The average of mappings of all the outcomes gives the Course-PO mapping of VLSI Design. Using the formula mentioned in the previous procedure, Course-PO attainment values.

### Course PO Mapping and Attainment

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3		3	3				2	
CO2	3	3		3								3
CO3	3	3		2	2	3						3
CO4	3	3	3	3	2				1		2	2
CO5	3	3	3	3	3	2	3		2		2	2
CO6	3	3	3	3	3	3	3					3
Average	3.00	2.83	3.00	2.83	2.50	2.75	3.00		2.50		2.00	2.60
Course PO Attainment	2.71	2.56	2.71	2.56	2.26	2.48	2.71		1.35		1.8	2.35

**Table B.3.3.1: Course-PO attainment template**

#### **Indirect Attainment:**

Various surveys are conducted on Program Outcomes. Feedbacks are taken from few stakeholders like students (to a large extent) and employer (to a small extent). Opinions of these stakeholders are collected in a grading scale of 3 (Substantial or High) to 1 (Slight or Low). Average of all the feedbacks given by the stake holders are considered to be indirect attainment values.

**PO attainment calculation:**

1. For the final PO attainment values, 80% of the direct attainment value and 20% of indirect attainment value are considered.
2. The similar procedure is followed for the calculation of PSO attainment.

**3.3.2. Provide Results of Evaluation of each PO & PSO (40)**

The Program Outcome and Program Specific Outcome attainments are displayed for CAYm1 (2018-19), CAYm2 (2017-18) and CAYm3 (2016-17). The process is as described in Sec. 3.3.1. The target values are set for 2.4 for knowledge based Pos and 2.2 for skill and behavior based POs for CAYm1. For CAYm2 the target values are fixed as 2.3 for knowledge based POs and 2.1 for skill and behavior based POs. The target values are set for 2.2 for knowledge based Pos and 2.0 for skill and behavior based POs for CAYm3. The targets for PSOs are set same as the knowledge based POs for CAYm1, CAYm2 and CAYm3.

Admitted Batch: 2013 ; Assessment Year: CAYm3 (2016-17)												
Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C101	-	-	-	-	-	2.29	2.29	2.29	2.29	2.95	2.46	2.95
C102	2.69	2.69	2.69	2.69	-	2.69	2.24	2.24	-	-	2.24	2.69
C103	2.54	2.39	2.33	2.33	2.24	-	2.69	2.69	-	-	2.33	2.39
C104	0.89	0.79	0.89	0.89	-	0.89	0.82	0.82	-	-	-	0.79
C105	-	-	2.44	-	-	1.95	2.19	2.19	2.19	-	2.28	2.28
C106	2.59	2.43	2.43	2.43	-	2.43	2.91	2.91	2.91	-	2.91	2.91
C107	-	-	-	-	-	1.98	1.98	1.98	2.97	2.97	1.98	2.97
C108	2.95	2.46	2.29	2.29	2.29	1.97	1.97	1.97	1.97	1.97	-	1.97
C109	2.14	2.80	2.80	2.97	2.97	2.64	-	2.57	1.48	-	-	2.64
C110	-	-	-	-	-	2.18	2.03	2.18	2.03	2.18	2.18	2.61
C111	2.79	2.79	2.79	2.17	-	2.17	2.17	2.17	-	-	2.17	2.79
C112	2.61	2.61	2.18	2.18	-	2.18	2.18	2.18	-	-	-	2.18
C113	1.21	1.21	1.21	1.21	0.81	1.01	-	-	-	-	-	-
C114	2.50	2.50	2.34	2.34	2.34	-	-	-	2.34	-	-	2.34
C115	2.71	2.71	2.71	2.71	1.81	2.26	-	-	-	-	-	-
C116	2.59	2.26	-	2.43	2.43	-	1.94	-	1.94	1.94	-	1.94

C117	-	-	-	-	-	1.98	1.98	1.98	2.97	2.97	1.98	2.97
C118	2.89	2.57	2.25	2.25	2.25	-	-	2.25	2.25	-	-	-
C201	2.83	2.83	2.83	2.83	2.83	2.83	2.20	2.36	1.89	1.89	2.67	2.83
C202	1.50	1.87	1.80	1.69	0.75	1.25	1.75	1.87	1.69	1.25	-	1.62
C203	1.75	1.90	1.93	1.97	1.75	2.45	-	1.23	1.53	-	-	1.46
C204	-	-	-	-	-	1.36	2.71	1.81	-	2.26	1.51	1.81
C205	0.75	1.00	0.94	0.66	0.50	1.00	-	-	0.94	0.63	0.50	0.75
C206	1.68	2.07	2.20	1.75	-	-	1.55	-	2.07	-	1.04	-
C207	2.31	2.97	2.97	2.97	-	2.48	-	2.97	2.64	2.48	0.99	1.98
C208	2.31	2.64	2.64	1.98	-	2.48	-	1.65	2.64	1.98	1.49	-
C209	1.87	2.41	2.41	1.77	0.80	1.87	1.61	-	2.41	1.34	1.61	1.93
C210	2.61	2.61	2.61	-	-	2.61	2.61	2.32	1.74	1.74	2.39	1.74
C211	1.10	1.46	1.37	0.96	0.92	1.28	1.10	1.46	1.65	1.10	0.96	1.54
C212	1.74	1.74	1.93	1.61	1.34	-	-	1.61	2.14	1.34	1.40	2.09
C213	1.58	1.98	2.05	1.58	1.19	1.58	1.58	-	2.11	1.32	1.19	1.26
C214	1.71	2.24	2.21	1.38	1.19	1.19	1.58	1.98	1.84	1.38	1.58	1.71
C215	2.89	2.89	2.89	1.93	1.93	2.41	-	2.25	1.93	2.41	1.45	1.93
C216	2.91	2.59	2.91	2.43	1.94	2.91	-	2.43	1.94	1.94	-	1.94
C301	1.63	2.13	2.25	1.65	1.50	-	2.00	1.31	2.06	1.13	1.50	1.65
C302	2.33	2.20	2.33	1.55	1.29	1.04	1.81	1.55	1.94	1.75	1.29	1.75
C303	1.91	1.80	1.38	1.15	0.85	-	1.59	-	1.70	0.89	1.06	1.27
C304	1.67	1.67	1.57	1.00	0.97	1.39	1.53	0.93	1.67	1.11	1.11	1.39
C305	1.71	1.71	1.84	1.74	1.58	1.32	1.78	1.38	2.17	1.19	1.58	2.05
C306	2.87	2.87	2.87	2.23	-	1.91	-	1.59	1.91	2.39	2.39	2.23
C307	2.89	2.25	2.57	1.93	-	2.41	-	2.41	2.41	2.41	2.41	1.93
C308	2.87	2.23	2.55	2.23	2.55	2.39	-	2.23	2.23	1.44	2.39	2.55
C309	-	-	-	-	2.61	2.32	2.61	2.09	2.61	2.18	2.39	2.47
C310	1.56	1.34	1.45	1.12	1.34	1.84	1.51	1.51	1.84	1.78	1.78	1.84
C311	1.58	1.30	1.11	0.74	1.25	1.39	1.30	-	1.53	1.53	1.25	1.56
C312	2.45	1.77	1.77	1.96	1.84	2.04	2.18	1.22	-	-	1.63	2.04
C313	2.22	1.69	1.43	1.76	-	1.82	1.96	1.41	-	1.56	1.37	1.56

C314	2.25	1.83	1.69	1.48	-	2.11	2.25	1.27	-	2.25	2.11	2.25
C315	2.91	2.59	2.26	2.43	2.59	2.43	-	2.26	2.26	1.94	2.43	2.26
C316	2.95	2.29	2.46	2.29	-	-	-	1.97	2.29	1.97	0.98	2.29
C317	2.93	2.28	2.28	2.44	2.93	-	-	1.95	2.28	1.95	1.95	2.28
C318	3.00	3.00	3.00	3.00	1.00	3.00	2.50	3.00	3.00	3.00	3.00	3.00
C401	2.55	1.98	1.42	1.49	1.91	1.98	-	1.49	1.70	-	2.27	2.21
C402	2.39	1.83	1.40	1.40	-	2.11	-	1.26	1.69	-	2.11	1.69
C403	2.55	1.84	1.56	1.36	1.70	2.13	-	1.28	2.13	2.13	2.13	2.04
C404	2.36	2.06	1.77	1.33	-	-	-	1.77	1.33	1.77	2.06	-
C405	2.24	1.71	1.58	1.58	-	2.11	1.74	-	1.27	1.42	1.78	1.85
C406	2.27	1.87	1.74	1.34	-	1.87	2.01	-	2.01	-	2.21	1.81
C407	2.89	2.25	1.61	1.93	2.25	2.41	2.41	1.45	2.41	2.41	2.41	2.25
C408	2.91	2.26	1.62	1.94	-	2.43	-	1.46	2.59	1.94	1.94	2.26
C409	2.24	1.84	1.78	1.42	-	1.38	2.10	1.38	1.58	1.58	1.58	1.78
C410	2.22	1.94	1.94	1.83	-	1.94	2.08	-	2.08	2.08	2.29	1.83
C411	2.58	1.97	2.12	1.97	2.05	2.50	2.28	1.59	2.28	2.28	2.50	1.82
C412	2.22	1.57	1.72	1.57	1.57	1.96	1.96	1.37	1.96	1.96	1.37	1.57
C413	3.00	3.00	3.00	2.50	3.00	3.00	2.25	3.00	3.00	2.50	3.00	3.00
<b>Direct Attain (DA)</b>	2.29	2.15	2.09	1.87	1.76	2.03	2.00	1.89	2.08	1.88	1.88	2.06
<b>Indirect Attain. (IA)</b>	2.25	2.65	2.75	2.65	2.74	2.1	2.15	2.25	2.3	2.5	2.45	2.1
<b>80% of DA</b>	1.83	1.72	1.67	1.50	1.41	1.62	1.60	1.51	1.67	1.51	1.50	1.65
<b>20% of IA</b>	0.45	0.53	0.55	0.53	0.55	0.42	0.43	0.45	0.46	0.50	0.49	0.42
<b>PO Attain. (0.8*DA+0.2*IA)</b>	2.28	2.25	2.22	2.03	1.96	2.04	2.03	1.96	2.13	2.01	1.99	2.07

Table B.3.3.2.a: PO-Course Attainment for 2013 Admitted Batch

Admitted Batch: 2014 ; Assessment Year: CA Ym2 (2017-18)												
Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C101	-	-	-	-	-	2.23	2.23	2.23	2.23	2.87	2.39	2.87
C102	2.31	2.31	2.31	2.31	-	2.31	1.92	1.92	-	-	1.92	2.31
C103	1.91	1.80	1.76	1.76	1.69	-	2.03	2.03	-	-	1.76	1.80
C104	1.27	1.13	1.27	1.27	-	1.27	1.16	1.16	-	-	-	1.13

C105	-	-	2.42	-	-	1.94	2.18	2.18	2.18	-	2.26	2.26
C106	2.09	1.96	1.96	1.96	-	1.96	2.35	2.35	2.35	-	2.35	2.35
C107	-	-	-	-	-	1.93	1.93	1.93	2.89	2.89	1.93	2.89
C108	2.89	2.41	2.25	2.25	2.25	1.93	1.93	1.93	1.93	1.93	-	1.93
C109	2.09	2.73	2.73	2.89	2.89	2.57	-	2.50	1.45	-	-	2.57
C110	-	-	-	-	-	2.29	2.14	2.29	2.14	2.29	2.29	2.75
C111	2.51	2.51	2.51	1.95	-	1.95	1.95	1.95	-	-	1.95	2.51
C112	1.11	1.11	0.92	0.92	-	0.92	0.92	0.92	-	-	-	0.92
C113	2.19	2.19	2.19	2.19	1.46	1.82	-	-	-	-	-	-
C114	2.09	2.09	1.96	1.96	1.96	-	-	-	1.96	-	-	1.96
C115	1.79	1.79	1.79	1.79	1.19	1.49	-	-	-	-	-	-
C116	2.57	2.25	-	2.41	2.41	-	1.93	-	1.93	1.93	-	1.93
C117	-	-	-	-	-	1.93	1.93	1.93	2.89	2.89	1.93	2.89
C118	2.89	2.57	2.25	2.25	2.25	-	-	2.25	2.25	-	-	-
C201	2.03	2.03	2.03	2.03	2.03	2.03	1.58	1.69	1.35	1.35	1.91	2.03
C202	1.45	1.36	1.30	1.36	1.08	1.08	1.36	1.36	-	1.63	-	1.17
C203	1.59	1.72	1.75	2.19	1.79	-	-	1.11	1.39	-	-	1.33
C204	-	-	-	-	-	2.16	2.59	1.72	-	2.16	1.44	1.72
C205	1.45	1.45	1.36	1.49	1.22	1.45	-	-	1.26	1.26	-	1.08
C206	2.27	2.01	2.14	2.08	-	-	-	-	-	-	0.76	-
C207	2.89	2.89	2.89	2.89	-	2.41	-	2.89	2.57	2.89	0.96	1.93
C208	2.89	2.57	2.57	2.57	-	2.41	-	2.41	2.57	1.93	1.45	-
C209	2.23	2.51	2.51	1.84	1.88	2.23	2.09	-	-	1.95	1.95	1.84
C210	2.75	2.75	2.75	-	-	2.75	2.75	2.44	1.83	1.83	2.52	2.29
C211	0.89	1.02	0.96	0.96	0.89	0.89	0.76	1.02	-	0.76	-	0.99
C212	1.36	1.26	1.28	1.51	1.36	-	-	1.16	1.55	1.55	1.46	1.51
C213	1.72	1.99	2.07	2.19	1.59	1.59	2.19	-	-	2.39	-	2.23
C214	2.44	2.44	2.41	1.72	1.29	1.29	2.01	2.16	2.01	1.72	-	1.87
C215	2.89	2.89	2.89	2.89	2.89	2.41	-	2.57	1.93	2.41	1.45	1.93
C216	2.89	2.57	2.89	2.89	2.89	2.89	-	2.41	1.93	1.93	-	1.93
C301	2.35	2.22	2.19	1.72	1.96	-	2.09	1.82	2.09	-	1.56	2.19

C302	2.35	2.22	2.19	1.76	2.09	1.04	2.09	2.09	-	1.96	1.56	1.76
C303	2.31	2.18	2.18	2.15	1.79	-	2.05	-	-	1.54	-	1.54
C304	1.91	1.91	1.80	1.78	1.75	1.59	1.69	1.91	-	1.27	1.48	1.59
C305	1.29	1.29	1.39	1.31	1.19	0.99	1.34	1.64	-	-	1.59	1.55
C306	2.89	2.89	2.89	2.89	-	1.93	-	2.25	1.93	2.41	2.41	2.25
C307	2.89	2.89	2.89	2.89	-	2.41	-	2.41	2.41	2.41	2.41	1.93
C308	2.89	2.89	2.89	2.89	2.89	2.41	-	2.25	2.25	1.93	2.41	1.93
C309	-	-	-	-	2.63	2.33	2.63	2.10	2.63	2.19	2.41	2.48
C310	1.92	1.64	1.92	2.30	1.64	2.26	2.26	1.85	-	-	2.19	1.85
C311	2.33	2.33	2.33	2.30	2.06	2.06	2.19	-	-	1.64	2.19	2.14
C312	2.47	2.33	2.33	2.30	1.97	2.06	1.92	1.85	-	-	2.06	2.06
C313	1.76	1.76	1.76	1.71	-	1.66	1.56	1.12	-	-	1.71	1.24
C314	1.59	1.69	1.69	1.49	-	1.64	1.59	1.39	-	-	1.49	1.59
C315	2.89	2.89	2.89	2.89	2.57	2.41	-	2.25	2.25	1.93	2.41	2.89
C316	2.89	2.89	2.89	2.89	-	-	-	2.41	2.25	1.93	-	2.25
C317	2.89	2.89	2.89	2.89	2.89	-	-	2.41	2.25	1.93	1.93	2.89
C318	3.00	3.00	3.00	3.00	3.00	3.00	2.50	3.00	3.00	3.00	3.00	3.00
C401	2.71	2.56	2.56	2.48	2.26	2.41	2.26	1.80	1.80	-	2.41	2.35
C402	2.44	2.44	2.44	1.72	-	2.16	-	1.72	1.72	-	2.16	1.72
C403	1.99	1.88	1.88	1.85	1.77	1.66	-	1.32	1.66	1.66	1.66	1.59
C404	2.30	2.44	2.44	2.16	-	-	-	1.72	1.29	-	2.01	-
C405	1.84	1.84	1.84	1.78	-	1.73	1.51	-	-	1.51	1.46	1.84
C406	2.37	2.37	2.23	2.23	-	2.23	-	-	1.25	-	2.30	2.30
C407	2.89	2.89	2.89	2.89	2.57	1.93	2.41	2.41	2.57	2.41	2.41	2.89
C408	2.89	2.89	2.89	2.89	-	2.41	-	2.41	2.57	1.93	1.93	2.25
C409	2.14	2.14	2.11	2.11	-	1.70	1.51	1.32	1.13	-	-	2.08
C410	2.12	2.12	2.12	1.91	-	1.59	1.99	1.79	1.33	-	2.19	2.07
C411	2.44	2.59	2.44	2.30	2.16	2.16	1.72	1.72	1.44	-	2.37	2.59
C412	2.10	2.10	2.08	2.08	1.98	1.73	1.48	1.48	1.11	-	1.48	2.08
C413	3.00	3.00	3.00	2.50	3.00	3.00	2.25	3.00	3.00	2.50	3.00	3.00
<b>Direct Attain (DA)</b>	2.26	2.23	2.23	2.15	2.03	1.97	1.92	1.96	2.01	2.02	1.97	2.05



<b>Indirect Attain. (IA)</b>	2.80	2.71	2.78	2.95	2.90	2.75	2.85	2.45	2.85	2.65	2.35	2.65
<b>80% of DA</b>	1.81	1.78	1.78	1.72	1.62	1.58	1.54	1.57	1.61	1.61	1.58	1.64
<b>20% of IA</b>	0.56	0.54	0.56	0.59	0.58	0.55	0.57	0.49	0.57	0.53	0.47	0.53
<b>PO Attain. (0.8*DA+0.2*IA)</b>	2.37	2.33	2.34	2.31	2.20	2.13	2.11	2.06	2.18	2.14	2.05	2.17

**Table B.3.3.2.b: PO-Course Attainment for 2014 Admitted Batch**

<b>Admitted Batch: 2014 ; Assessment Year: CAYm2 (2017-18)</b>												
Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C101	-	-	-	-	-	2.22	2.22	2.22	2.22	2.85	2.38	2.85
C102	1.42	1.42	1.42	1.42	-	1.42	1.19	1.19	-	-	1.19	1.42
C103	1.64	1.54	1.50	1.50	1.44	-	1.73	1.73	-	-	1.50	1.54
C104	1.77	1.57	1.77	1.77	-	1.77	1.62	1.62	-	-	-	1.57
C105	-	-	2.32	-	-	1.85	2.09	2.09	2.09	-	2.16	2.16
C106	2.12	1.99	1.99	1.99	-	1.99	2.39	2.39	2.39	-	2.39	2.39
C107	-	-	-	-	-	1.97	1.97	1.97	2.95	2.95	1.97	2.95
C108	2.99	2.49	2.33	2.33	2.33	1.99	1.99	1.99	1.99	1.99	-	1.99
C109	2.15	2.81	2.81	2.97	2.97	2.64	-	2.57	1.49	-	-	2.64
C110	-	-	-	-	-	2.36	2.20	2.36	2.20	2.36	2.36	2.83
C111	1.35	1.35	1.35	1.05	-	1.05	1.05	1.05	-	-	1.05	1.35
C112	2.42	2.42	2.02	2.02	-	2.02	2.02	2.02	-	-	-	2.02
C113	2.57	2.57	2.57	2.57	1.71	2.14	-	-	-	-	-	-
C114	1.86	1.86	1.74	1.74	1.74	-	-	-	1.74	-	-	1.74
C115	1.30	1.30	1.30	1.30	0.87	1.09	-	-	-	-	-	-
C116	2.64	2.31	-	2.47	2.47	-	1.98	-	1.98	1.98	-	1.98
C117	-	-	-	-	-	1.99	1.99	1.99	2.98	2.98	1.99	2.98
C118	2.97	2.64	2.31	2.31	2.31	-	-	2.31	2.31	-	-	-
C201	2.86	2.86	2.86	2.86	2.86	2.86	2.23	2.39	1.91	1.91	2.70	2.86
C202	1.43	1.34	1.28	1.47	1.61	1.07	1.34	1.34	-	1.61	-	1.16
C203	1.13	1.22	1.24	1.58	1.55	-	-	0.79	0.99	-	-	0.94

C204	-	-	-	-	-	2.22	2.66	1.77	-	2.22	1.48	1.77
C205	1.52	1.52	1.43	1.60	1.60	1.52	-	-	1.33	1.33	-	1.14
C206	2.51	2.23	2.37	2.30	-	-	-	-	-	-	0.84	-
C207	2.97	2.97	2.97	2.97	-	2.47	-	2.97	2.64	2.97	0.99	1.98
C208	2.98	2.65	2.65	2.65	-	2.48	-	2.48	2.65	1.99	1.49	-
C209	1.80	2.03	2.03	1.76	1.86	1.80	1.80	-	-	1.58	1.58	1.49
C210	2.83	2.83	2.83	-	-	2.83	2.83	2.52	1.89	1.89	2.59	2.36
C211	1.41	1.61	1.51	1.69	1.61	1.41	1.51	1.61	-	1.21	-	1.57
C212	0.95	0.88	0.89	1.13	1.13	-	-	0.81	1.08	1.08	1.01	1.05
C213	0.90	1.04	1.08	1.16	1.11	0.83	1.14	-	-	1.25	-	1.16
C214	2.65	2.50	2.36	2.48	2.50	2.21	2.36	2.36	-	1.77	-	1.92
C215	2.95	2.95	2.95	2.95	2.95	-	-	2.46	2.63	1.97	1.64	1.97
C216	2.89	2.57	2.57	2.89	2.89	-	-	2.41	2.25	1.93	1.93	1.93
C301	2.11	2.11	2.11	2.08	2.04	1.73	2.04	1.98	-	2.23	-	2.04
C302	2.77	2.77	2.62	2.62	2.59	2.31	2.46	2.46	-	1.85	-	2.31
C303	2.79	2.63	2.63	2.63	2.60	-	2.48	-	-	1.86	-	1.86
C304	2.69	2.69	2.54	2.51	2.51	2.25	2.47	2.69	-	1.80	2.10	2.25
C305	1.13	1.13	1.22	1.36	1.39	0.87	1.44	1.44	-	-	1.39	1.36
C306	2.97	2.97	2.97	2.97	-	1.98	-	2.31	1.98	2.48	2.48	2.31
C307	2.99	2.99	2.99	2.99	-	2.49	-	2.49	2.49	2.49	2.49	1.99
C308	2.93	2.93	2.93	2.93	2.93	2.44	-	2.28	2.28	1.95	2.44	1.95
C309	-	-	-	-	2.89	2.57	2.89	2.70	2.89	2.41	2.65	2.73
C310	1.59	1.36	1.59	1.93	1.91	1.88	1.88	1.88	-	-	1.82	1.53
C311	2.21	2.21	2.21	2.21	2.19	1.95	2.08	-	-	1.56	2.08	2.03
C312	2.75	2.60	2.60	2.57	2.60	2.29	2.14	2.29	-	-	2.29	2.29
C313	2.39	2.39	2.39	2.32	-	2.25	2.11	2.02	-	-	2.32	1.68
C314	2.21	2.35	2.35	2.28	-	2.28	2.21	1.94	-	-	2.07	2.21
C315	2.97	2.97	2.97	2.97	2.97	2.48	-	2.64	2.31	1.98	2.48	2.97
C316	2.97	2.97	2.97	2.97	-	-	-	2.48	2.31	1.98	-	2.31
C317	2.96	2.96	2.96	2.96	2.96	-	-	2.47	2.30	1.97	1.97	2.96
C318	3.00	3.00	3.00	3.00	3.00	3.00	2.50	3.00	3.00	3.00	3.00	3.00

C401	2.51	2.37	2.37	2.37	2.34	2.23	2.09	2.30	1.67	-	2.23	2.18
C402	2.46	2.46	2.46	1.73	-	2.17	-	2.17	1.73	-	2.17	1.73
C403	2.55	2.40	2.40	2.40	2.55	2.12	-	2.33	2.12	2.12	2.12	2.04
C404	2.23	2.36	2.36	2.23	-	-	-	1.67	1.25	-	1.95	-
C405	2.50	2.50	2.50	2.50	2.42	2.35	2.06	-	-	2.06	1.98	2.50
C406	2.54	2.54	2.39	2.54	-	2.39	-	-	1.35	-	2.47	2.47
C407	2.97	2.97	2.97	2.97	2.97	1.98	2.48	2.48	2.64	2.48	2.48	2.97
C408	2.97	2.97	2.97	2.97	-	2.47	-	2.47	2.64	1.98	1.98	2.31
C409	2.43	2.43	2.40	2.40	2.29	1.93	1.71	2.36	1.29	-	-	2.36
C410	2.05	2.05	2.05	1.84	-	1.53	1.92	2.11	1.28	-	2.11	2.00
C411	2.47	2.61	2.47	2.32	2.47	2.18	1.74	2.40	1.45	-	2.40	2.61
C412	2.35	2.35	2.33	2.33	2.49	1.94	1.66	2.28	1.25	-	1.66	2.33
C413	3.00	3.00	3.00	2.50	3.00	3.00	2.25	3.00	3.00	2.50	3.00	3.00
<b>Direct Attain (DA)</b>	2.33	2.30	2.28	2.27	2.27	2.06	2.02	2.15	2.07	2.07	2.03	2.10
<b>Indirect Attain. (IA)</b>	2.90	2.91	2.89	2.95	2.95	2.75	2.95	2.75	2.80	2.90	2.45	2.95
<b>80% of DA</b>	1.87	1.84	1.82	1.82	1.81	1.65	1.62	1.72	1.66	1.65	1.62	1.68
<b>20% of IA</b>	0.58	0.582	0.578	0.59	0.59	0.55	0.59	0.55	0.56	0.58	0.49	0.59
<b>PO Attain. (0.8*DA+0.2*IA)</b>	2.45	2.42	2.40	2.41	2.40	2.20	2.21	2.27	2.22	2.23	2.11	2.27

**Table B.3.3.2.c: PO-Course Attainment for 2015 Admitted Batch**

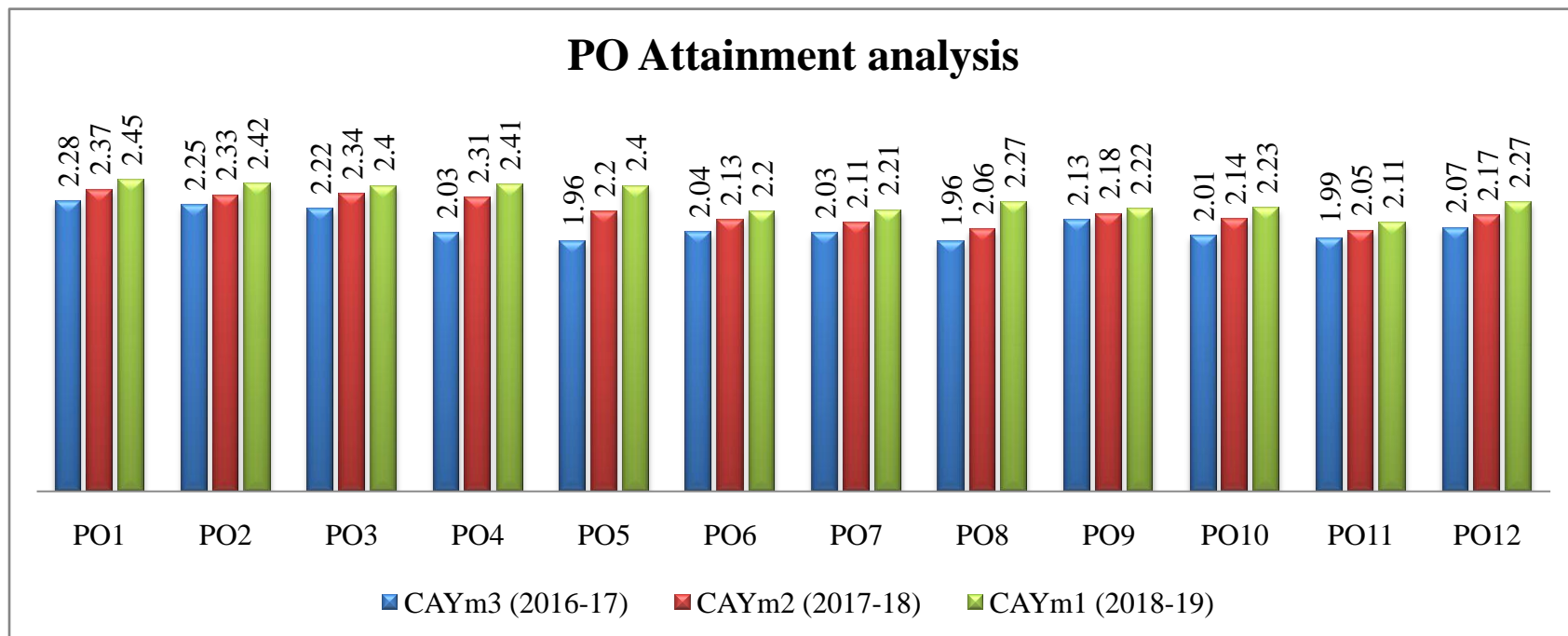
### PO Attainment Analysis

- PO attainment for the three consecutive assessment years 2016-17, 2017-18 & 2018-19 has been increased for core courses of the department through lifelong learning.
- Our department is very keen in implementing new teaching learning process and effective content delivery. Due to this, there is significant improvement in attainment levels. Attainments of PO1 to PO4 are significantly improved due to continuous monitoring of slow learners.

- Improvement in PO12 resulted as there is a continuous motivation towards the enhancing technologies by organizing various workshops and guest lecturers regarding the emerging trends.
- PO9 and PO10 are enhanced through various activities conducted by the program so that the students will be successful as a team and as an individual in their career with social responsibility.

Year	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
<b>CAYm3 (2016-17)</b>	2.28	2.25	2.22	2.03	1.96	2.04	2.03	1.96	2.13	2.01	1.99	2.07
<b>CAYm2 (2017-18)</b>	2.37	2.33	2.34	2.31	2.20	2.13	2.11	2.06	2.18	2.14	2.05	2.17
<b>CAYm1 (2018-19)</b>	2.45	2.42	2.40	2.41	2.40	2.20	2.21	2.27	2.22	2.23	2.11	2.27

**Table B.3.3.2.d: PO attainment values for three assessment years**



**Figure B.3.3.2.a: Comparison of PO attainments**

**Summary:**

For 2016-17 academic year, the target value is 2.2 for PO1 to PO5 and 2.0 for PO6 to PO12. For 2017-18 academic year, the target value is 2.3 for PO1 to PO5 and 2.1 for PO6 to PO12. For 2018-19 academic year, the target value is set to 2.4 for PO1 to PO5 and 2.2 for PO6 to PO12. It was observed that out of 12 POs, few POs were not attained. Department Advisory Committee (DAC) has taken certain actions to improve the PO attainment for the next coming batches.

- ❖ For 2016-17, PO4, PO5, PO8 & PO11 were not attained.
  - ◆ For PO4, subjects that deal with data collection and synthesis were identified. GATE questions were practiced in tutorial classes. Faculty members were advised to discuss simple and relevant journal papers in class room to improve research-based knowledge.
  - ◆ For PO5, additional lab experiments were included for lab associated courses. Faculty members were advised to use different simulation tools to demonstrate the theoretical concepts.
  - ◆ For PO8, identified more courses on ethics and social values. Special lectures were arranged on professional ethics in engineering and value education.
  - ◆ For PO11, students were encouraged to organize department associations so that will learn the managerial skills and lead a team as a leader.
  - ◆ Design workshops were arranged for the improvement of practical applications. DAC proposed to organize workshops on different programming tools for the upgrading of skills. Projects were inclined towards the expansion of tools. Motivational lectures were arranged by eminent people to develop self-consciousness on ethics and human values also identified more courses on ethics and social values. Students were encouraged to organize department associations.
- ❖ For 2017-18, PO5, PO8 & PO11 were not attained.
  - ◆ For PO5, DAC proposed to organize workshops for the upgrading of latest tools. PCB Design workshop was arranged for improving the practical applications. Projects should be inclined towards the expansion of tools.
  - ◆ For PO8, Motivational lectures were arranged by eminent people to develop self-consciousness on ethics and human values.
  - ◆ For PO11, special classes were organized to understand the principles of financial analysis of projects. The importance of financial management was discussed during the project work.

- ❖ For 2018-19, PO11 was not attained.
  - ◆ For PO11, Student clubs were engaged in organizing department level activities independently. Activities were planned under professional bodies to improve financial understanding and analysis.

In similar way, PSO attainment for three consecutive assessment years 2018-19, 2017-18 & 2016-17 is given below:

<b>Admitted Batch: 2013; Assessment Year: 2016-17</b>		
Course	PSO1	PSO2
C101	-	-
C102	-	2.24
C103	-	2.54
C104	0.59	0.67
C105	-	-
C106	-	-
C107	-	-
C108	1.97	1.97
C109	-	-
C110	-	-
C111	-	2.48
C112	2.03	-
C113	-	-
C114	1.87	2.62
C115	2.41	2.56
C116	2.59	1.94
C117	-	-
C118	2.25	2.57
C201	-	-
C202	2.25	1.75
C203	-	-
C204	-	-

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C205	0.94	1.07
C206	-	1.36
C207	2.97	2.31
C208	-	1.98
C209	1.87	1.47
C210	-	-
C211	-	1.65
C212	2.41	1.61
C213	-	1.58
C214	-	2.24
C215	2.89	2.89
C216	1.94	2.91
C301	2.25	2.00
C302	1.68	2.20
C303	1.27	1.59
C304	1.20	1.48
C305	-	2.11
C306	1.91	2.87
C307	2.89	2.89
C308	2.23	2.39
C309	-	-
C310	1.34	1.67
C311	-	1.67
C312	1.63	2.45
C313	-	2.22
C314	-	2.36
C315	2.26	1.94
C316	-	2.95
C317	-	2.93
C318	3.00	3.00
C401	1.98	1.70



C402	-	2.19
C403	-	2.55
C404	1.77	-
C405	-	2.37
C406	-	2.41
C407	2.89	-
C408	2.91	2.91
C409	-	2.37
C410	2.33	2.33
C411	2.73	2.12
C412	2.35	-
C413	3.00	3.00
<b>Direct Attain (DA)</b>	2.14	2.19
<b>Indirect Attain. (IA)</b>	2.55	2.65
<b>80% of DA</b>	1.71	1.75
<b>20% of IA</b>	0.51	0.53
<b>PSO Attain. (0.8*DA+0.2*IA)</b>	2.22	2.28

Table B.3.3.2.e: PO-Course Attainment for 2013 Admitted Batch

<b>Admitted Batch: 2014; Assessment Year: 2017-18</b>		
Course	PSO1	PSO2
C101	-	-
C102	-	1.92
C103	-	1.91
C104	0.84	0.95
C105	-	-
C106	-	-
C107	-	-

C108	1.93	1.93
C109	-	-
C110	-	-
C111	-	2.23
C112	0.86	-
C113	-	-
C114	1.56	2.19
C115	1.59	1.69
C116	2.57	1.93
C117	-	-
C118	2.25	2.57
C201	-	-
C202	1.63	1.54
C203	-	-
C204	-	-
C205	1.08	1.63
C206	-	1.89
C207	2.89	2.89
C208	-	2.89
C209	2.37	2.51
C210	-	-
C211	-	1.15
C212	1.75	1.65
C213	-	2.25
C214	-	2.59
C215	2.89	2.89
C216	2.89	2.89
C301	2.35	2.22
C302	2.22	2.35
C303	2.31	2.31
C304	1.80	1.91

C305	-	1.79
C306	2.89	2.89
C307	2.89	2.89
C308	2.89	2.89
C309	-	-
C310	2.47	2.47
C311	-	2.47
C312	2.47	2.47
C313	-	1.87
C314	-	1.67
C315	2.89	2.89
C316	-	2.89
C317	-	2.89
C318	3.00	3.00
C401	2.71	2.71
C402	-	2.30
C403	-	1.99
C404	2.16	-
C405	-	1.95
C406	-	2.51
C407	2.89	-
C408	2.89	2.89
C409	-	2.27
C410	2.23	2.23
C411	2.59	2.30
C412	2.23	-
C413	3.00	3.00
<b>Direct Attain (DA)</b>	2.30	2.29
<b>Indirect Attain. (IA)</b>	2.65	2.55
<b>80% of DA</b>	1.84	1.83

<b>20% of IA</b>	0.53	0.51
<b>PSO Attain. (0.8*DA+0.2*IA)</b>	2.37	2.34

**Table B.3.3.2.f: PO-Course Attainment for 2014 Admitted Batch**

<b>Admitted Batch: 2015; Assessment Year: 2018-19</b>		
Course	PSO1	PSO2
C101	-	-
C102	-	1.19
C103	-	1.64
C104	1.18	1.33
C105	-	-
C106	-	-
C107	-	-
C108	1.99	1.99
C109	-	-
C110	-	-
C111	-	1.20
C112	1.88	-
C113	-	-
C114	1.39	1.95
C115	1.16	1.23
C116	2.64	1.98
C117	-	-
C118	2.31	2.64
C201	-	-
C202	1.61	1.52
C203	-	-
C204	-	-
C205	1.14	1.71
C206	-	2.09

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C207	2.97	2.97
C208	-	2.98
C209	1.92	2.03
C210	-	-
C211	-	1.81
C212	1.22	1.15
C213	-	1.18
C214	-	2.65
C215	2.95	2.95
C216	2.89	2.89
C301	2.23	2.11
C302	2.62	2.77
C303	2.79	2.79
C304	2.54	2.69
C305	-	1.57
C306	2.97	2.97
C307	2.99	2.99
C308	2.93	2.93
C309	-	-
C310	2.05	2.05
C311	-	2.34
C312	2.75	2.75
C313	-	2.53
C314	-	2.32
C315	2.97	2.97
C316	-	2.97
C317	-	2.96
C318	3.00	3.00
C401	2.51	2.51
C402	-	2.31
C403	-	2.55

C404	2.09	-
C405	-	2.64
C406	-	2.69
C407	2.97	-
C408	2.97	2.97
C409	-	2.57
C410	2.15	2.15
C411	2.61	2.32
C412	2.49	-
C413	3.00	3.00
<b>Direct Attain (DA)</b>	2.36	2.32
<b>Indirect Attain. (IA)</b>	2.85	2.95
<b>80% of DA</b>	1.89	1.86
<b>20% of IA</b>	0.57	0.59
<b>PSO Attain. (0.8*DA+0.2*IA)</b>	2.46	2.45

**Table B.3.3.2.g: PO-Course Attainment for 2014 Admitted Batch**

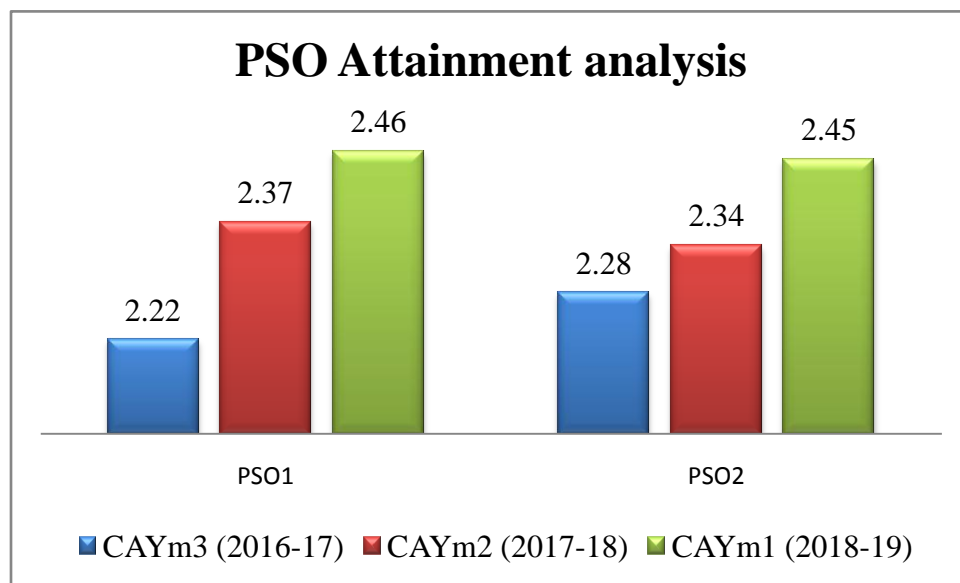
**PSO Attainment Analysis:**

For the last three assessment years 2018-19, 2017-18 & 2016-17, the PSO attainment values are increasing gradually. There were various industry interactions and technical events being conducted every year like technical expo which develop the skill of the students in technical aspects.

<b>Year</b>	<b>PSO1</b>	<b>PSO2</b>
<b>CAYm3 (2016-17)</b>	2.22	2.28
<b>CAYm2 (2017-18)</b>	2.37	2.34
<b>CAYm1 (2018-19)</b>	2.46	2.45

**Table B.3.3.2.h: PSO attainment values for three assessment years**

Due to the availability of research facilities and specialised experts in the department being effectively utilised, has enhanced the achievement of the specific outcomes.



**Figure B.3.3.2.b: Comparison of PSO attainment**

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<b>Criterion 4</b>	<b>Students Performance</b>	<b>150 M</b>
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4.1	Enrolment Ratio	20M
4.2	Success Rate in the Stipulated Period of the Program	40M
4.3	Academic Performance in Third Year	15M
4.4	Academic Performance in Second Year	15M
4.5	Placement, Higher Studies and Entrepreneurship	40M
4.6	Professional Activities	20M



<b>Criterion 4</b>	<b>Students Performance</b>	<b>150 M</b>
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#### 4. Students Performance (150)

<b>Item(Information to be provided cumulatively for all the shifts with explicit headings, wherever applicable)</b>	<b>CAY (2019-20)</b>	<b>CAYm1 (2018-19)</b>	<b>CAYm2 (2017-18)</b>
Sanctioned intakeof the program (N)	180	180	180
Total number of students admitted in first year minus number of students migrated to other programs/institutions plus No. of students migrated to this program (N1)	153	162	171
Number of students admitted in 2nd year in the same batch via lateral entry (N2)	-	19	36
Separate division students, If applicable(N3)	NIL	NIL	NIL
Total number of students admitted in the programme (N1+N2+N3)	153	181	207

**Table B.4.a: Total number of admitted students**

CAY – Current Academic Year

CAYm1- Current Academic Year minus1= Current Assessment Year

CAYm2 - Current Academic Year minus2=Current Assessment Year minus 1

LYG – Last Year Graduate

LYGm1 – Last Year Graduate minus 1

LYGm2 – Last Year Graduate minus 2

**Number of students who have successfully graduated without backlogs in any semester/ year of study (Without Backlog means no compartment or failures in any semester/ year of study)**

Year of entry	Total No of students admitted in the program (N1 + N2 + N3)	Number of students who have successfully graduated without backlogs in any semester/ year of study (Without Backlog means no compartment or failures in any semester/ year of study)			
		I Year	II Year	III Year	IV Year
2019-20(CAY)	153 (153+0+0)	-	-	-	-
2018-19 (CAYm1)	181 (162+19+0)	124	-	-	-
2017-18 (CAYm2)	207 (171+36+0)	117	123(106+17)	-	-
2016-17 (CAYm3)	197 (165+32+0)	118	125(105+20)	116(97+19)	-
2015-16 (LYG)	197 (168+29+0)	96	101(83+18)	95(78+17)	95(78+17)
2014-15 (LYGm1)	187 (172+15+0)	94	90(81+9)	85(76+9)	82(73+9)
2013-14 (LYGm2)	159 (134+25+0)	97	109(89+20)	102(83+19)	99(80+19)

**Table B. 4.b: Total Students successfully graduated without backlogs**

**Number of students who have successfully graduated with backlogs in any semester/ year of study (With Backlog means no compartment or failures in any semester/ year of study)**

Year of entry	Total No of students admitted in the program (N1 + N2 + N3)	Number of Students who have Successfully Graduated (Students with backlog in stipulated period of study)			
		I Year	II Year	III Year	IV Year
2019-20 (CAY)	153 (153+0+0)	-	-	-	-
2018-19 (CAYm1)	181 (162+19+0)	162	-	-	-
2017-18 (CAYm2)	207 (171+36+0)	170	201	-	-
2016-17 (CAYm3)	197 (165+32+0)	163	194	193	-
2015-16 (LYG)	197 (168+29+0)	165	189	184	153(130+23)
2014-15 (LYGm1)	187 (172+15+0)	167	177(164+13)	172(159+13)	148(137+11)
2013-14 (LYGm2)	159 (134+25+0)	132	157(132+25)	152(130+22)	137(115+22)

**Table B.4.c: Total students successfully graduated with backlogs**

**4.1 Enrolment Ratio (20)**

*Enrolment Ratio =  $N1/N$*

<i>Item (Students enrolled at the First Year Level on average basis during the previous three academic years starting from current academic year)</i>	<i>Marks</i>
<i><math>\geq 90\%</math> students enrolled</i>	<i>20</i>
<i><math>\geq 80\%</math> students enrolled</i>	<i>18</i>
<i><math>\geq 70\%</math> students enrolled</i>	<i>16</i>
<i><math>\geq 60\%</math> students enrolled</i>	<i>14</i>
<i><math>\geq 50\%</math> students enrolled</i>	<i>12</i>
<i>Otherwise</i>	<i>0</i>

<b>Year</b>	<b>N (From Table B.4a)</b>	<b>N1 (From Table B.4a)</b>	<b>Enrolment Ratio [(N1/N)*100]</b>
2019-20	180	153	85
2018-19	180	162	90
2017-18	180	171	95
Average of Enrolment Ratio			<b>90</b>
Marks			<b>20</b>

**Table B. 4.1: Enrolment Ratios**

**4.2 Success Rate in the Stipulated Period of the Program (40)****4.2.1. Success Rate without Backlogs in any Semester/ Year of Study (25)**

*SI = (Number of students who have graduated from the program without backlog) / (Number of students admitted in the first year of that batch and actually admitted in 2nd year via lateral entry and separate division, if applicable)*

*Average SI = Mean of Success Index (SI) for past three batches*

*Success rate without backlogs in any year of study =  $25 \times$  Average SI*

*Successful students are those who are permitted to proceed to the Third year.*

Item	Latest Year of Graduation, LYG (2015-2016)	Latest Year of Graduation minus1, LYGm1 (2014-2015)	Latest Year of Graduation minus2, LYGm2 (2013-2014)
Number of students admitted in the corresponding First year + admitted in 2 <sup>nd</sup> year via lateral entry and separated division [X]	197	187	159
Number of students who have graduated without backlogs in the stipulated period [Y]	95	82	99
Success Index, [ SI = Y / X ]	0.48	0.44	0.62
Average SI = [ (SI1 + SI2 + SI3) / 3 ]			0.51
Marks = 25* Average SI			12.75

**Table B. 4.2.1: Success Rate without backlogs****4.2.2. Success Rate in Stipulated Period of Study (15)**

*SI = (Number of students who graduated from the program in the stipulated period of course duration) / (Number of students admitted in the first year of that batch and actual admitted in 2nd year via lateral entry and separate division, if applicable)*

*Average SI = mean of Success Index (SI) for past three batches*

*Success rate = 15 × Average SI*

Item	Last Year of Graduate, LYG (CAYm4) (2015-2016)	Last Year of Graduate minus1, LYGm1 (CAYm5) (2014-2015)	Last Year of Graduate minus2, LYGm2 (CAYm6) (2013-2014)
Number of students admitted in the corresponding First year + admitted in 2 <sup>nd</sup> year via lateral entry and separated division, if applicable [X]	197	187	159
Number of students who have graduated without backlogs in the stipulated period [Y]	153	148	137
Success Index, [ SI = Y / X ]	0.78	0.79	0.86
Average SI = [ (SI1 + SI2 + SI3) / 3 ]			0.81
Marks = 15* Average SI			12.15

**Table B. 4.2.2: Success rate with backlogs**

### 4.3. Academic Performance in Third Year (15)

*Academic Performance = Average API (Academic Performance Index), where*

*API = ((Mean of 3<sup>rd</sup> Year Grade Point Average of all successful Students on a 10 point scale) or (Mean of percentage of marks of all successful students in third Year/10)) x (number of successful students/number of students appeared in the examination)*

*Successful students are those who are permitted to proceed to the final year.*

Academic Performance	CAYm3 (2016-17)	LYG (2015-16)	LYGm1 (2014-15)
Mean of CGPA or mean percentage of all successful students (X)	7.55	7.05	6.85
Total number of successful students (Y)	193	184	172
Total number of students appeared in the examination(Z)	194	189	177
API = [ X*(Y/Z) ]	7.51	6.86	6.65
Average API= [ (AP1 + AP2 + AP3)/3 ]	7.00		
Marks = [1.5 * Average API]	10.51		

**Table B. 4.3: Academic performance in Third year**

### 4.4. Academic Performance in Second Year (15)

*Academic Performance Level = 1.5 \* Average API (Academic Performance Index)*

*API = ((Mean of 2nd Year Grade Point Average of all successful Students on a 10 point scale) or (Mean of the percentage of marks of all successful students in Second Year/10)) x (number of successful students/number of students appeared in the examination)*

*Successful students are those who are permitted to proceed to the Third year.*

Academic Performance	CAYm2 (2017-18)	CAYm3 (2016-17)	LYG (2015-16)
Mean of CGPA or mean percentage of all successful students (X)	7.09	6.99	6.55
Total number of successful students (Y)	201	194	189
Total number of students appeared in the examination(Z)	206	195	194
API = [ X*(Y/Z) ]	6.91	6.95	6.38
Average API = [ (AP1 + AP2 + AP3)/3 ]	6.74		
Marks= [1.5 * Average API]	10.12		

**Table B. 4.4: Academic performance in Second year**

#### 4.5. Placement, Higher Studies and Entrepreneurship (40)

Assessment Points =  $40 \times$  average placement

Item	CAYm1 2018-19	CAYm2 2017-18	CAYm3 2016-17
Total No of Final Year Students(N)	184	172	152
No of students placed in the companies or government sector(X)	144	137	127
No of students admitted to higher studies with valid qualifying scores (GATE or equivalent State or National Level tests, GRE, GMAT etc.) (Y)	4	6	7
No of students turned entrepreneur in engineering/technology(Z)	0	2	1
$X + Y + Z =$	148	145	135
Placement Index = $[(X+Y+Z)/N]:$	0.80	0.84	0.89
Average placement = $(P1 + P2 + P3)/3$	0.84		
Marks = $[40 * \text{Average Placement}]$	33.73		

**Table B. 4.5: Placement, Higher Studies and Entrepreneurship**

**4.5a. Provide the Placement Data in the below mentioned Format with the Name of the program and the Assessment Year.**

The department of ECE adopted various innovative teaching learning methodologies along with the traditional classroom teaching foreffective content delivery. We incorporated Campus Recruitment Training (CRT) and Campus Specific Trainings for the students along with regular academic curriculum. These practices helped the students in getting placements in various reputed MNC's with good packages.

In 2018-19, MNC's like TCS, Capgemini, Infosys, HCL and other top MNCs visited the campus and selected 115 students with highest package of 3.50 LPA and an average of 2.38 LPA.

Electronics & Communication Engineering, 2018-19				
S.No	Student Name	Enrolment No	Employee Name	Appointment No
1	A ALEKHYA	15NM1A0406	CAPGEMINI	HR/CAMPUS/LO201941825
2	B SARANYA	15NM1A0408	TCS	TCSI/DT/20184349401/HYD
3	B RAMA DEVI	15NM1A0409	CAPGEMINI	HR/CAMPUS/LO201941862
4	B SHANMUKALAKSHMI KATYAYANI	15NM1A0413	INFOSYS	VIEW/TP/20190355
5	D LOHITHA LAHARI	15NM1A0423	CAPGEMINI	HR/CAMPUS/LO201941842
6	D ANUSHA	15NM1A0427	CAPGEMINI	HR/CAMPUS/LO201941878
7	G KANAKA DIVYA	15NM1A0430	CAPGEMINI	HR/CAMPUS/LO201941854
8	G SANTHI	15NM1A0438	INFOSYS	VIEW/TP/20190356
9	G MADHURI	15NM1A0440	CAPGEMINI	HR/CAMPUS/LO201941891
10	K SAI MOUNICA	15NM1A0447	WIPRO	8442875

11	K MAMATHA	15NM1A0453	CAPGEMINI	HR/CAMPUS/LO201941890
12	K SRAVANI	15NM1A0461	TCS	TCSI/DT/20184428429/HYD
13	M GAYATRI	15NM1A0473	CAPGEMINI	HR/CAMPUS/LO201941855
14	M MANASA	15NM1A0474	WIPRO	8264351
15	M SRAVANI SANDHYA	15NM1A0480	CAPGEMINI	HR/CAMPUS/LO201941835
16	M PRIYANKA	15NM1A0482	CAPGEMINI	HR/CAMPUS/LO201941823
17	P MOWNICA	15NM1A0493	CAPGEMINI	HR/CAMPUS/LO201941859
18	P CHANDANA SRAVANI	15NM1A0495	HCL	VIEW/TP/20190319
19	P VINEELA	15NM1A0496	CAPGEMINI	HR/CAMPUS/LO201941867
20	P BHAVANI	15NM1A04A1	CAPGEMINI	HR/CAMPUS/LO201941872
21	T LAKSHMI PRIYANKA	15NM1A04B5	INFOSYS	VIEW/TP/20190358
22	A HYNDHAVI	16NM5A0401	CAPGEMINI	HR/CAMPUS/LO201941863
23	M NIKHITHA	16NM5A0420	TCS	TCSI/DT/20184428309/HYD
24	STHULASI	15NM1A04B4	TECH MAHENDRA	VIEW/TP/20190361
25	G ROHITA KRISHNA	15NM1A0436	QSPIDERS/JSPIDERS	VIEW/TP/20190300
26	M BHAVYA SRI	15NM1A0467	QSPIDERS/JSPIDERS	VIEW/TP/20190301
27	P SAI NAGA MOUNIKA	15NM1A0489	QSPIDERS/JSPIDERS	VIEW/TP/20190302
28	S KARISHMA	15NM1A04B0	QSPIDERS/JSPIDERS	VIEW/TP/20190303
29	V THIRUMALA GAYATHRI	15NM1A04C1	REDCARPET	VIEW/TP/20190325
30	A JHANSI	15NM1A0403	PATHFRONT	PFSDS/B001/248/22122018
31	A BHARATHI LAKSHMI	15NM1A0405	PATHFRONT	PFSDS/B001/249/22122018
32	M CHARISHMA	15NM1A0468	PATHFRONT	PFSDS/B001/271/22122018
33	M PADMINI SUNAYANA	15NM1A0471	NET2SOURCE	VIEW/TP/20190288
34	M HEMALATHA	15NM1A0472	PATHFRONT	PFSDS/B001/272/22122018
35	MUNGI ARUNA KUMARI	15NM1A0481	PATHFRONT	PFSDS/B001/237/22122018
36	NANDAVARAPU SUSILA	15NM1A0486	PATHFRONT	PFSDS/B001/275/22122018
37	PACHHIGOLLA HARSHITHA	15NM1A0488	IBeON INFOTECH	VIEW/TP/20190474
38	PULAPA VINEELA	15NM1A04A0	PATHFRONT	PFSDS/B001/277/22122018
39	RONGALI LOHITHA	15NM1A04A8	PATHFRONT	PFSDS/B001/278/22122018
40	AKKIREDDY YASASRI	15NM1A04C4	PATHFRONT	PFSDS/B001/239/22122018
41	KORUPOLU YAMINI	15NM1A04E8	PATHFRONT	PFSDS/B001/279/22122018
42	SIRIPURAM SAI SAGARIKA	15NM1A04G4	PATHFRONT	PFSDS/B001/280/22122018
43	DAMA MANASA	15NM1A0424	HCL	VIEW/TP/20190318
44	POLAMARASETTI LIKHITA	15NM1A0497	MPHASIS	MPH2019-0817,12-12-2018
45	GOLLAKOTI MANI DEEPIKA	15NM1A0434	IBeON INFOTECH	VIEW/TP/20190128
46	KOINANA ANITHA	15NM1A0458	IBeON INFOTECH	VIEW/TP/20190129
47	KORADA GEETHA MADHURI	15NM1A0460	IBeON INFOTECH	VIEW/TP/20190130
48	MUDUNURU LALITHA DEVI	15NM1A0479	IBeON INFOTECH	VIEW/TP/20190131
49	PYLA LAXMI PRAHELIKA	15NM1A04A3	IBeON INFOTECH	VIEW/TP/20190133
50	SABBI PRASANNA LAKSHMI	15NM1A04A9	IBeON INFOTECH	VIEW/TP/20190134
51	SAKSHI SINGH	15NM1A04G2	IBeON INFOTECH	VIEW/TP/20190136
52	MASARAPU KARISHMA	16NM5A0419	IBeON INFOTECH	VIEW/TP/20190137
53	MUGADA MADHAVILATHA	16NM5A0421	IBeON INFOTECH	VIEW/TP/20190138
54	ULABALA SUJATHA	16NM5A0427	IBeON INFOTECH	VIEW/TP/20190139
55	MADDALA MANJUSHA	15NM1A0464	SILICON LAB	VIEW/TP/20190331
56	ANDIBOYINA JANAKI	15NM1A0402	THINKSYNQ	VIEW/TP/20190195
57	ARISANKALA YASODA SRIDEVI	15NM1A0404	THINKSYNQ	VIEW/TP/20190196
58	BASA KAVYA VIJAYA LAKSHMI	15NM1A0410	THINKSYNQ	VIEW/TP/20190197
59	BODDEPALLI SANDHYAREKHA	15NM1A0415	THINKSYNQ	VIEW/TP/20190198
60	CHINTALA MOUNICA	15NM1A0420	THINKSYNQ	VIEW/TP/20190199
61	DANDA JAHNAVI	15NM1A0425	THINKSYNQ	VIEW/TP/20190200
62	DATLA SAI KRISHNA SRAVANTHI	15NM1A0426	THINKSYNQ	VIEW/TP/20190201
63	GANAGALA DIVYASRI	15NM1A0429	THINKSYNQ	VIEW/TP/20190202
64	GOGULAMUDI POOJA	15NM1A0433	THINKSYNQ	VIEW/TP/20190203
65	ILLINDA VENKATA SAKUNTALA	15NM1A0441	THINKSYNQ	VIEW/TP/20190204
66	INDURI RAMANI	15NM1A0442	THINKSYNQ	VIEW/TP/20190205
67	JALLEPALLI GAYATHRI REIKI PRATHYUSHA	15NM1A0444	THINKSYNQ	VIEW/TP/20190206

68	KANDIPALLI SARIKA	15NM1A0449	THINKSYNQ	VIEW/TP/20190207
69	KANDULA MANJU BHARGAVI	15NM1A0450	THINKSYNQ	VIEW/TP/20190208
70	KARRI NAGA VARALAKSHMI	15NM1A0457	THINKSYNQ	VIEW/TP/20190210
71	LAGUDU SHARMILA	15NM1A0463	THINKSYNQ	VIEW/TP/20190211
72	MADDI PRATYUSHA	15NM1A0465	THINKSYNQ	VIEW/TP/20190212
73	MALLA SRISHA	15NM1A0470	THINKSYNQ	VIEW/TP/20190214
74	MAVURI SHYAMALA	15NM1A0475	THINKSYNQ	VIEW/TP/20190215
75	MAVURI VASANTHA	15NM1A0476	THINKSYNQ	VIEW/TP/20190216
76	MUTYALA SAI JYOTHI	15NM1A0483	THINKSYNQ	VIEW/TP/20190217
77	ONIMI RUPA MANJARI	15NM1A0487	THINKSYNQ	VIEW/TP/20190218
78	PARANANDI MADHU MOUNIKA	15NM1A0494	THINKSYNQ	VIEW/TP/20190219
79	RAMASETTY GOWTHAMI	15NM1A04A4	THINKSYNQ	VIEW/TP/20190220
80	SEELAM JYOTHI	15NM1A04B1	THINKSYNQ	VIEW/TP/20190221
81	ALLUMALLA ESWARI KRISHNA SREEHITHA	15NM1A04C5	THINKSYNQ	VIEW/TP/20190222
82	BETHA BHARGAVI	15NM1A04C8	THINKSYNQ	VIEW/TP/20190223
83	GOPISETTI ANUSHA	15NM1A04D9	THINKSYNQ	VIEW/TP/20190224
84	KANCHIPATI NAVYA	15NM1A04E5	THINKSYNQ	VIEW/TP/20190225
85	KOMMULA ANUSHA	15NM1A04E6	THINKSYNQ	VIEW/TP/20190226
86	KUTCHU DIVYA VANI	15NM1A04E9	THINKSYNQ	VIEW/TP/20190228
87	NIKITA SHARMA	15NM1A04F5	THINKSYNQ	VIEW/TP/20190229
88	PATNAIKUNI VENKATASAI APARNA CHANDINI	15NM1A04F8	THINKSYNQ	VIEW/TP/20190230
89	SRAVANI ATCHI	15NM1A04G5	THINKSYNQ	VIEW/TP/20190232
90	URIKITI LAKSHMI PRASANNA	15NM1A04G6	THINKSYNQ	VIEW/TP/20190233
91	CHALLA DIVYA	16NM5A0406	PATHFRONT	PFSDS/B001/276/22122018
92	KARRI JYOTHSNA	16NM5A0414	THINKSYNQ	VIEW/TP/20190235
93	ALLAVARAPU GANESWARI RUPAVATHI	15NM1A0401	I PROCESS	VIEW/TP/20190059
94	CHANDAKA VASAVI	15NM1A0417	I PROCESS	VIEW/TP/20190060
95	CHAPPA PADMINI	15NM1A0418	I PROCESS	VIEW/TP/20190061
96	GOLLAVILLI REVATHI	15NM1A0435	I PROCESS	VIEW/TP/20190063
97	KALAGA LAKSHMI PRASANNA	15NM1A0446	I PROCESS	VIEW/TP/20190065
98	MALLA GOWTHAMI	15NM1A0469	I PROCESS	VIEW/TP/20190069
99	MOUNIKA PENTAKOTA	15NM1A0478	I PROCESS	VIEW/TP/20190070
100	NAMMI MANJU VARSHINI	15NM1A0484	I PROCESS	VIEW/TP/20190071
101	POTHALA AMMAJI	15NM1A0498	I PROCESS	VIEW/TP/20190073
102	PYLA BHARATHI	15NM1A04A2	I PROCESS	VIEW/TP/20190074
103	RAYI MOUNIKA	15NM1A04A6	I PROCESS	VIEW/TP/20190075
104	BODDEPALLI PUJITHA	15NM1A04C9	I PROCESS	VIEW/TP/20190077
105	DAMINENI LOHITHA	15NM1A04D3	I PROCESS	VIEW/TP/20190078
106	KALLURI SAI KANAKA MAHA LAKSHMI	16NM5A0412	I PROCESS	VIEW/TP/20190079
107	KADHAMBRAM BINDUPRIYA	15NM1A0445	MIRACLE	VIEW/TP/20190323
108	KOVAGAPU RAMYA	15NM1A0462	Gowtham School	VIEW/TP/20190418
109	GANTLA POOJITHA	15NM1A0431	ASTRAZENECA	VIEW/TP/20190421
110	GEDELA RENUKA	15NM1A0432	IMERIT Technologies	VIEW/TP/20190420
111	PAILA PRATHYUSHA	15NM1A0491	Sunrise High School	VIEW/TP/20190334
112	BASWA RAJANI	15NM1A0412	THINKSYNQ	VIEW/TP/20190428
113	BODDAPU PRIYANKA	15NM1A0414	THINKSYNQ	VIEW/TP/20190429
114	BUGATHA LEELA	15NM1A0416	THINKSYNQ	VIEW/TP/20190430
115	CHILAKA LALITA LAVANYA	15NM1A0419	THINKSYNQ	VIEW/TP/20190431
116	CHUKKA SHYAMALA	15NM1A0422	THINKSYNQ	VIEW/TP/20190432
117	GUNDALA SRAVANTHI	15NM1A0439	THINKSYNQ	VIEW/TP/20190433
118	JADDU AMMADU	15NM1A0443	THINKSYNQ	VIEW/TP/20190434
119	KARAKA POORNA	15NM1A0454	THINKSYNQ	VIEW/TP/20190435
120	NAMMI NAVYA	15NM1A0485	THINKSYNQ	VIEW/TP/20190436
121	NELLI DURGA	16NM5A0422	THINKSYNQ	VIEW/TP/20190234
122	PALAPU MARY	15NM1A0492	THINKSYNQ	VIEW/TP/20190438



123	RAMBA VASAVI DEVI	15NM1A04A5	THINKSYNQ	VIEW/TP/20190439
124	SRIRAM ROHINI	15NM1A04B2	THINKSYNQ	VIEW/TP/20190440
125	VADAMODULA SAHITHYA	15NM1A04B9	THINKSYNQ	VIEW/TP/20190441
126	VANAVADA ROHINI	15NM1A04C0	THINKSYNQ	VIEW/TP/20190442
127	YELLAPU ALEKHYA	15NM1A04C3	THINKSYNQ	VIEW/TP/20190443
128	ANNAMREDDY PHANI PRIYANKA	15NM1A04C6	THINKSYNQ	VIEW/TP/20190444
129	DADI SAI VANDANA	15NM1A04D2	THINKSYNQ	VIEW/TP/20190445
130	GOTTIMUKKALA POOJITHA	15NM1A04E0	THINKSYNQ	VIEW/TP/20190446
131	JANAPAREDDY ROHINI	15NM1A04E3	THINKSYNQ	VIEW/TP/20190447
132	JAYA SREE HARIKA VADAPALLI	15NM1A04E4	THINKSYNQ	VIEW/TP/20190448
133	MAMIDI ANNAPURNA	15NM1A04F0	TECHMBPS	VIEW/TP/20190449
134	NALLA MOUNIKA	15NM1A04F2	TECHMBPS	VIEW/TP/20190450
135	PALLANTI SUSHMA	15NM1A04F6	TECHMBPS	VIEW/TP/20190451
136	PITTA MAMATHA	15NM1A04F9	TECHMBPS	VIEW/TP/20190452
137	SIREESHA CHOKKAPU	15NM1A04G3	TECHMBPS	VIEW/TP/20190453
138	YERRA VAGDEVI	15NM1A04G8	TECHMBPS	VIEW/TP/20190454
139	N. NAGA DIVYA	15NM1A04G9	TECHMBPS	VIEW/TP/20190455
140	BOGGU LEELA AMRUTA VARSHINI	16NM5A0402	TECHMBPS	VIEW/TP/20190456
141	BONGU SUNEETHA	16NM5A0403	TECHMBPS	VIEW/TP/20190457
142	BUSKALA SRAVANI	16NM5A0405	IBeON INFOTECH	VIEW/TP/20190475
143	DHARMALA ROHINI	16NM5A0408	TECHMBPS	VIEW/TP/20190459
144	GORLE MANISHA	16NM5A0409	TECHMBPS	VIEW/TP/20190460

**Table B. 4.5.a: Placement Information of 2018-19**

In 2017-18, MNC's like TCS, IBM, Accenture, Capgemini, Infosys, Amazon, Micromax and other top MNC's visited the campus and selected 117 students with highest package of 4.0 LPA and an average of 2.60 LPA.

<b>Electronics &amp; Communication Engineering, 2017-18</b>				
<b>S.No</b>	<b>Student Name</b>	<b>Enrolment No</b>	<b>Employee Name</b>	<b>Appointment No</b>
1	SRUNGARAPU BHAVANI	14NM1A04G7	MPHASIS	VIEW/TP/20170105
2	NALLALA POORNIMA	14NM1A0475	TCS	VIEW/TP/20170012
3	NEERUKATTU SWATHI	14NM1A0477	TCS	VIEW/TP/20170112
4	PEDIREDDLA YAMINI	14NM1A0484	TCS	VIEW/TP/20170019
5	PENTAKOTA MOUNIKA	14NM1A0485	TCS	VIEW/TP/20170026
6	SANAPATHI LAVANYA	14NM1A04A0	TCS	VIEW/TP/20170140
7	RAPARTHI SAI GOUTHAMI PRIYANKA	14NM1A04F8	Accenture	VIEW/TP/20170108
8	GARRE MAHALAKSHMI CHANDRAKALA	14NM1A0438	IBM	VIEW/TP/20170287
9	MANTHA NAGA MADHUSHALINI	14NM1A0468	ANKUR LAMPS AND LIGHTING PRIVATE LIMITED	VIEW/TP/20170071
10	AMPOLU NAVYA	14NM1A04C3	ANKUR LAMPS AND LIGHTING PRIVATE LIMITED	VIEW/TP/20170120
11	MADAKA SIRISHA	14NM1A0463	MOURITECH	VIEW/TP/20170126
12	ADARI MOHAN SRI LAKSHMI	14NM1A0401	IBM	VIEW/TP/20170272
13	ALLU SANTOSHI KUMARI	14NM1A0402	INFOSYS	VIEW/TP/20170231
14	BATHINA SRAVYA SREE	14NM1A0409	IBM	VIEW/TP/20170277
15	BHOOMIREDDY SRAVANI	14NM1A0411	INFOSYS	VIEW/TP/20170237
16	CHAPPA LAVANYA	14NM1A0421	IBM	VIEW/TP/20170282
17	CHEBOLU ALEKHYA	14NM1A0422	INFOSYS	VIEW/TP/20170243

18	GADDEM JYOTHI	14NM1A0432	INFOSYS	VIEW/TP/20170248
19	GOLAGANI SAIPRASANNA	14NM1A0441	IBM	VIEW/TP/20170292
20	GONTINI KANAKA MAHALAXMI VENKATA ANUSHA	14NM1A0442	INFOSYS	VIEW/TP/20170253
21	KOSARA VARSHA	14NM1A0456	IBM	VIEW/TP/20170297
22	ROUTHU SRAVANI	14NM1A0495	IBM	VIEW/TP/20170302
23	TALAPUREDDY CHINNI	14NM1A04A8	IBM	VIEW/TP/20170307
24	TAMMIREDDY SANDHYA	14NM1A04B0	INFOSYS	VIEW/TP/20170263
25	AKI VANDANA	14NM1A04C1	IBM	VIEW/TP/20170312
26	MANTRIPRAGADA P S GAYATHRI	14NM1A04E9	IBM	VIEW/TP/20170317
27	MUPPINA V S S SARASWATHI	14NM1A04F1	INFOSYS	VIEW/TP/20170268
28	TAMMIREDDY KAVYA SREE	14NM1A04G8	IBM	VIEW/TP/20170322
29	V N SASI MOULIKA JUZHALARAO	14NM1A04H0	INFOSYS	VIEW/TP/20170273
30	MARLA MONIKA REDDY	15NM5A0412	INFOSYS	VIEW/TP/20170278
31	PRAVALLIKA KOLLA	14NM1A0490	VEE TECHNOLOGIES	VIEW/TP/20170017
32	ROMALA HASMITHA	14NM1A0494	VEE TECHNOLOGIES	VIEW/TP/20170024
33	VEDULA MANASWINI	14NM1A04B7	VEE TECHNOLOGIES	VIEW/TP/20170008
34	YEGIREDDI SURYA KUMARI	14NM1A04C0	VEE TECHNOLOGIES	VIEW/TP/20170042
35	KUPPILI JYOTSHNA PADMAJA	14NM1A04E5	VEE TECHNOLOGIES	VIEW/TP/20170016
36	M SARVANI KRISHNA PRIYANKA	14NM1A04E8	VEE TECHNOLOGIES	VIEW/TP/20170023
37	SATULURU LAKSHMI PRERANA	14NM1A04G0	VEE TECHNOLOGIES	VIEW/TP/20170030
38	BAILAPUDI UMA	14NM1A0405	CAPGEMINI	HR/Campus/201842470
39	BUDDHA GNANESWARI SANTHOSH KUSUMA	14NM1A0417	CAPGEMINI	HR/Campus/201842522
40	CHUKKALA MOUNIKA	14NM1A0425	CAPGEMINI	HR/Campus/201842468
41	EDAYAPURATH SRUTHI	14NM1A0431	CAPGEMINI	HR/Campus/201842483
42	GANIVADA NEELIMA	14NM1A0435	CAPGEMINI	HR/Campus/201842500
43	HANUMANTHU URMILA	14NM1A0446	CAPGEMINI	HR/Campus/201842511
44	KORNALA RAVALI	14NM1A0455	CAPGEMINI	HR/Campus/201842485
45	KUNCHA SWATHI	14NM1A0458	CAPGEMINI	HR/Campus/201842486
46	MANDALI SELVI	14NM1A0467	COGNIZANT(CTS)	VIEW/TP/20170149
47	NAGUBILLI MOUNIKA JYOTHI	14NM1A0472	CAPGEMINI	HR/Campus/201842494
48	POLIREDDY VASAVI	14NM1A0488	CAPGEMINI	HR/Campus/201842498
49	AYYANKALA BHAVANA SAI NARAYANI	14NM1A04C4	CAPGEMINI	HR/Campus/201842495
50	TAMATAPU SEETA SOWJANYA	14NM1A04A9	CAPGEMINI	HR/Campus/201842499
51	VANJARAPU MALATI	14NM1A04B5	CAPGEMINI	HR/Campus/201842520
52	K V SUKANYA	14NM1A04D3	CAPGEMINI	HR/Campus/201842493
53	POTHALA RAVALI KUMARI	14NM1A04F7	CAPGEMINI	HR/Campus/201842521
54	VEGIRAJU DIVYA JANANI	14NM1A04H1	CAPGEMINI	HR/Campus/201842519
55	BOTTA VARA LAKSHMI	15NM5A0403	CAPGEMINI	HR/Campus/201842523
56	TYNALA LAKSHMI	15NM5A0414	CAPGEMINI	HR/Campus/201842524
57	ROBBI MADHURI	13NM1A0497	FACE	VIEW/TP/20170239
58	BASWA DEVI	14NM1A0408	FACE	VIEW/TP/20170245
59	CHALUMURI SWATHI	14NM1A0420	FACE	VIEW/TP/20170250
60	DANDUPATI PRABANDHA	14NM1A0427	FACE	VIEW/TP/20170255
61	GEDELA LALITHA DEVI	14NM1A0440	FACE	VIEW/TP/20170260
62	VUPPILI DIVYASREE	14NM1A04B9	FACE	VIEW/TP/20170275
63	KORUPOLU RENUKA	14NM1A04E3	FACE	VIEW/TP/20170280
64	LONDADI ANUSHA	14NM1A04E6	FACE	VIEW/TP/20170285
65	SIDDA SANDHYA	14NM1A04G5	FACE	VIEW/TP/20170290
66	GARA RESHMA PRIYA	15NM5A0408	FACE	VIEW/TP/20170295
67	AYYAPUREDDI PRIYANKA	14NM1A0404	THINKTEL SOLUTIONS INDIA PVT LTD	VIEW/TP/20170251
68	BAMMALI SWARUPA RANI	14NM1A0407	THINKTEL SOLUTIONS INDIA PVT LTD	VIEW/TP/20170256
69	BUDDHA MOHANA LAKSHMI	14NM1A0418	THINKTEL SOLUTIONS INDIA PVT LTD	VIEW/TP/20170261

70	DAMODARA THANUJA	14NM1A0426	THINKTEL SOLUTIONS INDIA PVT LTD	VIEW/TP/20170266
71	GANNU JHANSI LAXMIBAI	14NM1A0436	THINKTEL SOLUTIONS INDIA PVT LTD	VIEW/TP/20170271
72	VEMPADA VARALAKSHMI	14NM1A04B8	THINKTEL SOLUTIONS INDIA PVT LTD	VIEW/TP/20170276
73	KIRANMAI KASA	14NM1A04E1	THINKTEL SOLUTIONS INDIA PVT LTD	VIEW/TP/20170281
74	SHIKHA SHARMA	14NM1A04G4	THINKTEL SOLUTIONS INDIA PVT LTD	VIEW/TP/20170291
75	DAMMA KANAKA DURGA	15NM5A0406	THINKTEL SOLUTIONS INDIA PVT LTD	VIEW/TP/20170296
76	ARIPAKA SRAVANI	15NM5A0415	THINKTEL SOLUTIONS INDIA PVT LTD	VIEW/TP/20170301
77	PUPPALA RAJESHWARI SAI AISHWARYA	14NM1A0491	ASAP	VIEW/TP/20170050
78	SWATHI SAHU	14NM1A0497	AMAZON	VIEW/TP/20170118
79	KEERTHI MOULIKA	14NM1A04D9	CONDUENT	VIEW/TP/20170063
80	GANGALLA HEMA LATHA	14NM1A0434	MICROMAX	VIEW/TP/20170090
81	GEDELA KIRANMAI	14NM1A0439	MICROMAX	VIEW/TP/20170130
82	GUDAPATI SARANYA	14NM1A0444	MICROMAX	VIEW/TP/20170150
83	JAMI GAYATHRI	14NM1A0448	MICROMAX	VIEW/TP/20170166
84	L CHANDANA DEVI	14NM1A0459	MICROMAX	VIEW/TP/20170177
85	MAJJI SIRISHA	14NM1A0465	MICROMAX	VIEW/TP/20170188
86	PALLI SANDHYA RANI	14NM1A0480	MICROMAX	VIEW/TP/20170207
87	BORA SRAVANI	14NM1A04C7	MICROMAX	VIEW/TP/20170222
88	KALLEPALLI SAROJINI SWAROOPA	14NM1A04D4	MICROMAX	VIEW/TP/20170228
89	KONDAPALLI LAVANYA	14NM1A04E2	MICROMAX	VIEW/TP/20170234
90	GARIKINA SRAVANI	14NM1A0437	KARVY	VIEW/TP/20170132
91	PITTA SWETHA	14NM1A0487	KARVY	VIEW/TP/20170152
92	SIRAPANASETTY VARAHA SHARVANI	14NM1A04A4	KARVY	VIEW/TP/20170178
93	BALIREDDY NIRISHA	14NM1A0406	SUTHERLAND	VIEW/TP/20170226
94	BONDA MADHURI	14NM1A0416	SUTHERLAND	VIEW/TP/20170232
95	CHELLURI SAI USHA	14NM1A0423	SUTHERLAND	VIEW/TP/20170238
96	GORLE JYOTHI	14NM1A0443	SUTHERLAND	VIEW/TP/20170244
97	KANISETTY HARIKA SUPRIYA	14NM1A0452	SUTHERLAND	VIEW/TP/20170006
98	LALAM SOWJANYA	14NM1A0460	SUTHERLAND	VIEW/TP/20170022
99	M DEEPIKA	14NM1A0462	SUTHERLAND	VIEW/TP/20170029
100	PATNAM SUSHMITHA MEHER	14NM1A0482	SUTHERLAND	VIEW/TP/20170279
101	TATA SINDHUSHA	14NM1A04B1	SUTHERLAND	VIEW/TP/20170294
102	KAMINENI SAI MEGHANA	14NM1A04D5	SUTHERLAND	VIEW/TP/20170304
103	KARANAM SWETHA RANI	14NM1A04D7	SUTHERLAND	VIEW/TP/20170309
104	PITHANI UDAYA LAKSHMI	14NM1A04F6	SUTHERLAND	VIEW/TP/20170324
105	ADARI YAGA PRINYANKA	15NM5A0402	SUTHERLAND	VIEW/TP/20170329
106	ELLAPU REVATHI	15NM5A0407	SUTHERLAND	VIEW/TP/20170333
107	SIDDAPU ADILAKSHMI	15NM5A0413	SUTHERLAND	VIEW/TP/20170337
108	MAKIREDDI PADMINI	14NM1A0466	LABTECH INNOVATIONS	VIEW/TP/20170052
109	BODDUPALLI HEMA LATHA	14NM1A0413	Tech Mahindra	VIEW/TP/20170179
110	PENUMATSA HARSHA LEKHA	14NM1A04F5	TECH MAHINDRA	VIEW/TP/20170190
111	BENDALAM SRUTHI	14NM1A0410	Global Logic Technologies pvt ltd.	VIEW/TP/20170119
112	BODDETI TANUJA LAKSHMI	14NM1A0412	Concentrix	VIEW/TP/20170087
113	DONTHALA LALITHA SRAVANI	14NM1A0430	Visteon technical services and Ltd	AP/ADI/HSI29
114	GUTHULA VIJAYA LAKSHMI	15NM5A0409	Daksh concentrix	VIEW/TP/20170058
115	MALLA ASHA JYOTHI	15NM5A0411	RINL vizag steel plant	VIEW/TP/20170124
116	GURUGUBELLI VISHNU PRIYA	14NM1A0445	ARIHANT MAXSELL TECHNOLOGIES	VIEW/TP/20170059

117	AYYAGARI MANI MOULIKA	14NM1A0403	SUTHERLAND	VIEW/TP/20170362
118	BOKAM JAYANTHI	14NM1A0414	SUTHERLAND	VIEW/TP/20170363
119	BONAGIRI VIJAYA LAKSHMI	14NM1A0415	SUTHERLAND	VIEW/TP/20170364
120	DIVYA PRAVALLIKA SEKUBOENA	14NM1A0429	SUTHERLAND	VIEW/TP/20170365
121	GANDI LEELAVATHI	14NM1A0433	SUTHERLAND	VIEW/TP/20170366
122	KANDREGULA ANNAPURNA	14NM1A0450	SUTHERLAND	VIEW/TP/20170367
123	KANDREGULA UMA DEVI	14NM1A0451	SUTHERLAND	VIEW/TP/20170368
124	KORIPPELLA SAIPRIYA	14NM1A0454	SUTHERLAND	VIEW/TP/20170369
125	KOTANA BHAGYA SRAVANTHI	14NM1A0457	SUTHERLAND	VIEW/TP/20170370
126	LENKA DIVYA	14NM1A0461	SUTHERLAND	VIEW/TP/20170371
127	MADEM UMAMAHESWARI	14NM1A0464	SUTHERLAND	VIEW/TP/20170372
128	MASAVARAPU SANTHI	14NM1A0469	THINKTEL SOLUTIONS INDIA PVT LTD	VIEW/TP/20170373
129	MOPADA DHANALAKSHMI	14NM1A0470	THINKTEL SOLUTIONS INDIA PVT LTD	VIEW/TP/20170374
130	NAGAM MADHURI SAI	14NM1A0471	THINKTEL SOLUTIONS INDIA PVT LTD	VIEW/TP/20170375
131	NAGUDALAI VINITHA	14NM1A0473	THINKTEL SOLUTIONS INDIA PVT LTD	VIEW/TP/20170376
132	ADARI MANASA	15NM5A0401	THINKTEL SOLUTIONS INDIA PVT LTD	VIEW/TP/20170377
133	SALIPALLI SIVA MAHA LAKSHMI	14NM1A0499	THINKTEL SOLUTIONS INDIA PVT LTD	VIEW/TP/20170378
134	SINGIREDDY LEELA KUMARI	14NM1A04A3	THINKTEL SOLUTIONS INDIA PVT LTD	VIEW/TP/20170379
135	SNEHA DATTI	14NM1A04A6	THINKTEL SOLUTIONS INDIA PVT LTD	VIEW/TP/20170380
136	SOMIREDDY SRAVANI KUMARI	14NM1A04A7	THINKTEL SOLUTIONS INDIA PVT LTD	VIEW/TP/20170381
137	REDDY MOUNICA	14NM1A04F9	THINKTEL SOLUTIONS INDIA PVT LTD	VIEW/TP/20170382

**Table B. 4.5.b: Placement Information of 2017-18**

In 2016-17, MNC's like Tech Mahindra, Capgemini, HCL, Polaris and other top MNC's visited the campus and selected 121 students with highest package of 3.25 LPA and average of 2.42 LPA.

Electronics & Communication Engineering, 2016-17				
S.No	Student Name	Enrolment No	Employee Name	Appointment No
1	ADDANKI PRIYA	13NM1A0402	CAPGEMINI	HR/Campus/2017101489
2	BARLA SEERESHA	13NM1A0411	CAPGEMINI	HR/Campus/2017101490
3	BONU SRAVANI	13NM1A0418	CAPGEMINI	HR/Campus/2017101472
4	DHARMISSETTI YASODHA	13NM1A0424	CAPGEMINI	HR/Campus/2017101492
5	ATCHI HARIKA	13NM1A0437	CAPGEMINI	HR/Campus/2017101493
6	INDUKURI INDIRA	13NM1A0439	CAPGEMINI	HR/Campus/2017101494
7	KILLAPARTHY RAMYA MADHURI	13NM1A0449	CAPGEMINI	HR/Campus/2017101461
8	KOMATINENI SINDU SREE	13NM1A0453	CAPGEMINI	HR/Campus/2017101496
9	KOTA MANISHA	13NM1A0454	CAPGEMINI	HR/Campus/2017101484
10	KUNDRAPU YAMINI	13NM1A0457	CAPGEMINI	HR/Campus/2017101498
11	MADDI ASRITHA	13NM1A0464	CAPGEMINI	HR/Campus/2017101499
12	MANCHIRAJU SIRISHA KAMESWARIDEVI	13NM1A0467	CAPGEMINI	HR/Campus/2017101500
13	MEDAPATI SUBHASHREE	13NM1A0473	CAPGEMINI	HR/Campus/2017101530
14	SEELAM LATHA SREE	13NM1A04A3	CAPGEMINI	HR/Campus/2017101502
15	TARAPAREDDY KALYANI	13NM1A04B4	CAPGEMINI	HR/Campus/2017101503

16	VENKUMAHANATHI THEJHASWI	13NM1A04B7	CAPGEMINI	HR/Campus/2017101488
17	ADARI DIVYA KANAKA MAHALAKSHMI	13NM1A0401	TECH MAHINDRA	1488817/ELTP/2017
18	ADHIBATLA RAMYA	13NM1A0403	TECH MAHINDRA	1488818/ELTP/2017
19	BADAGALA BINDUSHA	13NM1A0407	TECH MAHINDRA	1488819/ELTP/2017
20	BANDARU NAVYA PARVATHI	13NM1A0409	TECH MAHINDRA	1488820/ELTP/2017
21	BHESETTY YOGA NANDINI APARNA	13NM1A0412	TECH MAHINDRA	1488821/ELTP/2017
22	DEVU JHANSI LAKSHMI	13NM1A0423	TECH MAHINDRA	1488822/ELTP/2017
23	DWARA SUSHMIJA SAILAJA	13NM1A0428	TECH MAHINDRA	1488823/ELTP/2017
24	GURU VIKASA AKHILA	13NM1A0436	TECH MAHINDRA	1488924/ELTP/2017
25	KAKARA LAVANYA	13NM1A0441	TECH MAHINDRA	1488925/ELTP/2017
26	KHATIZA FARIHEEN	13NM1A0448	TECH MAHINDRA	1488926/ELTP/2017
27	KOLATI NIVEDITA	13NM1A0451	TECH MAHINDRA	1488927/ELTP/2017
28	KOTRA SANDHYA RANI	13NM1A0455	TECH MAHINDRA	1488928/ELTP/2017
29	MADAKASSERIYIL BINDHU	13NM1A0462	TECH MAHINDRA	1488929/ELTP/2017
30	MUMMANA BHAVANI	13NM1A0474	TECH MAHINDRA	1488930/ELTP/2017
31	PASUMARTHI PRATHYUSHA	13NM1A0482	TECH MAHINDRA	1488931/ELTP/2017
32	PEDDI HASINI	13NM1A0484	TECH MAHINDRA	1488932/ELTP/2017
33	REGULAGEDDA SAI ADBUTHA	13NM1A0496	TECH MAHINDRA	1488933/ELTP/2017
34	S.GAUTAMI	13NM1A0499	TECH MAHINDRA	1488934/ELTP/2017
35	S.HARSHITHA	13NM1A04A0	TECH MAHINDRA	1488936/ELTP/2017
36	S.BHAGYA SREE	13NM1A04A2	TECH MAHINDRA	1488937/ELTP/2017
37	RASQUINHA SHARMILA MOUNICA	13NM1A04A7	TECH MAHINDRA	1488938/ELTP/2017
38	SIRIPURAPU JYOTHSNA	13NM1A04B0	TECH MAHINDRA	1488939/ELTP/2017
39	YENDAMUDI SUNITHA	13NM1A04B2	TECH MAHINDRA	1488940/ELTP/2017
40	TELUKULA SWETHA	13NM1A04B6	TECH MAHINDRA	1488941/ELTP/2017
41	UMMIDI DURGA BHAWANI	13NM1A04B9	TECH MAHINDRA	1488942/ELTP/2017
42	VARADARUREDDY SAIPRIYA	13NM1A04C4	TECH MAHINDRA	1488943/ELTP/2017
43	VEMULAKONDA VIJAYA LAKSHMI	13NM1A04D0	TECH MAHINDRA	1488871/ELTP/2017
44	BALIREDDY URMILA	14NM5A0403	TECH MAHINDRA	1488872/ELTP/2017
45	GORAPALLI PRAMEELA	14NM5A0407	TECH MAHINDRA	1488873/ELTP/2017
46	PAILA ANUSHA	14NM5A0417	TECH	1488874/ELTP/2017

			MAHINDRA	
47	YARABALA ANITHA	14NM5A0425	TECH MAHINDRA	1488875/ELTP/2017
48	BADANA PRASANTHI	13NM1A0408	HCL	VIEW/TP/20170229
49	BODALA ANUSHA	13NM1A0413	HCL	VIEW/TP/20170231
50	BODDU TEJASWI	13NM1A0415	HCL	VIEW/TP/20170233
51	BOJJA BHARATHI	13NM1A0416	HCL	VIEW/TP/20170235
52	BOMMALI ISWARYA	13NM1A0417	HCL	VIEW/TP/20170237
53	BORA CHANDANA	13NM1A0419	HCL	VIEW/TP/20170239
54	BOYINA AMBICA DEVI	13NM1A0420	HCL	VIEW/TP/20170241
55	BURI YASASRI	13NM1A0421	HCL	VIEW/TP/20170243
56	GORLE LALITHA	13NM1A0433	SUTHERLAND	VIEW/TP/20170137
57	GUNURU BINDU VENKATA CHANDRIKA	13NM1A0434	HCL	VIEW/TP/20170245
58	GUREVELLI MADHAVI	13NM1A0435	SUTHERLAND	VIEW/TP/20170138
59	KALLA NIKITA	13NM1A0443	HCL	VIEW/TP/20170247
60	KANDRU VINEELA	13NM1A0444	HCL	VIEW/TP/20170249
61	KEDARISSETTY JHANSI	13NM1A0447	HCL	VIEW/TP/20170251
62	KILLI SONIYA	13NM1A0450	HCL	VIEW/TP/20170253
63	KUCHIPUDI SOWJANYA	13NM1A0456	HCL	VIEW/TP/20170255
64	KURADA GANGA BHAVANI	13NM1A0458	HCL	VIEW/TP/20170257
65	LALAM VARALAKSHMI	13NM1A0459	HCL	VIEW/TP/20170259
66	MADDALA HEMALATHA	13NM1A0463	HCL	VIEW/TP/20170261
67	PENUMATSA MANASA	13NM1A0466	HCL	VIEW/TP/20170263
68	MANDALA LALITHA	13NM1A0468	SUTHERLAND	VIEW/TP/20170145
69	MANDALA RAMANI	13NM1A0469	SUTHERLAND	VIEW/TP/20170146
70	MUNAGAPAKA LAKSHMI	13NM1A0475	HCL	VIEW/TP/20170265
71	M VENKATA ANJALI UMAMAHESWARI	13NM1A0476	HCL	VIEW/TP/20170267
72	NALLAM LAKSHMI BAVANI SIVA SHRUTI	13NM1A0478	HCL	VIEW/TP/20170269
73	NANEPALLI VASANTHI	13NM1A0479	POLARIS	VIEW/TP/20170030
74	PAILA BHAVANI	13NM1A0480	HCL	VIEW/TP/20170271
75	PATIVADA MAMATHA	13NM1A0483	HCL	VIEW/TP/20170273
76	PENKE BHARATHI	13NM1A0485	HCL	VIEW/TP/20170275
77	PENTAPATI SWETHA	13NM1A0486	HCL	VIEW/TP/20170277
78	PILLA T.S.SAILAJA	13NM1A0488	HCL	VIEW/TP/20170279
79	PINNAMARAJU.S.S.TEJAWINI	13NM1A0489	HCL	VIEW/TP/20170281
80	RAJANA SANDHYA	13NM1A0491	SUTHERLAND	VIEW/TP/20170149
81	RAVALLA SOWJANYA	13NM1A0493	HCL	VIEW/TP/20170283
82	RAYEEBONU HARITHA	13NM1A0494	HCL	VIEW/TP/20170285
83	REESU SHYAMALA VENKATA LAXMI	13NM1A0495	HCL	VIEW/TP/20170287
84	SALAPU SUKANYA	13NM1A04A1	HCL	VIEW/TP/20170289
85	SESHAPU DURGA BHAVANI	13NM1A04A4	HCL	VIEW/TP/20170291
86	SETTI TEJASWI	13NM1A04A5	HCL	VIEW/TP/20170293
87	SHEIK SYRABANU	13NM1A04A8	HCL	VIEW/TP/20170295
88	SIRAGADA REETHU SIVANI	13NM1A04A9	HCL	VIEW/TP/20170296
89	TEELLA JANAKI	13NM1A04B5	SUTHERLAND	VIEW/TP/20170152
90	TOKACHICHU YASASWINI	13NM1A04B8	SUTHERLAND	VIEW/TP/20170153
91	UPPALADU POORNA	13NM1A04C0	HCL	VIEW/TP/20170297
92	VARANASI LALITHA	13NM1A04C5	SUTHERLAND	VIEW/TP/20170156
93	VECHA MEEDAKSHI	13NM1A04C7	SUTHERLAND	VIEW/TP/20170157
94	VECHALAPU SIREESHA	13NM1A04C8	POLARIS	VIEW/TP/20170059
95	VEGI SIRISHA	13NM1A04C9	HCL	VIEW/TP/20170298
96	VOODA SOWMYA	13NM1A04D2	SUTHERLAND	VIEW/TP/20170158
97	YELLETI NIKITHA	13NM1A04D3	SUTHERLAND	VIEW/TP/20170159
98	ANAPARTHI TULASI AMEENA SUNITHA	14NM5A0401	HCL	VIEW/TP/20170299


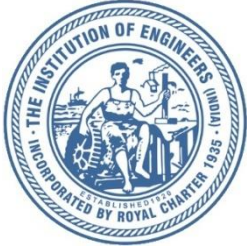


99	BOCHA BHARATHI	14NM5A0404	HCL	VIEW/TP/20170300
100	BUDHA YAMINI	14NM5A0405	HCL	VIEW/TP/20170301
101	GANTA VENKATI	14NM5A0406	SUTHERLAND	VIEW/TP/20170161
102	KARRI VANAJA	14NM5A0410	HCL	VIEW/TP/20170302
103	KINTADA DEVI	14NM5A0411	HCL	VIEW/TP/20170303
104	KOLIMALI SHANKAR MANI	14NM5A0412	SUTHERLAND	VIEW/TP/20170162
105	KOTTURU SATYAVATHI	14NM5A0415	HCL	VIEW/TP/20170304
106	MONDU RAMYA KRISHNA	14NM5A0419	SUTHERLAND	VIEW/TP/20170163
107	REYYA SANGEETHA	14NM5A0420	SUTHERLAND	VIEW/TP/20170164
108	RUTHALA JANAKI	14NM5A0421	SUTHERLAND	VIEW/TP/20170165
109	VANGALA SIREESHA	14NM5A0423	HCL	VIEW/TP/20170305
110	GURRAM KOMALA SAI	13NM1A0452	GENPACT	VIEW/TP/20170071
111	INDUGU SAIRAVALI	13NM1A0438	concentrix	VIEW/TP/20170005
112	KARRI LOKESWARI	13NM1A0446	HGS	VIEW/TP/20170224
113	PASALA BHAVANI	13NM1A0481	HGS	VIEW/TP/20170228
114	SHAIK NURJAHAN	13NM1A04A6	HGS	VIEW/TP/20170230
115	VANAPALLI SREE DEVI	13NM1A04C3	HGS	VIEW/TP/20170232
116	AVADUTALA SWETHA PRIYA	14NM5A0402	HGS	VIEW/TP/20170236
117	GURRALA DIVYA	14NM5A0408	HGS	VIEW/TP/20170238
118	TIMMIRISSETTI VARALAKSHMI	14NM5A0422	HGS	VIEW/TP/20170240
119	SUNDARAPU GIRIJA	13NM1A04B1	SRIVARI ENTERPRISES	VIEW/TP/20170063
120	KONDAPU SRAVANI	14NM5A0413	SRIVARI ENTERPRISES	VIEW/TP/20170075
121	PUTTA KAVYA	14NM5A0418	SRIVARI ENTERPRISES	VIEW/TP/20170083
122	AINAVILLI LAKSHMI PRIYANKA	13NM1A0404	HCL	VIEW/TP/20170329
123	CHOKKAKULA TANUJA	13NM1A0422	HCL	VIEW/TP/20170330
124	GANDREDDY HEMA SIREESHA	13NM1A0430	HCL	VIEW/TP/20170331
125	GORLE REVATHI	13NM1A0431	HCL	VIEW/TP/20170332
126	KANTUMUTCHU NAVEENA	13NM1A0445	HCL	VIEW/TP/20170333
127	RONGALI RENUKA	13NM1A0498	HCL	VIEW/TP/20170334

**Table B. 4.5.c: Placement Information of 2016-17**

#### 4.6 Professional Activities (20)

##### 4.6.1. Professional Societies / Chapters and Organizing Engineering Events (5)

The department had initiated two student chapters, IETE and IE(I) in the years 2017 and 2018 in order to have a mutual exchange of information for technical up gradation with technical experts to enhance the knowledge of students and staff.

Sl. No	Professional Society	Logo
1.	Institution of Electronics and Telecommunication Engineers (IETE).	
2.	Institution of Engineers (IE)	
3.	Andhra Pradesh State Skill Development Cooperation	
4.	Andhra Pradesh Information Technology Academy	

**Table B.4.6.1.a: Professional Societies Details**

**Students Enrolled in IETE Chapter:**

Sl. No	Academic Year	Name of the society	No of Membership Students
1.	2017-18	IETE	62
2.	2018-19	IETE	52
3.	2019-20	IETE	70

**Table B 4.6.1.b: Students Enrolment Information**



**Activities conducted under professional bodies:****Academic Year: 2018-19**

Sl. No	Type of Activity	Topic	Date of Activity	No of students Participated	Outcome	Relevance to POs & PSOs
1.	Seminar	Current Market Job and Technology trends	20.02.2019	186	<ul style="list-style-type: none"> <li>Changes as per the market strategies in order to upgrade the technology skills for the new job prospects.</li> </ul>	PO6, PO7, PO8, PO12
2.	Seminar	Latest Trends in Radar Systems	14.02.2019	153	<ul style="list-style-type: none"> <li>Innovative ideas in RADAR Maritime &amp; Ship Building.</li> <li>Real time analysis of RADAR functioning in the devices.</li> </ul>	PO9, PO12 PSO2
3	Seminar	GATE Awareness Program	30.01.2019	175	<ul style="list-style-type: none"> <li>Higher studies and opportunities.</li> </ul>	PO6, PO10 PSO1, PSO2
4.	Workshop	Build Box	26.12.2018 to 10.01.2019	165	<ul style="list-style-type: none"> <li>Create original 3.0D games without coding.</li> </ul>	PO8, PO9, PO10
5.	Seminar	Empowering India	08.09.2018	123	<ul style="list-style-type: none"> <li>Empowering Industry needs, that brings change in the individual.</li> </ul>	PO7, PO8, PO10
6.	Workshop	IUCEE Scale AP Consortium Regional Student Workshop	26.07.2018 to 28.07.2018	150	<ul style="list-style-type: none"> <li>Improve Engineering education, in tandem with industry and academia, through empowering student as means of a positive change in local societies, imbued with pragmatic efforts aimed at creating holistic value.</li> </ul>	PO8, PO9, PO10
7.	Workshop	Coursera- Internet of Things (IoT)	14.05.2018 to 28.05.2018	108	<ul style="list-style-type: none"> <li>Basic knowledge in Internet of Things.</li> <li>Real time hardware application implementation on Arduino and raspberry Pi boards.</li> </ul>	PO5, PO12 PSO1

**Academic Year: 2017-18**

Sl. No	Type of Activity	Topic	Date of Activity	No of students Participated	Outcome	Relevance to POs & PSOs
1.	Seminar	Core of Electronics & Electromagnetic Interfacing	17.02.2018	370	<ul style="list-style-type: none"> <li>Grab the information about electromagnetic devices used in real time applications.</li> </ul>	PO1, PO2, PO3, PO4 PSO2
2.	Workshop	Embedded systems Fundamentals	11.12.2017 to 16.12.2017	130	<ul style="list-style-type: none"> <li>Create practical knowledge in hardware designing and programming.</li> </ul>	PO5, PO9, PO12 PSO1
3.	Seminar	Career Simplified	25.11.2017	120	<ul style="list-style-type: none"> <li>Create awareness about the job profiles associated with ECE</li> </ul>	PO10
4.	Seminar	IT trends and Career Development	16.09.2017	195	<ul style="list-style-type: none"> <li>Help learners to reflect on their ambitions, interests, qualifications and abilities.</li> <li>Understand the labour market, education systems and IT related services.</li> </ul>	PO10, PO12
5.	Seminar	Manifest your dreams	16.08.2017	165	<ul style="list-style-type: none"> <li>Challenge habitual thinking patterns and replace them with positive behaviour.</li> </ul>	PO9, PO10
6.	Workshop	PCB Design Workshop	30.06.2017 to 01.07.2017	130	<ul style="list-style-type: none"> <li>Create real time exposure of printed circuit boards for industrial needs.</li> </ul>	PO3, PO5, PO12 PSO1

## Academic Year: 2016-17

Sl. No	Type of Activity	Topic	Date of Activity	No of students Participated	Outcome	Relevance to POs & PSOs
1.	Seminar	MEMS Technology for Engineers	18.02.2017	195	<ul style="list-style-type: none"> <li>Provide in depth knowledge about micro sensors and actuators in MEMS applications.</li> </ul>	PO1, PO6, PO12 PSO1
2.	Seminar	Embedded Systems and Networking	09.02.2017	175	<ul style="list-style-type: none"> <li>Provide recent trends in real time designing of embedded systems.</li> </ul>	PO3, PO4, PO5, PO7 PSO1
3.	Workshop	Embedded system Design using PSOC	27.12.2016 to 29.12.2016	150	<ul style="list-style-type: none"> <li>Create knowledge in hardware programming for various embedded boards.</li> </ul>	PO5, PO9, PO12 PSO1
4.	Seminar	Analog IC design	30.09.2016	160	<ul style="list-style-type: none"> <li>Provide exposure on innovative and interesting methods in analog system design technology.</li> </ul>	PO1, PO2, PO3, PO4, PO5 PSO1
5.	Workshop	ROB ZEST	18.08.2016 to 20.08.2016	110	<ul style="list-style-type: none"> <li>Design lane detection robot for Defence applications.</li> </ul>	PO5, PO9, PO10, PO12 PSO1
6.	Seminar	Challenges of working Under Water	15.07.2016	275	<ul style="list-style-type: none"> <li>Provide fundamental concepts of Under Water system in submarines.</li> </ul>	PO6, PO7, PO12 PSO2
7.	Workshop	iBootup IoT series	28.06.2016 to 30.06.2016	155	<ul style="list-style-type: none"> <li>Create real time hardware projects using Internet of Things (IoT).</li> </ul>	PO5, PO9, PO12 PSO1
8.	Workshop	Mixed Signal IC Design using Mentor graphics	14.06.2016 to 15.06.2016	30	<ul style="list-style-type: none"> <li>Provide practical design of circuits using advanced software in VLSI technology.</li> </ul>	PO3, PO4, PO5 PSO1

**Activities conducted under APITA:****Academic Year 2018-19**

Sl. No	Type of Activity	Topic	Date of Activity	No of students Participated	Outcome	Relevance to POs & PSOs
1.	Workshop	IBootUpIoT Series	16/08/2018 to 18/08/2018	15	<ul style="list-style-type: none"> <li>• Create real time hardware projects using Internet of Things (IoT).</li> </ul>	PO5, PO9, PO12 PSO1
2.	Workshop	SoftSkills	20 <sup>th</sup> to 25-Aug-2018	175	<ul style="list-style-type: none"> <li>• Provide exposure on communication skills and team work</li> </ul>	PO10
3.	Workshop	NI LAB VIEW	24 <sup>th</sup> , 25 <sup>th</sup> , 26-Sep-2018	38	<ul style="list-style-type: none"> <li>• Provide exposure on practical design of circuits using advanced software</li> </ul>	PO3, PO4, PO5 PSO1
4.	Workshop	Unity 3D	03.10.2018	20	<ul style="list-style-type: none"> <li>• Create designs in 3D format</li> </ul>	PO8, PO9, PO10
5.	Seminar	Skills First Jobs Follow	28 <sup>th</sup> & 29 <sup>th</sup> Jan 2019	89	<ul style="list-style-type: none"> <li>• Create awareness on skills development and job profile</li> </ul>	PO10
6.	Guest Lecture	A Seminar on International Career Guidance	19.03.2019	30	<ul style="list-style-type: none"> <li>• Help learners to reflect on their ambitions, interests, qualifications and abilities.</li> </ul>	PO10, PO12

## Photos of Seminar/Workshop

Academic Year: 2018-19



**Seminar on “Latest trends on Radar Systems” Date: 14<sup>th</sup> Feb 2019.**

**Dr.K.S.Ranga Rao, Ph.D (Engg), Principal Consultant for Centre of Excellence in Maritime & Ship Building (CEMS)**, enlightened the participants on the use of Radar systems in practical applications and their role in air traffic control systems. Also highlighted the opportunities of self-employment in different sectors for women and provided them basic knowledge of Radar systems etc.



**Seminar on “Current Market Job and Technology trends” Date: 20<sup>th</sup> Feb 2019.**

**Mr. K.Anil Kumar of ISI Consultant** had given inputs about current job scenario and challenges in using new technologies in various industries. Reiterated on developing self-confidence by being aware of day to day advancements in technologies.



**Guest lecture on “ Higher Education & GATE Awareness program” Date: 30<sup>th</sup> Jan 2019.**

**Mr.K.Hareesh**, The Director of ‘The GATE Academy’ Visakhapatnam, delivered the importance of GATE examination in higher education and job opportunities lined up in public sector.



**Workshop on “SCALE” Date: 26<sup>th</sup> to 28<sup>th</sup> July 2018.**

Workshop organized by **Mr. Shreya Adabala & Rafi Shaikin** association with APSSDC.

They emphasized on achieving a strong and potential student network, where students all over the country can collaborate and contribute towards engineering education and development, while taking forward the ethos of the organization. Establishing a strong collaboration with industries, providing a sustainable support to the student community by joining hands on technical support in association with **IETE - VIEW STUDENT CHAPTER**.



**Workshop on “Build Box” Date: 26<sup>th</sup> Dec 2018 to 10<sup>th</sup> Jan 2019.**

Workshop organized by **T.Ravi Kishore, P.Alluri Raju** in association with **APSSDC, under IE Student Chapter**. The participants equipped with the knowledge of how Build box supports many different software's such as Android Studio, Eclipse, X Code, Visual Studio and many others. They also be aware of how the Build box users use structural designs without coding

**Workshop on Wil(Women in Leadership) power on 3<sup>rd</sup> November 2018.**

**Wil(Women in Leadership) power** workshop had organized under **SHRD**, where ECE students participated . This workshop makes students to know about social awareness, advancement technical fields and develop their career . All the students got qualified in the course conducted by **Ms. Indu Madhavi Iragavarapu, Ms. Ekta Singh & Ms. Aziz Tayyaba**.

**A Workshop on Unity 3D one day awareness on 3<sup>rd</sup> october 2018.**

**Unity 3D one day awareness** workshop had organized under **APITA**, where 20 ECE students participated for real time functioning on **UNITY 3D Lab** . This workshop makes students to know about how to create **3D** games and applications for mobile, desktop, the web, and consoles. All the students got qualified in the course conducted by **Mr.Aravind Neelakantan**.

**A Workshop on NI Lab VIEW on 24<sup>th</sup> to 26<sup>th</sup> september 2018.**

**NI Lab VIEW** workshop had organized under **APITA**, where 38 ECE students participated for real time functioning on **UNITY 3D Lab** . This workshop makes students to know about how Lab VIEW is commonly **used** for data acquisition, instrument control, and industrial automation on a variety of operating systems (OSs), including Microsoft Windows, various versions of Unix, Linux, and MACOS. All the students got qualified in the course conducted by **Mr.Syed &Mr. Prakash**.



**Seminar on “Empowering India” Date: 8<sup>th</sup> Sep 2018.**

In order to bridge the gap between Industry and Academia, A ‘Live Project model of hardware Expo’ was conducted to show the real time applications required for the students. It was conducted by IETE VIEW Student Chapter.

**A Workshop on Soft Skills on 20<sup>th</sup> to 25<sup>th</sup> August 2018.**

**Soft Skills** workshop had organized under **APITA**, where 175 ECE students participated. This workshop makes students to make it easier to form relationships with people, create trust and dependability, and lead teams. All the students got qualified in the course conducted by **Ms. Anagha**.



**Workshop on “Internet of Things (IoT)” Date: 14<sup>th</sup> to 28<sup>th</sup> May 2018.**

Internet of things (IoT) workshop had organized under **IETE VIEW STUDENT CHAPTER**. Students were demonstrated to assemble for real time functioning of hardware boards like Arduino and Raspberry Pi. The workshop helps to bridge the Industrial projects and Educational system. All the participants qualified in the course conducted by Coursera under **Mr. K NagaRaju & Mr. P. Mahindar of APSSDC**.



**Academic Year: 2017-18****Guest Lecture on “Core of Electronics and Electromagnetic Interfacing” Date: 17<sup>th</sup> Feb 2018**

**Dr.B.Subba Rao, Director of SAMEER(Society for Applied Microwave Electronics Engineering and Research)** delivered a lecture on basics of electronic components and its importance in real time microwave applications in industries. He enlightened the women empowerment in the industries and brought more awareness in the employment opportunities which makes bridge between industries and Educational Institutions. The lecture took place under the association of **IETE VIEW STUDENT CHAPTER.**



### Workshop on “Embedded Systems Fundamentals” Date: 11<sup>th</sup> to 16<sup>th</sup> Dec 2017

Workshop on ‘Embedded systems Fundamentals’ organized by **IETE VIEW STUDENT CHAPTER**. The prime focus of this workshop is to bridge the gap between Industry and academia in making students active participation in Real time functioning of hardwares using Arduino & Raspberry Pi. All the students qualified in the course conducted by Coursera under **Mr. K. NagaRaju & Mr. P. Mahindar of APSSDC**.



### Guest Lecture on “Career Simplified” Date: 25<sup>th</sup> Nov 2017.

Career guidance for engineering students helps people to reflect on their ambitions, interests, qualifications and abilities. Lecture delivered by **Mr. Ranjeet Kumar Sah, Director of VIZAG Gate Forum, Sparks Defence Academy, Visakhapatnam**. He enlightened the students with various study and job opportunities after higher education. He motivated students towards entrepreneur and self employment.



### Guest Lecture on “IT Trends & Career Development “ Date: 16<sup>th</sup> Sep 2017

A guest lecture delivered by **Mr. KRISHNA GOMPA**, Senior Director- WIZNI solutions, on “IT Trends & Career Development” CA under IETE VIEW STUDENT CHAPTER.

**This program helps the students** to reflect on the ambitions, interests, qualifications and abilities. It also helps them to understand the lab or market and education systems and IT. He also emphasized on how educational opportunities are more accessible by organizing, systematizing and making it available when and where people need it.



### Guest lecture on “Manifest your Dreams” Date: 16<sup>th</sup> August 2017.

A seminar on “Manifest your dreams” delivered by our proud Alumnus, **Ms.Maneesha Mishra, Senior System Engineer, Infosys Ltd,**

This seminar helps the learners to challenge habitual thinking patterns and replace them with more positive behaviours. How learners should develop self-motivation skills, become focused on achieving self-set goals and become more confident in their ability to succeed. Creating a vision board can be a powerful way of tapping into your deepest desires, visualizing your dreams, and bringing them to the forefront of your consciousness. This program is organized under **IETE VIEW Student Chapter.**



### Workshop on “PCB Designing” Date: 30<sup>th</sup> June & 1<sup>st</sup> July 2017

**IETE VIEW STUDENT CHAPTER** organized a Two Day Workshop on PCB Designing. This workshop enlightened the learners with real time design of hardware components on PCB boards and PCB circuit layout. The session was demonstrated by **Mr. K.Sanjeev, QUE technologies, Vijayawada.** All students designed the PCB boards and obtained real time applications.

## Academic Year: 2016-17


**Guest lecture on “MEMS Technology for Engineers” Date: 18<sup>th</sup> Feb 2017**

**Prof.D.V.RamaKotireddy, IETE Secretary for Vizag Section, HoD Dept. of EIE, Andhra University College of Engineering** delivered a lecture, highlighting the fundamental concepts of the Micro- Electro Mechanical Systems (MEMS) technology. Also provided the basics of micro devices like micro sensors, microelectronics etc. Students learnt the usage of micro components and conversion of energies.



**Guest lecture on “Embedded systems and networking” Date: 9<sup>th</sup> Feb 2017**

Mr. Abraham Varghese, *Life fellow of IETE, Scientist-G, NSTL*, delivered a guest lecture. This lecture enabled the learners about the real time embedded designs of different advanced microcontrollers. Students also learnt the C programming concepts, IDE tools and Hardware Modules and latest trends in embedded systems and hardware module design in real time environment.



**Workshop on “Embedded system design using PSOC” Date: 27<sup>th</sup> to 29<sup>th</sup> Dec 2016.**

Workshop on Embedded systems design using PSOC conducted by industrial experts from “Unistring Tech Solutions” where the students learnt about the real time hardware programming using C language for different microcontroller boards. It enlightened the skills of the students into real time industrial applications. All students received participant certificates. This was organised by NAVITAS Association.



**Guest lecture on “Analog IC design” Date: 30<sup>th</sup> Sep 2016**

**B. Chakravarthi, Senior Design Engineer, INTEL, Bangalore,** has delivered guest lecture on “Analog IC design”.

The objective of this seminar is to give exposure of Analog System Design to the participants. This training program will introduce new innovative and interesting methods and learning subjects like Signal Processing, Linear Integrated Circuits, Process control and many others by using different design methodologies.

**Workshop on “ROBO ZEST” Date: 18<sup>th</sup> to 20<sup>th</sup> August 2016**

To enhance the student ability in taking minor and major projects using different development boards. In this workshop, students learnt the basics of real time applications in embedded systems with programming skills. This workshop helped to enrich the team work and communication skills which make to learn new ways of outcome based projects in reality.

**Mr.K.Sirish, Trainee & Mr. S. Ram Kumar, Trainee of ROBO ZEST** had guided the students in better way of hardware skill development.



**Guest Lecture on “challenges of working Under Water” Date: 15<sup>th</sup> July 2016.**

Guest Lecture delivered on Fundamental concepts of the Under water system in submarines. It was delivered by **Mr.Ch.Durga Malleswar, IETE Chairman for Vizag Section, Director, NSTL**. In this lecture, participants learnt the basic concepts of modern Anti-Submarine warfare, the integration and coordination of all forces available. Participants also learnt basic characteristics of each force that should be evaluated and its inherent capabilities and limitations, detection methods, fire control systems, and weaponry.



**Workshop on “iBootup IoT series” Date: 26<sup>th</sup> to 30<sup>th</sup> June 2016**

iBootup IoT series workshop was organized under **IETE VIEW STUDENT CHAPTER**. Students participated for real time functioning of hardware boards like Arduino and Raspberry Pi. The workshop bridges the gap between Industrial projects and Educational systems. All the students qualified in this course conducted by Coursera under **Mr. G. Naresh & Mr.P. Manikar of APSSDC**.





### 2- Day Workshop on “Mixed Signal IC design using Mentor Graphics EDA tools”

**Date: 14<sup>th</sup> & 15<sup>th</sup> June 2016**

To enhance the student ability to take up minor and major projects using VLSI EDA tools, The department has organized a Two Day workshop on ‘Mixed signal IC design using Mentor graphics’ by **Mr. P.Sarath of COREL technologies** during 14<sup>th</sup> & 15<sup>th</sup> June 2016.

Students were given participation certificates.

#### 4.6.2. Publication of Technical Magazines, Newsletters, etc. (5)

The Department is publishing a Bi-monthly newsletter containing Inter and Intra Institution events, technical innovations or activities conducted/participated since 2017 – 2020.

#### Editorial Board Members (2019-20):

1.	Chief Editor	Dr.J.Sudhakar, Principal
2.	Editor	Dr.Ch. Ramesh Babu, HoD,ECE
3.	Members	Mrs. T.SandhyaKumari, Asst. Professor, ECE Mr. D. Tilak Raju, Asst. Professor, ECE Dr.T.RadhaKrishna, Assoc. Professor, BS&H Ms. B.Jayasree, III ECE Student Ms. T.Yasodha Krishna, III ECE Student

ECE HERALD, The departments' newsletter's first page provides Department's Vision and Mission along with the messages of Principal and Head of the Dept. This page also contains photographs of different technical events organized under department association NAVITAS. The second page provides faculty awards, achievements in the fields of Research and technical courses. The third page consist of student awards and achievements in curricular and extra-curricular activities conducted at inter and intra college, university levels. The fourth page interrelates about campus placements.

#### Academic Year 2019-20

S.No	Dept. News Letter	Period	Volume & Issue
1.	ECE HERALD	Jan-Mar 2020	Volume-6 & Issue-1

#### Academic Year 2018-19

S.No	Dept. News Letter	Period	Volume & Issue
1.	ECE HERALD	Jan-Feb	Volume-5 & Issue-1
2.	ECE HERALD	Mar-Apr	Volume-5 & Issue-2
3.	ECE HERALD	May-Jun	Volume-5 & Issue-3
4.	ECE HERALD	Jul-Aug	Volume-5 & Issue-4
5.	ECE HERALD	Sept-Oct	Volume-5 & Issue-5
6.	ECE HERALD	Nov-Dec	Volume-5 & Issue-6

#### Academic Year 2017-18

S.No	Dept. News Letter	Period	Volume & Issue
1.	ECE HERALD	Jan-Mar	Volume-4 & Issue-1
2.	ECE HERALD	Apr-Jun	Volume-4 & Issue-2
3.	ECE HERALD	Jul-Sept	Volume-4 & Issue-3
4.	ECE HERALD	Oct-Dec	Volume-4 & Issue-4

#### Academic Year 2016-17

S.No	Dept. News Letter	Period	Volume & Issue
1.	ECE HERALD	Jan-Jun	Volume-3 & Issue-1
2.	ECE HERALD	Jul-Dec	Volume-3 & Issue-2

**4.6.3. Participation in Inter-institution Events by Students of the Program of Study (10)**

*(The Department shall provide a table indicating those publications, which received awards in the events/conferences organized by other institutes).*

The department of ECE is very keen on women empowerment that makes the students to stand as an individual in the society. So, students are encouraged to participate enormously in various technical and non-technical events in order to have global exposure by improving their personal skills to maintain the emotional balance to well fit in the social setting.

<b>Inter-Institution events information Electronics and Communication Engineering – (2018-19)</b>					
<b>WORK SHOPS</b>					
<b>S.NO</b>	<b>DATE</b>	<b>EVENT</b>	<b>ORGANIZED INSTITUTE</b>	<b>NAME OF THE STUDENT</b>	<b>AWARD/ PRIZED</b>
1	11-02-2019 to 12-02-2019	Eclectique 2K19	JNTU, VIZIANAGARAM	K. Sai Komali	3 <sup>rd</sup> Prize
2	11-02-2019 to 12-02-2019	Project Expo (IoT Based Industrial Safety)	JNTU, VIZIANAGARAM	M.Deekshitha	3 <sup>rd</sup> Prize
3	11-02-2019 to 12-02-2019	Project Expo (IoT Based Industrial Safety)	JNTU, VIZIANAGARAM	M.Jyothirmayee	3 <sup>rd</sup> Prize

**Table B 4.6.3.a: Inter-Institution Student Prizes of Workshops of 2018-19**

<b>Inter-Institution events information Electronics and Communication Engineering – (2017-18)</b>					
<b>WORK SHOPS</b>					
<b>S.NO</b>	<b>DATE</b>	<b>EVENT</b>	<b>ORGANIZED INSTITUTE</b>	<b>NAME OF THE STUDENT</b>	<b>AWARD/ PRIZED</b>
1	07-10-2017	Innovation Fair (Project Expo)	JNTU, KAKINADA	1. P ChandanaSravani, 2. V Tirumala Gayatri, 3. S Jyothi, 4. S Prasanna Lakshmi	1 <sup>st</sup> prize
<b>ALL INDIA HARDWARE EXPO</b>					
1	25-01-2018	Smart India Hackathon (Technology for Rural Development)	AICTE	1. M.Selvi 2. T.Sindhusha 3. P.Sushmita 4. M.Sirisha 5. A.Moulika 6. B.SravyaSree	Selected
2	25-01-2018	Smart India Hackathon (IoT Based Green House Monitoring)	AICTE	1. J.V.Sakunthala 2. G.Sravanthi 3. K.Mamatha 4. G.Shanthi 5. S.H.Sandhya 6. V.N.Priya	Selected
<b>TECHNICAL EVENTS</b>					
1	23-02-2018	Poster Presentation (Sensors and Actuators)	ANDHRA UNIVERSITY	1. SushmitaMondal 2. R.Ramya Sri 3. T.SaiHarshita	1 <sup>st</sup> prize

**Table B 4.6.3.b: Inter-Institution Students Technical, Hardware Expo Prizes of 2017-18**

<b>Inter-Institution events information Electronics and Communication Engineering – (2016-17)</b>					
<b>TECHNICAL EVENTS</b>					
<b>S.NO</b>	<b>DATE</b>	<b>EVENT</b>	<b>ORGANIZED INSTITUTE</b>	<b>NAME OF THE STUDENT</b>	<b>AWARD/ PRIZED</b>
1	15-02-2017	Project Expo	VIT University	1. Ms. DeepikaPriyanaka	2 <sup>nd</sup> Prize
2	18-12-2016 to 22-12-2016	Project	VIZAG SCIENCE & TECH FEST 2016(AU)	1. M.Sirisha Reddy, 2. M.S. Madhushalini, 3. K V Sukanya	Gold Medal
3	18-12-2016 to 22-12-2016	Project	VIZAG SCIENCE & TECH FEST 2016(AU)	1. S.Vanaja, 2. K.V.ManiMoulika, 3. V.Tanuja	Silver Medal
4	30-09-2016 to 01-10-2016	Pirates of the Circuits (VISTA-16)	VIIT	1. M N Madhushalini 2. T. Sindhusa	1 <sup>st</sup> Prize
5	30-09-2016 to 01-10-2016	Pirates of the Circuits (VISTA-16)	VIIT	1. G. Vishnu Priya 2. E. Sruthi 3. H. Urmila	2 <sup>nd</sup> Prize
6	30-09-2016 to 01-10-2016	Paper Presentation (VISTA-16)	VIIT	1. Mani Moulika	3 <sup>rd</sup> Prize
7	30-09-2016 to 01-10-2016	Pirates of the Circuits (VISTA-16)	VIIT	1. M. Lalitha Devi 2. R. Lohitha 3. M. ArunaKumari	4 <sup>th</sup> Prize

**Table B 4.6.3.c: Inter-Institution Students Technical, Hardware Expo Prizes of 2016-17**

<b>Extra Co-curricular Activities</b>					
<b>S.No</b>	<b>Date</b>	<b>Event</b>	<b>Organized Institute</b>	<b>Name of The Student</b>	
1	02-10-2017 to	KHO-KHO	Mysore University, Mysore	K.POORNA	
2		KHO-KHO		S.TULASI	
3	10-10-2017	KHO-KHO		D.ANUSHA	

4	14-10-2018 to 17-10-2018	KHO-KHO	Mangalore University Mangalagangothri, Karnataka	S.TULASI
5		KHO-KHO		K.POORNA
6		KHO-KHO		D.ANUSHA

**Table B 4.6.3.d: Inter-Institution Students Extra Co-curricular Activities**

<b>Inter-Institution events information Electronics and Communication Engineering – (2017-18)</b>					
<b>SPORTS</b>					
<b>Sl. NO</b>	<b>DATE</b>	<b>EVENT</b>	<b>ORGANIZED INSTITUTE</b>	<b>NAME OF THE STUDENT</b>	<b>AWARD/ PRIZED</b>
1	06-01-2018 to 07-01-2018	THROW BALL (Yuvtaraang-2K18)	VIIT	1. P.Bharathi 2. Ch.Sirisha 3. E.Sruthi	Winner
2	02-02-2018	KHO-KHO	ADITYA ENGINEERING COLLEGE	1. S.Tulasi 2. M.Hemalatha 3. V.D.S. Nandini 4. K.Poorna 5. K.Suma 6. D.Anusha	1 <sup>st</sup> prize
<b>Inter-Institution events information Electronics and Communication Engineering – (2016-17)</b>					
1	17-02-2017	KHO-KHO (Inter Collegiate Tournament)	JNTUK	1. K. Suma, 2. S.Tulasi, 3. K. Poorna, 4. V. Deva Sai Nandini, 5. S.Anusha, 6. M.HemaLatha, 7. D.Manisha	Winners
2	07-01-2017 to 08-01-2017	THROW BALL	VIIT	1. K.Shruthi, 2. M.D.L.Pravallika, 3. M. Lalitha Devi, 4. Bharathi	Winner
3	07-01-2017	KHO KHO	VIIT	1. D. Manisha,	Winner

	to 08-01-2017			2. S. Tulasi, 3. K. Poorna, 4. D. Anusha, 5. K. Suma, 6. M. Hemalatha, 7. K. Navya, 8. V.D.S. Nandini	
4	07-01-2017 to 08-01-2017	CARROMS (Yuvtarang-2K17)	VIIT	1. P. MadhuMounica	Winner
5	07-01-2017 to 08-01-2017	CARROMS (Yuvtarang-2K17)	VIIT	1. G. Niharika	Runner
6	07-01-2017 to 08-01-2017	CARROMS (Yuvtarang-2K17)	VIIT	1. B. Pratyusha	Runner
7	07-01-2017 to 08-01-2017	TENNICOIT (Yuvtarang-2K17)	VIIT	1. Ch. Shirisha, 2. R. Divya Sai	Runner

**Table B 4.6.3.e: Inter-Institution Students Co-Curricular Prizes of 2017-18 & 2016-17**

<b>Inter-institution events information Electronics and Communication Engineering – (2018-19)</b>					
<b>WORK SHOPS</b>					
<b>S.NO</b>	<b>DATE</b>	<b>EVENT</b>	<b>ORGANIZED INSTITUTE</b>	<b>NAME OF THE STUDENT</b>	<b>NO OF PARTICIPANTS</b>
1	18-08-2018 to 19-08-2018	Robotics and IoT Workshop	BITS PILANI, HYDERABAD	B.Srivasavi	13
				RambatlaChinmayi	
				S.Hemanth Sandhya	
				RapakaRamya Sri	
				TippalaVasudha Reddy	

				R. V. Vigneshwari T. Jyothsna Prasanthi B. Srivasavi Reddi Divya Sai Pratti Rishita Jaya R. Keerthi M. Adi Lakshmi Sushmita Mondal	
2	28-09-2018 to 30-09-2018	Technozion (NIT, Warangal)	ELECTONOVA	Penumatsa Likhitha P Sowjanya N BhagaSree	3
3	29-09-2018	Humanoid Robotics	UTKRAANTI(WORKSHOP), NIT WARANGAL.	Penumatsa Bhavani P. Likitha P Sowjanya Ramani N Bhagyasri	4

**Table B 4.6.3.f: Inter-Institution Students Technical, Hardware Expo Participated of 2018-19**

Inter-institution events information Electronics and Communication Engineering – (2017-18)					
WORK SHOPS					
Sl. NO	DATE	EVENT	ORGANIZED INSTITUTE	NAME OF THE STUDENT	NO OF PARTICIPANTS
1	07-10-2017	Innovation Fair (Project Expo)	JNTU, KAKINADA	1. D Lohitha 2. G Poojitha 3. K. Karishma Bhanu 4. M. Nikitha 1. M Manjusha 2. P. Likitha 3. M. Gowthami 1. M Madhavalatha 2. U. Sujatha 3. M. Karishma	14



				1. K.GeethaMadhuri 2. D.S.K.Sravanthi 3. CH.LalithaLavanya 4. A.Alekhya	
2	14-12-2017 to 16-12-2017	Embedded Systems Workshop	APSSDC	M Sravani Sandhya G Pooja J Ammadu A YasodhaSridevi A Bharathi T.SriVarshini A Alekhya B Saranya B Ramadevi B KavyaVijaya Lakshmi B Shanmukha Lakshmi Katyayani B Priyanka B Sandhya Rekha ChandakaVasavi ChilakaLalithaLavanya Ch.Haritha CH.Shyamala D.Sai Krishna Sravanthi D.Anusha N.Susila M.Priyanka M.Syamala	22
3	23-01-2018	Ethical Hacking Workshop	IIT MADRAS	K Divyavani K Yamani A Yasasri	3
4	01-02-2018 to	IoT workshop	Gayatri Vidya Parishad College of Engineering	Ch.Sowmya	1

	02-02-2018				
5	02-02-2018	SDP Challenge on IoT concepts	Gayatri Vidya Parishad College of Engineering	Ch.Sowmya	

ALL INDIA HARDWARE EXPO					
1	25-01-2018	Smart India Hackathon (IoT Based Smart Garbage System)	AICTE	1.A.Priyanka 2.B.Mohana Lakshmi 3.K.Sai Priya 4.B.G.S.Kusuma 5.K.Sravani 6.A.Janaki	18
2		Smart India Hackathon (IoT Based Health Parameter Monitoring)	AICTE	1.V.Thirumala Gayatri 2.P.Chandana Sravya 3.A.Bharathi Lakshmi 4.O.Rupa Manjari 5.S.Jyothi 6.K.R.Krishna Tulasi	
3		Smart India Hackathon (IoT Access Control System)	AICTE	1.N.Navya 2.P.Sai Keerthi 3.Y.Yamani 4.A.Yashasri 5.Sushmita Mondal 6.R.Ramya Sri	
4		Smart India Hackathon (IoT Based Waste Management System )	AICTE	1.M.Latha Devi 2.M.Aruna Kumara 3.R.Lohitha 4.S.Prasanna Lakshmi 5.B.Bhargavi 6.B.Sagarika	30
5		Smart India Hackathon (IoT based Weather	AICTE	1.P.Likitha 2.M.Bhavya Sree 3.P.Prahleika	

		Monitoring System)		4.M.P.Sunayana 5.D.Sai Vasavi 6.D.Jayasri	
6		Smart India Hackathon (Soil Moisture Sensing & Monitoring	AICTE	1.P.Vineela 2.S.Karishma 3.T.L.Priyanka 4.P.S.N.Mounika 5. K.Sai Suma 6.K.Sai Komali	
7		Smart India Hackathon IoT based face recognition )	AICTE	1.M.Sravani Sandhya 2.N.Susila 3.M.Manjusha 4.M.Poornima 5.T.Harshitha 6.S.Chandana Priyanka	
8		Smart India Hackathon ( Soil Moisture Sensing & Monitoring)	AICTE	1.P.Madhu Mounica 2.S.Rohini 3.Ch.Divya 4.K.Poornima 5.T.Sree Varshini 6.T.Likhita Rosy	
9	25-01-2018	Smart India Hackathon ( IoT Based Agriculture Monitoring System )	AICTE	M.MadhaviLatha 2.K.Jhansi 3.K.Udayanjali 4.S.K.Karishma 5.R.Sai Poojitha 6.S.Maha Lakshmi	36
10		Smart India Hackathon (IoT Based Biometric)	AICTE	1.G.Poojitha 2.G.Kanaka Divya 3.K.Poornima 4.B.Kavya 5.P.Rishitha	

				6.V.Sandeepthy	
11		Smart India Hackathon (IoT Based SCADA System )	AICTE	1.B.D.V Roja 2.G.Madhuri 3.B.Sandhyarekha 4.K.Tejasri 5.R.V.Vigneshwari 6.T.Joshna	
12		Smart India Hackathon (IoT Based Minimize Electricity Theft )	AICTE	1.Ch.Mounica 2.K.Suma 3.G.Mani Deepika 4.K.Sai Mounica 5.M.Deekshitha 6.M.Jyothirmayee	
13	25-01-2018	Smart India Hackathon (IoT Based Minimize Electricity Theft )	AICTE	1.D.Jhanavi 2.G.Revathi 3.K.Manju Bhargavi 4.K.Naga Varalakshmi 5.V.Manju 6.R.Divya Sai	
14		Smart India Hackathon (IoT Based Urban Bus Navigation )	AICTE	1.P.Bharathi 2.P.Vineela 3.S.Tulasi 4.M.Charishma 5.P.Bhavani 6.M.Gowthami	
15		Smart India Hackathon (IoT Based Wireless Notice Board)	AICTE	1.A.Jhansi 2.B.Saranya 3.G.Divya Sri 4.K.Sarika 5.B.Rama Devi 6.K.Bindu Priya	18
16		Smart India	AICTE	1.P.Mamtha	

		Hackathon (IoT Based Home Automation )		2.D.Sai Vandana 3.Sakshi Singh 4.B.Bharghavi 5.A.Sravani 6.K.Divya	
17		Smart India Hackathon (Real Time Student Monitoring System )	AICTE	1.D.S.K Sravsnti 2.A.Alekya 3.K.Geetha Madhuri 4.CH.Lalitha Lavanya 5.B.Rajeshwari 6.K.Leela Manga Veni	

**Table B 4.6.3.g: Inter-Institution Students Technical, Hardware Expo Participated of 2017-18**

<b>Criterion 5</b>	<b>Faculty Information and Contributions</b>	<b>200 M</b>
5.1	Student Faculty Ratio	<b>20M</b>
5.2	Faculty Cadre Proportion	<b>25M</b>
5.3	Faculty Qualification	<b>25M</b>
5.4	Faculty Retention	<b>25M</b>
5.5	Innovations by the faculty in Teaching and Learning	<b>20M</b>
5.6	Faculty as Participants in Faculty development/Training activities/STTPs	<b>15M</b>
5.7	Research and development	<b>30M</b>
5.8	Faculty Performance Appraisal and Development System (FPADS)	<b>30M</b>
5.9	Visiting/Adjunct/Emeritus Faculty etc.	<b>10M</b>

<b>Criterion 5</b>	<b>Faculty Information and Contributions</b>	<b>200 M</b>
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### 5. FACULTY INFORMATION AND CONTRIBUTIONS (200)

#### Faculty Information CAY (2019-20)

Sl.No	Name of Faculty Member	Qualification			Association with the Institution	Designation	Date on which designated as Professor or Associate Professor	Date of Joining the Institution	Department	Specialization	Academic Research			Currently Associated(Y/N) Date of Leaving In case currently associated is (No)	Nature of Association (Regular/Contract)
		Degree (Highest degree)	University	Year of attaining higher Qualification							Research Paper Publications	Ph.D. Guidance	Faculty Receiving the Ph.D. during the Assessment Years		
1	Dr.J.Sudhakar	Ph.D.	JNTUK	2016	Y	Professor	28-05-2018	06-07-2012	ECE	VLSI	2	NA	No	Yes	Regular
2	Dr. K.Murali Krishna	Ph.D.	AUCE	2009	Y	Professor	22-05-2019	22-05-2019	ECE	W&MC		Yes	No	Yes	Regular
3	Dr.B.Prasad Rao	Ph.D.	AUCE	2017	Y	Professor	10-06-2019	10-08-2016	ECE	IT		NA	No	Yes	Regular
4	Dr. V.Adinarayana	Ph.D.	AU	2019	Y	Assoc.Prof.	01-05-2019	17-06-2014	ECE	WC		NA	Yes	Yes	Regular
5	Dr.K. V.Ramana Rao	Ph.D.	AU	2019	Y	Assoc.Prof.	01-07-2019	25-01-2016	ECE	R&ME		NA	Yes	Yes	Regular
6	Dr. Ch. Ramesh Babu	Ph.D.	GITAM	2020	Y	Assoc.Prof.	01-07-2020	22-12-2008	ECE	ES&BSP	5	NA	Yes	Yes	Regular
7	Dr. P. Sudhakar	Ph.D.	GITAM	2020	Y	Assoc.Prof.	01-07-2020	29-06-2012	ECE	ASP		NA	Yes	Yes	Regular
8	Mrs.T.Sandhya Kumari	M.Tech, (Ph.D.)	JNTUK	2010	Y	Asst.Prof.	NA	26-06-2004	ECE	I&CS	5	NA	No	Yes	Regular
9	Mrs. Ch. Padma Vani	M.Tech (Ph.D.)	JNTUK	2010	Y	Asst.Prof.	NA	23-06-2010	ECE	VLSI SD	3	NA	No	Yes	Regular
10	Mr.D.Madhusudhan	M.Tech	JNTUK	2012	Y	Asst.Prof.	NA	27-11-2010	ECE	ECE		NA	No	Yes	Regular
11	Mr. B. Sai Bharadwaj	M.Tech, (Ph.D.)	JNTUK	2011	Y	Asst.Prof.	NA	13-06-2011	ECE	ECE	3	NA	No	Yes	Regular

12	Mr.V.S.V.Ranga Das	M.E, (Ph.D.)	SVU	1978	Y	Asst.Prof.	NA	01-07-2011	ECE	I&CS		NA	No	Yes	Regular
13	Mr. D. Tilak Raju	ME (Ph.D.)	AU	2009	Y	Asst.Prof.	NA	04-07-2011	ECE	E&I	2	NA	No	Yes	Regular
14	Mrs. Ch. Anitha Bhavani	M.Tech (Ph.D.)	JNTUK	2013	Y	Asst.Prof.	NA	01-06-2012	ECE	DE&CS	3	NA	No	Yes	Regular
15	Mr.P.Gopi Krishna	M.Tech	NIT, Calicut	2008	Y	Asst.Prof.	NA	03-06-2013	ECE	DS&CE	3	NA	No	Yes	Regular
16	Mrs.S.Malathi	M.Tech (Ph.D.)	JNTUK	2013	Y	Asst.Prof.	NA	18-07-2013	ECE	C&SP	3	NA	No	Yes	Regular
17	Mr.K.Rajendra Prasad	M.Tech	JNTUK	2011	Y	Asst.Prof.	NA	30-12-2013	ECE	ECE		NA	No	Yes	Regular
18	Mrs. B.Manjula	M.Tech	JNTUA	2011	Y	Asst.Prof.	NA	19-03-2014	ECE	DS&CE	4	NA	No	Yes	Regular
19	Mr. S.Tarun Prasad	M.Tech	VIT U	2012	N	Asst.Prof.	NA	21-01-2015	ECE	VLSI D		NA	No	No 28-05-2020	Regular
20	Mrs.Y.Alekhyia	M.Tech (Ph.D.)	JNTUK	2012	Y	Asst.Prof.	NA	13-05-2015	ECE	VLSI SD	1	NA	No	Yes	Regular
21	Mr. N V.Chaitanya	M.Tech	AU	2015	Y	Asst.Prof.	NA	09-09-2015	ECE	R&ME		NA	No	Yes	Regular
22	Mr.B. Sasikanth	M.Tech	GITAM	2010	Y	Asst.Prof.	NA	18-09-2015	ECE	DS&SP	3	NA	No	Yes	Regular
23	Mr. B.SrinivasaRao	M.Tech	NIT, Tiruchir appalli	2014	N	Asst.Prof.	NA	26-11-2015	ECE	CS		NA	No	No 15-05-2020	Regular
24	Ms.Dhanya .M.Ravi	M.Tech	JNTUK	2016	Y	Asst.Prof.	NA	20-04-2017	ECE	VLSI & ES	4	NA	No	Yes	Regular
25	Ms.K.Sushma	M.Tech	JNTUK	2017	Y	Asst.Prof.	NA	21-04-2017	ECE	VLSI & ES		NA	No	Yes	Regular
26	Mr. G.Lakshmana	M.Tech	JNTUH	2016	Y	Asst.Prof.	NA	09-06-2017	ECE	NT	1	NA	No	Yes	Regular
27	Mr.K.Sunil Kumar	M.Tech	VIT	2016	Y	Asst.Prof.	NA	12-06-2017	ECE	SST	1	NA	No	Yes	Regular
28	Mrs. G.Sai Swetha	M.Tech	JNTUK	2016	N	Asst.Prof.	NA	16-06-2017	ECE	SP		NA	No	No 16-07-2020	Regular
29	Ms. G.Arshini	M.Tech	AU	2014	Y	Asst.Prof.	NA	28-06-2017	ECE	WC		NA	No	Yes	Regular
30	Mrs.N.Sri Kalyani	M.Tech	JNTUK	2018	Y	Asst.Prof.	NA	01-06-2018	ECE	VLSI&ES		NA	No	Yes	Regular
31	Ms.S.Jhansi Rani	M.Tech	JNTUK	2018	Y	Asst.Prof.	NA	23-06-2018	ECE	VLSI&ES		NA	No	Yes	Regular
32	Mrs.B.V.R.Gowri	M.Tech	JNTUK	2014	N	Asst.Prof.	NA	08-04-2019	ECE	VLSI		NA	No	No 16-07-2020	Regular



33	Ms.Korumilli Devipriya	M.Tech	AU	2017	Y	Asst.Prof.	NA	15-06-2019	ECE	CS	1	NA	No	Yes	Regular
34	Mr.V.Appala Raju	M.Tech	AU	2014	Y	Asst.Prof.	NA	17-06-2019	ECE	R&ME		NA	No	Yes	Regular
35	Ms. N. Bhuvanewari	M.Tech	Karapagam University	2011	Y	Asst.Prof.	NA	19-06-2019	ECE	ES		NA	No	Yes	Regular
36	Mr.Sourav Roy	M.Tech, (Ph.D.)	NIT Agartala	2015	Y	Asst.Prof.	NA	27-06-2019	ECE	CS		NA	Yes	Yes	Regular

**Table B.5.a: Faculty Information CAY (2019-20)**

## Faculty Information CAYm1 (2018-19)

SLNo	Name of Faculty Member	Qualification			Association with the Institution	Designation	Date on which designated as Professor or Associate Professor	Date of Joining the Institution	Department	Specialization	Academic Research			Currently Associated(Y/N) Date of Leaving In case currently associated is (No)	Nature of Association (Regular/Contract)
		Degree (Highest)	University	Year of Qualification							Research Paper Publications in AY	Ph.D. Guidance	Faculty Receiving the Ph.D. degree during the academic year		
1	Dr. R.P.Das	Ph.D.	IIT Bombay	1987	N	Professor	27-10-2014	27-10-2014	ECE	SS		NA	No	No 01-05-2019	Regular
2	Dr.J.Sudhakar	Ph.D.	JNTUK	2016	Y	Professor	28-05-2018	06-07-2012	ECE	VLSI	2	NA	No	Yes	Regular
3	Dr. P.A.Nageswara Rao	Ph.D.	AU	2016	N	Professor	14-04-2018	30-07-2016	ECE	I&PC		NA	No	No 01-05-2019	Regular
4	Dr.T.Pavani	Ph.D.	AU	2015	N	Assoc.Prof.	30-07-2016	30-07-2016	ECE	Antennas		NA	No	No 07-05-2019	Regular
5	Dr.B. Prasad Rao	Ph.D.	AU	2017	Y	Assoc.Prof.	14-11.2017	10-08-2016	ECE	IT		NA	No	Yes	Regular
6	Mrs.T.Sandhya Kumari	M.Tech, (Ph.D.)	JNTUK	2010	Y	Asst.Prof.	NA	26-06-2004	ECE	I&CS		NA	No	Yes	Regular
7	Mr. Ch. Ramesh Babu	M.Tech, (Ph.D.)	GITAM	2008	Y	Asst.Prof.	NA	22-12-2008	ECE	ES		NA	No	Yes	Regular
8	Mrs. Ch. Padma Vani	M.Tech	JNTUK	2010	Y	Asst.Prof.	NA	23-06-2010	ECE	VLSI SD		NA	No	Yes	Regular
9	Mr.D.Madhusudhan	M.Tech	JNTUK	2012	Y	Asst.Prof.	NA	27-11-2010	ECE	ECE		NA	No	Yes	Regular
10	Mr. B. Sai Bharadwaj	M.Tech, (Ph.D.)	JNTUK	2011	Y	Asst.Prof.	NA	13-06-2011	ECE	ECE		NA	No	Yes	Regular
11	Mr.V.S.V.Ranga Das	M.E, (Ph.D.)	SVU	1978	Y	Asst.Prof.	NA	01-07-2011	ECE	I&CS		NA	No	Yes	Regular

12	Mr. D. Tilak Raju	ME	AU	2009	Y	Asst.Prof.	NA	04-07-2011	ECE	E&I		NA	No	Yes	Regular
13	Mrs. Ch. Anitha Bhavani	M.Tech	JNTUK	2013	Y	Asst.Prof.	NA	01-06-2012	ECE	DE&CS		NA	No	Yes	Regular
14	Mr. P. Sudhakar	M.Tech, (Ph.D.)	Karunya a University	2007	Y	Asst.Prof.	NA	29-06-2012	ECE	AE		NA	No	Yes	Regular
15	Mr.P.Gopi Krishna	M.Tech	NIT, Calicut	2008	Y	Asst.Prof.	NA	03-06-2013	ECE	DS&CE		NA	No	Yes	Regular
16	Mrs.S.Malathi	M.Tech	JNTUK	2013	Y	Asst.Prof.	NA	18-07-2013	ECE	C&SP		NA	No	Yes	Regular
17	Mr.K .Sridhar	M.Tech	JNTUK	2010	N	Asst.Prof.	NA	05-11-2013	ECE	DE&CS		NA	No	No 22-06-2019	Regular
18	Mr.K.Rajendra Prasad	M.Tech	JNTUK	2011	Y	Asst.Prof.	NA	30-12-2013	ECE	ECE	2	NA	No	Yes	Regular
19	Mrs.P.Kamala	M.Tech	AU	2014	N	Asst.Prof.	NA	14-03-2014	ECE	Remote Sensing		NA	No	No 04-05-2019	Regular
20	Mrs. B.Manjula	M.Tech	JNTUA	2011	Y	Asst.Prof.	NA	19-03-2014	ECE	DS&CE		NA	No	Yes	Regular
21	Mr. V. Adinarayana	M.Tech, (Ph.D.)	AU	2003	Y	Asst.Prof.	NA	17-06-2014	ECE	ECE		NA	No	Yes	Regular
22	Mr.B.Sandeep Kumar	M.Tech, (Ph.D.)	JNTUK	2012	N	Asst.Prof.	NA	19-01-2015	ECE	VLSI&ES		NA	No	No 29-05-2019	Regular
23	Mr. S.Tarun Prasad	M.Tech	VIT U	2012	N	Asst.Prof.	NA	21-01-2015	ECE	VLSI Design		NA	No	No 28-05-2020	Regular
24	Mrs.T.UmaMaheswari	M.Tech	AU	2010	N	Asst.Prof.	NA	09-02-2015	ECE	R&ME		NA	No	No 22-06-2019	Regular
25	Mrs.Y.Alekhyia	M.Tech	JNTUK	2012	Y	Asst.Prof.	NA	13-05-2015	ECE	VLSI SD	0	NA	No	Yes	Regular
26	Mr. N Venkata.Chaitanya	M.Tech	AU	2015	Y	Asst.Prof.	NA	09-09-2015	ECE	R&ME	2	NA	No	Yes	Regular
27	Mrs.K.Lakshmi	M.Tech	JNTUK	2015	N	Asst.Prof.	NA	10-09-2015	ECE	VLSI SD		NA	No	No 29-06-2019	Regular
28	Mr.B. Sasikanth	M.Tech	GITAM	2010	Y	Asst.Prof.	NA	18-09-2015	ECE	DS&SP		NA	No	Yes	Regular
29	Mr. B.SrinivasaRao	M.Tech	NIT, Tiruchirappalli	2014	N	Asst.Prof.	NA	26-11-2015	ECE	CS		NA	No	No 15-05-2020	Regular

30	Mr.A.Suresh	M.Tech	IIT, Kharag pur	2015	N	Asst.Prof.	NA	09-12-2015	ECE	MicroelE & VLSI Design		NA	No	No 29-06-2019	Regular
31	Mr.K.V.Ramana Rao	M.Tech, (Ph.D.)	AU	2019	Y	Asst.Prof.	NA	25-01-2016	ECE	R&ME		NA	No	Yes	Regular
32	Ms.Dhanya .M.Ravi	M.Tech	JNTUK	2016	Y	Asst.Prof.	NA	20-04-2017	ECE	VLSI & ES		NA	No	Yes	Regular
33	Ms.K.Sushma	M.Tech	JNTUK	2017	Y	Asst.Prof.	NA	21-04-2017	ECE	VLSI & ES		NA	No	Yes	Regular
34	Mr. G.Lakshmana	M.Tech	JNTUH	2016	Y	Asst.Prof.	NA	09-06-2017	ECE	NT		NA	No	Yes	Regular
35	Mr.K.Sunil Kumar	M.Tech (VIT)	VIT	2016	Y	Asst.Prof.	NA	12-06-2017	ECE	SST	1	NA	No	Yes	Regular
36	Mrs. G.Sai Swetha	M.Tech	JNTUK	2016	N	Asst.Prof.	NA	16-06-2017	ECE	SP		NA	No	No 16-07-2020	Regular
37	Ms. G.Arshini	M.Tech	AU	2014	Y	Asst.Prof.	NA	28-06-2017	ECE	WC		NA	No	Yes	Regular
38	Mrs.N.Sri Kalyani	M.Tech	JNTUK	2018	Y	Asst.Prof.	NA	01-06-2018	ECE	VLSI &ES		NA	No	Yes	Regular
39	Ms.S.Jhansi Rani	M.Tech	JNTUK	2018	Y	Asst.Prof.	NA	23-06-2018	ECE	VLSI		NA	No	Yes	Regular

**Table B.5.b: Faculty Information CA Ym1 (2018-19)**

## Faculty Information CAYm2 (2017-18)

Sl.No	Name of Faculty Member	Qualification			Association with the Institution	Designation	Date on which designated as Professor or Associate Professor	Date of Joining the Institution	Department	Specialization	Academic Research			Currently Associated (Y/N) Date of Leaving In case currently associated is (No)	Nature of Association (Regular/Contract)
		Degree (Highest)	University	Year of Qualification							Research Paper Publications in AY	Ph.D. Guidance	Faculty Receiving the Ph.D. degree during the academic year		
1	Dr. R.P.Das	Ph.D.	IIT Bombay	1987	N	Professor	05-06-2015	27-10-2014	ECE	SS		NA	No	No 01-05-2019	Regular
2	Dr.J.Sudhakar	Ph.D.	JNTUK	2016	Y	Assoc.Prof.	14-12-2016	06-07-2012	ECE	VLSI	2	NA	No	Yes	Regular
3	Dr. P.A.Nageswara Rao	Ph.D.	AU	2016	N	Assoc.Prof.		30-07.2016	ECE	I&PC		NA	No	No 01-05-2019	Regular
4	Dr.T.Pavani	Ph.D.	AU	2015	N	Assoc.Prof.	30-07-2016	30-07-2016	ECE	Antennas		NA	No	No 07-05-2019	Regular
5	Dr.B. Prasad Rao	Ph.D.	AUCE	2017	Y	Assoc.Prof.	14.11.2017	10-08-2016	ECE	IT		NA	No	Yes	Regular
6	Mrs.T.Sandhya Kumari	M.Tech, (Ph.D.)	JNTUK	2010	Y	Asst.Prof.	NA	26-06-2004	ECE	I&CS	3	NA	No	Yes	Regular
7	Mr.I.Krishna Rao	M.Tech	JRRV Udaipur	2007	N	Asst.Prof.	NA	01-06-2006	ECE	CS		NA	No	No 11-06-2018	Regular
8	Mr. Ch. Ramesh Babu	M.Tech, (Ph.D.)	JNTUH	2008	Y	Asst.Prof.	NA	22-12-2008	ECE	ES	4	NA	No	Yes	Regular
9	Mrs. Ch. Padma Vani	M.Tech	JNTUK	2010	Y	Asst.Prof.	NA	23-06-2010	ECE	VLSI SD		NA	No	Yes	Regular
10	Mr.D.Madhusudhan	M.Tech	JNTUK	2012	Y	Asst.Prof.	NA	27-11-2010	ECE	ECE		NA	No	Yes	Regular
11	Mr. B. Sai Bharadwaj	M.Tech, (Ph.D.)	JNTUK	2011	Y	Asst.Prof.	NA	13-06-2011	ECE	ECE		NA	No	Yes	Regular

12	Mr.V.S.V.Ranga Das	M.E, (Ph.D.)	SVU	1978	Y	Asst.Prof.	NA	01-07-2011	ECE	I&CS		NA	No	Yes	Regul ar
13	Mr. D. Tilak Raju	ME	AU	2009	Y	Asst.Prof.	NA	04-07-2011	ECE	E&I		NA	No	Yes	Regul ar
14	Mrs. Ch. Anitha Bhavani	M.Tech	JNTUK	2013	Y	Asst.Prof.	NA	01-06-2012	ECE	DE&CS	1	NA	No	Yes	Regul ar
15	Mr. P. Sudhakar	M.Tech, (Ph.D.)	Karunya Universit y,	2007	Y	Asst.Prof.	NA	29-06-2012	ECE	Applied Electronics	2	NA	No	Yes	Regul ar
16	Mr.P.Gopi Krishna	M.Tech	NIT, Calicut	2008	Y	Asst.Prof.	NA	03-06-2013	ECE	DS&CE		NA	No	Yes	Regul ar
17	Mrs.S.Malathi	M.Tech	JNTUK	2013	Y	Asst.Prof.	NA	18-07-2013	ECE	C&SP		NA	No	Yes	Regul ar
18	Mr.K .Sridhar	M.Tech	JNTUK	2010	N	Asst.Prof.	NA	05-11-2013	ECE	DE&CS		NA	No	No 22-06-2019	Regul ar
19	Mr.K.Rajendra Prasad	M.Tech	JNTUK	2011	Y	Asst.Prof.	NA	30-12-2013	ECE	ECE		NA	No	Yes	Regul ar
20	Mrs.P.Kamala	M.Tech	AU	2014	N	Asst.Prof.	NA	14-03-2014	ECE	Remote Sensing		NA	No	No 04-05-2019	Regul ar
21	Mrs. B.Manjula	M.Tech	JNTUA	2011	Y	Asst.Prof.	NA	19-03-2014	ECE	DS&CE		NA	No	Yes	Regul ar
22	Mr. V. Adinarayana	M.E, (Ph.D.)	AU	2003	Y	Asst.Prof.	NA	17-06-2014	ECE	ECE		NA	No	Yes	Regul ar
23	Mr.K.Tarakeswara Rao	M.Tech	NIT Jalandhar	2015	N	Asst.Prof.	NA	08-08-2014	ECE	C&IE		NA	No	No 29-06-2018	Regul ar
24	Mr.B.Sandeep Kumar	M.Tech, (Ph.D.)	JNTUK	2012	N	Asst.Prof.	NA	19-01-2015	ECE	VLSI&ES		NA	No	No 29-05-2019	Regul ar
25	Mr. S.Tarun Prasad	M.Tech	VIT U	2012	N	Asst.Prof.	NA	21-01-2015	ECE	VLSI Design		NA	No	No 28-05-2020	Regul ar
26	Mrs. T.UmaMaheswari	M.Tech	AU	2010	N	Asst.Prof.	NA	09-02-2015	ECE	R&ME		NA	No	No 22-06-2019	Regul ar
27	Mr.Shaik Peer Ahmad	M.Tech	AU	2013	N	Asst Prof.	NA	13-05-2015	ECE	R&ME		NA	No	No 26-05-2018	Regul ar
28	Mrs.Y.Alekhyia	M.Tech	JNTUK	2012	Y	Asst.Prof.	NA	13-05-2015	ECE	VLSI SD	1	NA	No	Yes	Regul ar
29	Mrs.D.Vijayalakshmi	ME	ANNA	2008	N	Asst.Prof.	NA	08-06-2015	ECE	CS	1	NA	No	No 12-05-2018	Regul ar

30	Mr.P.S.T.N Srinivas	M.Tech (Ph.D.)	NIT Durgapur	2014	N	Asst.Prof.	NA	01-07-2015	ECE	VLSI&ES		NA	No	No 03-07-2018	Regul ar
31	Ms.D.Srikanya	M.Tech (Ph.D.)	NIT Rourkela	2015	N	Asst.Prof.	NA	25-07-2015	ECE	VLSID &ES		NA	No	No 31-07-2018	Regul ar
32	Mr. N Venkata.Chaitanya	M.Tech	AU	2015	Y	Asst.Prof.	NA	09-09-2015	ECE	R&ME		NA	No	Yes	Regul ar
33	Mrs.K.Lakshmi	M.Tech	JNTUK	2015	N	Asst.Prof.	NA	10-09-2015	ECE	VLSI SD		NA	No	No 29-06-2019	Regul ar
34	Mr.B. Sasikanth	M.Tech	GITAM	2010	Y	Asst.Prof.	NA	18-09-2015	ECE	DS&SP		NA	No	Yes	Regul ar
35	Mr. B.SrinivasaRao	M.Tech	NIT, Trichy	2014	N	Asst.Prof.	NA	26-11-2015	ECE	CS		NA	No	No 15-05-2020	Regul ar
36	Mr.A.Suresh	M.Tech	IIT, Kharagpur	2015	N	Asst.Prof.	NA	09-12-2015	ECE	Microelectr onics & VLSI Design		NA	No	No 29-06-2019	Regul ar
37	Mr.K.V.Ramana Rao	M.Tech, (Ph.D.)	AU	2012	Y	Asst.Prof.	NA	25-01-2016	ECE	R&ME	5	NA	No	Yes	Regul ar
38	Mr.Subhrajit Barick	M.Tech (Ph.D.)	IIITD& M	2015	N	Asst.Prof.	NA	01-06-2016	ECE	CS		NA	No	No 11-06-2018	Regul ar
39	Mr.Soumya Kanta Pradhan	M.Tech	IIITD& M	2015	N	Asst.Prof.	NA	01-06-2016	ECE	CS		NA	No	No 11-06-2018	Regul ar
40	Mr.Boni Suresh	M.Tech	JNTUK	2011	N	Asst.Prof.	NA	18-08-2016	ECE	VLSI & SD		NA	No	No 25-05-2018	Regul ar
41	Ms.Dhanya .M.Ravi	M.Tech	JNTUK	2016	Y	Asst.Prof.	NA	20-04-2017	ECE	VLSI & ES		NA	No	Yes	Regul ar
42	Ms.K.Sushma	M.Tech	JNTUK	2017	Y	Asst.Prof.	NA	21-04-2017	ECE	VLSI & ES	1	NA	No	Yes	Regul ar
43	Mr. G.Lakshmana	M.Tech	JNTUH	2016	Y	Asst.Prof.	NA	09-06-2017	ECE	NT		NA	No	Yes	Regul ar
44	Mr.K.Sunil Kumar	M.Tech	VIT	2016	Y	Asst.Prof.	NA	12-06-2017	ECE	SST		NA	No	Yes	Regul ar
45	Mrs. G.Sai Swetha	M.Tech	JNTUK	2016	N	Asst.Prof.	NA	16-06-2017	ECE	SP		NA	No	No 16-07-2020	Regul ar
46	Ms. G.Arshini	M.Tech	AU	2014	Y	Asst.Prof.	NA	28-06-2017	ECE	SP		NA	No	Yes	Regul ar

Table B.5.c: Faculty Information CAym2 (2017-18)

**5.1. Student-Faculty Ratio (SFR) (20)***(To be calculated at Department Level)*No. of UG Programs in the Department (n): **01**No. of PG Programs in the Department (m): **02**No. of Students in UG 2<sup>nd</sup> Year= u1No. of Students in UG 3<sup>rd</sup> Year= u2No. of Students in UG 4<sup>th</sup> Year= u3No. of Students in PG 1<sup>st</sup> Year= p1No. of Students in PG 2<sup>nd</sup> Year= p2*No. of Students = Sanctioned Intake + Actual admitted lateral entry students**(The above data to be provided considering all the UG and PG programs of the department)**S=Number of Students in the Department = UG1 + UG2 +... +UGn + PG1 + ...PGn**F= Total Number of Faculty Members in the Department (excluding first year faculty)***Student Teacher Ratio (STR) = S / F**

<b>Year</b>	<b>CAY (2019-20)</b>	<b>CAYm1 (2018-19)</b>	<b>CAYm2 (2017-18)</b>
u1.1	180+18	180+36	180+32
u1.2	180+36	180+32	180+29
u1.3	180+32	180+29	180+15
<b>UG1</b>	<b>u1.1+u1.2+u1.3 = 626</b>	<b>u1.1+u1.2+u1.3 = 637</b>	<b>u1.1+u1.2+u1.3 = 616</b>
p1.1	18	18	18
p1.2	18	18	18
<b>PG1</b>	<b>p1.1+p1.2 = 36</b>	<b>p1.1+p1.2= 36</b>	<b>p1.1+p1.2 = 36</b>
p2.1	18	18	18
p2.2	18	18	18
<b>PG2</b>	<b>p2.1+p2.2 = 36</b>	<b>p2.1+p2.2= 36</b>	<b>p2.1+p2.2 = 36</b>
Total No. of Students in the Department ( <b>S</b> )	<b>S1 = 698</b>	<b>S2 = 709</b>	<b>S3 = 688</b>
No. of Faculty in the Department ( <b>F</b> )	<b>F1 = 36</b>	<b>F2 = 39</b>	<b>F3 = 46</b>
Student Faculty Ratio (SFR)	<b>SFR1=S1 / F1 = 19.39</b>	<b>SFR2= S2 / F2 = 18.18</b>	<b>SFR3= S3 / F3 = 14.96</b>
Average SFR	<b>SFR=(SFR1+SFR2+SFR3) / 3 = 17.51</b>		

**Table B.5.1: Student-Faculty Ratio****Student Teacher Ratio (STR) = S / F = 17.51**



*Note: Marks to be given proportionally from a maximum of 20 to a minimum of 10 for average SFR between 15:1 to 25:1, and zero for average SFR higher than 25:1. Marks distribution is given as below:*

$\leq 15$	-	20Marks
$\leq 17$	-	18Marks
$\leq 19$	-	16Marks
$\leq 21$	-	14Marks
$\leq 23$	-	12Marks
$\leq 25$	-	10Marks
$> 25.0$	-	0 Marks

*All the faculty whether regular or contractual (except Part-Time), will be considered. The contractual faculty (doing away with the terminology of visiting/adjunct faculty, whatsoever) who have taught for 2 consecutive semesters in the corresponding academic year on full time basis shall be considered for the purpose of calculation in the Faculty Student Ratio. However, following will be ensured in case of contractual faculty:*

- 1. Shall have the AICTE prescribed qualifications and experience.*
- 2. Shall be appointed on full time basis and worked for consecutive two semesters during the particular academic year under consideration.*
- 3. Should have gone through an appropriate process of selection and the records of the same shall be made available to the visiting team during NBA visit*

**5.1.1. Provide the information about the regular and contractual faculty as per the format mentioned below:**

	<b>Total number of Regular Faculty in the department</b>	<b>Total number of Contractual Faculty in the department</b>
<b>CAY (2019-20)</b>	36	NIL
<b>CAYm1 (2018-19)</b>	39	NIL
<b>CAYm2 (2017-18)</b>	46	NIL

**Table B.5.1.1: Faculty Information**

## 5.2. Faculty Cadre Proportion (25)

The reference Faculty cadre proportion is 1(F1):2(F2):6(F3)

F1: Number of Professors required =  $1/9 \times$  Number of Faculty required to comply with 20:1 Student-Faculty ratio based on no. of students (N) as per 5.1

F2: Number of Associate Professors required =  $2/9 \times$  Number of Faculty required to comply with 20:1 Student-Faculty ratio based on no. of students (N) as per 5.1

F3: Number of Assistant Professors required =  $6/9 \times$  Number of Faculty required to comply with 20:1 Student-Faculty ratio based on no. of students (N) as per 5.1

Year	Professors		Associate Professors		Assistant Professors	
	Required (F1)	Available	Required (F2)	Available	Required (F3)	Available
CAY (2019-20)	3	3	7	2	23.00	31.00
CAYm1 (2018-19)	3	3	7	2	23.00	34.00
CAYm2 (2017-18)	3	1	7	3	22.00	42.00
Average Numbers	RF1 = 3	AF1 = 2.33	RF2 = 7	AF2 = 2.33	RF3 = 22.67	AF3 = 35.67

**Table B.5.2: Faculty Cadre Proportion**

$$\text{Cadre Ratio Marks} = \left[ \left[ \frac{AF1}{RF1} \right] + \left[ \frac{AF2}{RF2} * 0.6 \right] + \left[ \frac{AF3}{RF3} * 0.4 \right] \right] * 12.5 = 20.00$$

- If  $AF1 = AF2 = 0$  then zero marks
- Maximum marks to be limited if it exceeds 25

Example: Intake = 60 (i.e. total no. of students = 180); Required number of Faculty: 9;  $RF1 = 1, RF2 = 2$  and  $RF3 = 6$

Case 1:  $AF1/RF1 = 1; AF2/RF2 = 1; AF3/RF3 = 1$ ; Cadre proportion marks =  $(1 + 0.6 + 0.4) \times 12.5 = 25$

Case 2:  $AF1/RF1 = 1; AF2/RF2 = 3/2; AF3/RF3 = 5/6$ ; Cadre proportion marks =  $(1 + 0.9 + 0.3) \times 12.5 = \text{limited to } 25$

Case 3:  $AF1/RF1 = 0; AF2/RF2 = 1/2; AF3/RF3 = 8/6$ ; Cadre proportion marks =  $(0 + 0.3 + 0.53) \times 12.5 = 10.4$

**5.3. Faculty Qualification (25)**

$FQ = 2.5 \times [(10X + 4Y)/F]$  where  $X$  is no. of regular faculty with Ph.D.,  $Y$  is no. of regular faculty with M.Tech.  $F$  is no. of regular faculty required to comply 20:1 Faculty-Student ratio (no. of faculty and no. of students required are to be calculated as per 5.1)

Year	X	Y	F	$FQ=2.5 \times [(10X + 4Y)/F]$
<b>CAY (2019-20)</b>	5	31	34	12.79
<b>CAYm1 (2018-19)</b>	5	34	35	13.29
<b>CAYm2 (2017-18)</b>	4	42	34	15.29
<b>Average Assessment</b>				13.79

**Table B.5.3: Faculty Qualification****5.4. Faculty Retention (25)**

No. of regular faculty members in CAYm1=39      CAY=36

<i>Item</i>	<i>Marks</i>
<i>&gt;=90% of required Faculty members retained during the period of assessment keeping CAYm2 as a base year)</i>	25
<i>&gt;=75% of required Faculty members retained during the period of assessment keeping CAYm2 as a base year)</i>	20
<i>&gt;=60% of required Faculty members retained during the period of assessment keeping CAYm2 as a base year)</i>	15
<i>&gt;=50% of required Faculty members retained during the period of assessment keeping CAYm2 as a base year)</i>	10
<i>&lt;50% of required Faculty members retained during the period of assessment keeping CAYm2 as a base year)</i>	0

<b>Description</b>	CAYm1(2018-19)	CAY(2019-20)
No. of Faculty Retained	37	28
Total No. of Faculty	46	46
% of Faculty Retained CAYm2(2017-18)	80	61
Average Retention ratio = 71		
<b>Assessment Marks = 15</b>		

**Table B.5.4: Faculty Retention**

### **5.5. Innovations by the Faculty in Teaching and Learning (20)**

○ *Innovations by the Faculty in teaching and learning shall be summarized as per the following description. Contributions to teaching and learning are activities that contribute to the improvement of student learning. These activities may include innovations not limited to, use of ICT, instruction delivery, instructional methods, assessment, evaluation, and inclusive classrooms that lead to effective, efficient, and engaging instruction. Any contributions to teaching and learning should satisfy the following criteria:*

- *The work must be made available on the Institute website*
- *The work must be available for peer review and critique*
- *The work must be reproducible and developed further by other scholars*

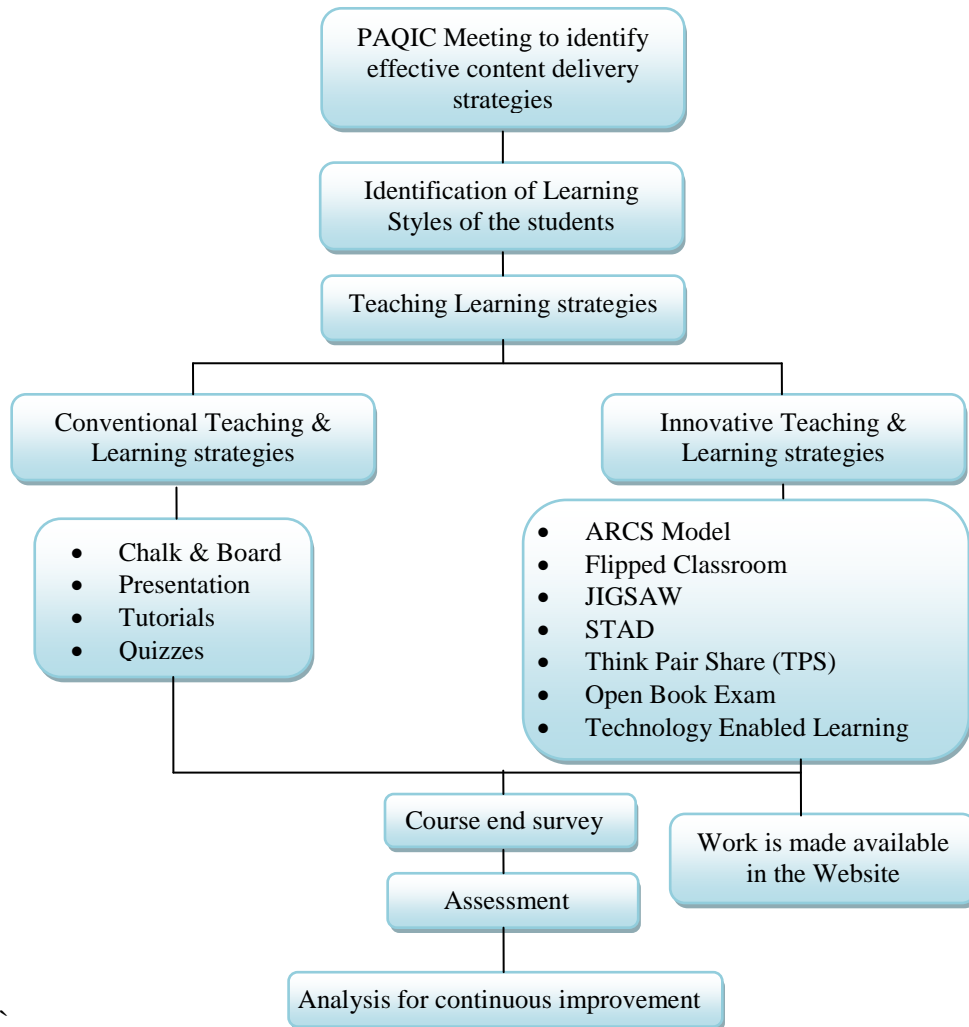
*The department/institution may set up appropriate processes for making the contributions available to the public, getting them reviewed and for rewarding. These may typically include statement of clear goals, adequate preparation, use of appropriate methods, significance of results, effective presentation and reflective critique*

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In the present competitive world, technology is changing very rapidly. The engineering graduates must be capable of acquainting these changes to grab the opportunities globally. This can be achieved through effective content delivery. Students will come from different locations with different aspirations which in turn influence the learning style. Irrespective of the learning style of the student, as an educator the content must be delivered effectively through innovative practices in Teaching & Learning to make them globally acceptable in line with our mission and vision.

#### **A. Work is available in the institution website (4)**

Department of ECE follows a systematic framework for implementation of innovative teaching learning strategies effectively in regular course work along with traditional classroom teaching. The detailed framework for implementation of teaching learning practices is as shown in Figure B.5.5.a.



**Figure B.5.5.a: Framework for the implementation of Innovative Teaching Learning & Conventional Teaching Learning Strategies**

For the effective implementation of Innovations in Teaching Learning strategies the following steps are taken:

1. Program assessment and Quality improvement committee (PAQIC) conducts meeting with other senior faculty members to identify the innovations in Teaching learning strategies to be implemented.
2. The innovative practices employed in teaching learning using the ARCS model of Instruction, Flipped classroom, JIGSAW, Student Teams Achievements Division (STAD), Think Pair Share (TPS), Open Book Exam (OBE) and Technology Enabled Learning are evaluated on students with different learning styles. A questionnaire is conducted to

students to assess their learning styles using Felder and Silverman models. The following link is used to conduct the survey

<http://www4.ncsu.edu/unity/lockers/users/f/felder/public/ILSpage.html>

3. According to Felder, there are four dimensions of learning styles, with each dimension having two opposite categories.

- i. Sensing / Intuitive - How information is perceived?
- ii. Visual / Verbal - How information is presented?
- iii. Active / Reflective - How information is processed?
- iv. Sequential / Global - How information is understood?

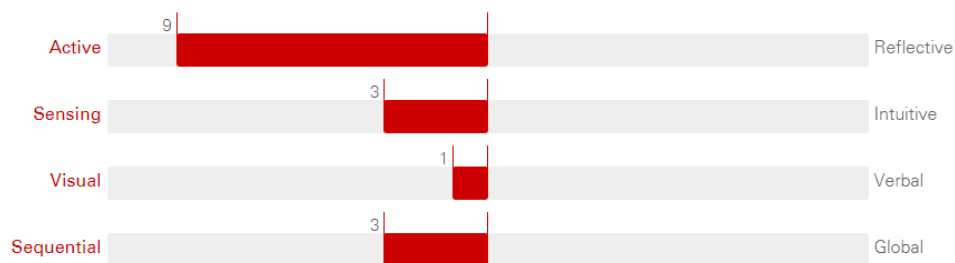
4. Students can be classified based on their learning styles as Active / Reflective, Sensing / Intuitive, Visual / Verbal and Sequence / Global

Type of Learner	Preferences
Sensing	Prefers concrete thinking, practical, concerned with facts and procedures
Intuitive	Prefers conceptual thinking, innovative, concerned with theories and meanings
Visual	Prefers visual representations, pictures, diagrams, and flowcharts
Verbal	Prefers written and spoken explanations
Active	Prefers to try things out, working with others in groups
Reflective	Prefers thinking things through, working alone or with a familiar partner
Sequential	Prefers linear thinking, orderly learns in small incremental steps
Global	Prefers holistic thinking, system thinkers, learns in large leaps

**Table B.5.5.a: Types of learners and their preferences**

Questionnaire Results for 16NM1A0463:

> Active: 9 > Sensing: 3 > Visual: 1 > Sequential: 3



**Figure B.5.5.b: Felder- Silverman index of learning styles**

5. Course end survey is collected from all the students at the end of each course on their understandings concerning teaching style adopted
6. Student's performance is assessed in MID examinations and University end examinations as per the university guidelines.
7. The obtained results are analyzed for the preparation of an action plan for the next academic year
8. The contribution of faculty towards innovations in teaching learning is made available on the institute website for peer review and critique.

#### **B. Work is available for peer review and critique (4)**

The innovations adopted for teaching and learning in our department are made available for peer review and critique by encouraging our faculty to do Engineering Educator Certification (IIEECP) course which is organized by Indo Universal Collaboration for Engineering Education (IUCEE) in association with International Society for Engineering Pedagogy (IGIP), Austria and Microsoft. The sample of peer review and critique received from the reviewers for the Innovations made by our department faculty towards Teaching and Learning is shown in Table B.5.5.b.

Sl. No	Name of the faculty	Strategies submitted for peer review and critique	Peer review and critique by reviewer	
			Marks (15M)	Comments
1	Dr. J. Sudhakar	Creating a dynamic classroom 1. Use Pictures, Schematics, graphs, and simple sketches 2. Providing open ended problem	15	Excellent work! Happy to know that you are an enthusiastic teacher, it helps in getting better outcome in class as students also takes things positively. Do enjoy the implementation. <i>Azeem Unnisa , 14-02-2018 at 4:03pm</i>
		Creating a dynamic classroom 1. Think Pair Share 2. Writing Assignments	15	Excellent work! I would like to know how the derivation was completed using TPS activity, it would have been better if the activity was explained phase wise of the TPS activity. Usually, TPS is conducted for 2 to 3 mins maximum. <i>Azeem Unnisa , 18-02-2018 at 3:58 pm</i>
		Effective Assessment-1	11	Good Information <i>sanjeev_kavale@bvb.edu , May 1,2018 at 9:52am</i>

		Effective Assessment-2	15	Well written, Reflective analysis is missing <i>sanjeev_kavale@bvb.edu</i> , 01-05-2018 at 11:32am
		Harnessing the power of technology- Creating a course website	13	Your submission page is impressive and you detailed each screenshot elaborately. I don't find any details about the syllabus from the screenshot and so as the associated items overall a good attempt. <i>Rajdeep Deb</i> , 11-04-2018 at 7:33pm
		Harnessing the power of technology- Flipped classroom	15	Your submission clear and exciting. A good attempt for a flipped classroom environment. Your reflective report involve good level of critical analysis, to me this is the showstopper of your submission. Like the fact that you shared all the content through LMS that is the prime purpose for which we asked you to develop LMS. <i>Rajdeep Deb</i> , 13-04-2018 at 12:55am
2	Mrs.Ch.Padmavani	Creating dynamic classroom- Discussion	10/10	Hello Padma Great sharing and activeness shown by you on discussion board. Keep it up <i>Siddharthsinh Jadeja</i> , Sep 3, 2018 at 12:04am
		Collaborative learning-Discussion	10/10	A good analysis of the experiment <i>Anitha D</i> , 22-09-2018, at 8:43 pm
		Collaborative learning-Assignment-1	14.25/15	Dear participant, Excellent plan. The following suggestions can be considered to improve the plan. Both the individual and group performance are measured by the quiz. This can be alternated with a design work evaluation for group performance. Wishing you good luck <i>Anitha D</i> , 29-09-2018, at 11:38 pm
		Collaborative learning-Assignment-2	17/20	A very good session is implemented. The evaluation process shall be elaborated in detail. Wishing you all the best. <i>Anitha D</i> , 27-10-2018, at 5:56 pm
		Collaborative learning Discussion-2	8/10	A good effort on making heterogeneous teams. The strategies ensuring success due to team formation shall be elaborated <i>Anitha D</i> , 19-11-2018 at 7:35pm
3	Mrs. T. Sandhya Kumari	Creating dynamic classroom-1: Sketches, graphs, and Schematics	13	The participant has carefully reviewed all 13 options and chosen the appropriate strategy/strategies. <i>Sneha Bisht</i> , 05-08-2018, at 11:30 pm



		Creating dynamic classroom-2: Think Pair Share, Writing Assignments	14	As these are very short activities, the choice of topic/sub-topic is important. Excellent - the topic is perfect for the activity. <i>Sneha Bisht, 11-08-2018, at 5:26 pm</i>
		Effective Assessment-1	11	Excellent, <i>Siddharthsinh Jadeja, 23-09-2018 at 11:30pm</i>
		Effective Assessment-2	15	Shows an excellent understanding of how an assessment item should be designed based on lessons learned. Establishes a clear link between the assessment instrument and the rubric. <i>Siddharthsinh Jadeja, 08-10-2018 at 1:10pm</i>
		CourseDesign-2 Planning an effective Lecture	14.5	The activity is very well planned and engages the full attention of the students and provides good feedback about student learning of key points/concepts covered in segment 1 and earlier. <i>Surendra Bandi, 7-10-2018 by 11:59pm</i>
		Collaborative Learning- Creating Rubrics	15	Good rubrics <i>Dr. Shaily Jain, 05-09-2018 at 6.23pm</i>
		Harnessing the power of technology- Creating Virtual Lab	13	Happy to find you able to augment student engagement through the virtual lab that you selected. Although you addressed all parts of the problem statement and outlined them in the submission page. But Your reflective report part needs to be more substantive. In the reflective report part, you need to be little elaborative as you are supposed to discuss it in terms of student's experience, benefits, limitation and problem that you faced in implementing the whole exercise. The main purpose of writing a lab manual is not to contribute to the knowledge of the field but to provide students the opportunity to perform the experiment systematically and complete the experiment more efficiently and effectively. I'm happy to find that lab manual that you provided exactly meant for this. Overall a good attempt and I'm impressed with the submission. <i>Rajdeep Deb , 04-10-2018, at 1:30 am</i>
		Harnessing the power of technology- Flipped classroom	13	I appreciate that you created your own video but our expectation was you should also share the link with us but that was not

				<p>the case with your submission. When it comes to planning and implementing the flipped classroom you avoid being brief. Your reflective report involves some fine insights and to me this showstopper of the submission.</p> <p><i>Rajdeep Deb, 02-10-2018, at 3:19 am</i></p>
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**Table B.5.5.b: Peer review and critique received from the reviewers for the Innovations made by our department faculty**

Along with this, we encourage our faculty to publish papers in engineering education related journals.

**C. Work must be reproducible and developed further by other scholars (2)**

The innovation strategies adopted by faculty are made available in the department library along with publishing in institute website. The faculty who implemented the strategy will conduct an orientation program to all the college faculty members and explains goals, significance, and the way of selecting an appropriate strategy. With this strategy, most of the faculty will try to reproduce the innovation strategies while delivering courses in the upcoming semesters. Our faculty also encouraged to submit papers on the innovations strategies adopted.

The scholars or college faculty may reproduce the innovation teaching learning strategies by incorporating

1. As the quality of methodology is greatly influenced by the learning style of the student, the work may be carried out with another method of assessing the learning styles of the students like Grasha-Reichmann model.
2. A flipped classroom may be conducted with another method of collaborating activity like JIGSAW or STAD as in class activity
3. JIGSAW strategy may be reproduced and observe the effectiveness by reducing the team size.

**D. Statement of clear goals, use of appropriate methods, significance of results, effective presentation and reflective critique (10)**

The innovative teaching learning strategies provide opportunities for students to work in teams, learn from peers, and learn from themselves. Also, the students have the opportunity to engage in sophisticated and complex levels of cognitive activity—define, analyze, evaluate, reflect, assess, and solve real-world problems. The evaluation suggests that implementation of these

methodologies in the engineering design courses improve the higher-level cognitive skills of the students as well as integrated theory, design, and practice.

### **I. Appropriate Methods**

To improve the quality of teaching learning and to make students actively participate in the class environment five types of best practices are employed. The best practices are

To improve the quality of teaching learning and to make students actively participate in the class environment, the following are the appropriate methods.

The appropriate innovations in teaching learning are:

1. ARCS Model (Attention, Relevance, Confidence, & Satisfaction)
2. Flipped Classroom
3. JIGSAW (Collaborative)
4. Student Teams Achievements Division (STAD)
5. Think Pair Share (TPS)
6. Open Book Examination (OBE)
7. Technology Enabled Learning (TEL)

#### **1. ARCS Model**

In any classroom, some students might learn more than students in the same or another classroom. The main reason for this is different levels of learning for students both within and across classrooms. In general, for effective content delivery, every educator must try to see that the content is reachable to at least 95% of the students in the class.

#### **Goals of the strategy:**

The ARCS model is an instructional design approach that focuses on the motivational aspects of the learning environment. The model was created by John Keller in the 80s. According to John Keller, there are four steps in the instructional design process - Attention, Relevance, Confidence, & Satisfaction (ARCS).

Attention refers to the interest displayed by learners in taking in the concepts/ ideas being taught. Relevance describes how the knowledge will help the learner's today and in the future (getting into a college or finding a job or getting a promotion).

Learning design enhances the student's confidence with a method for estimating their probability of success.

Learners must obtain some type of satisfaction or a reward from a learning experience. This can be in the form of a sense of achievement.

**Subject:** Computer Architecture & Organization

**Topic:** Pipeline Architecture

**Academic Year:** 2016 -17

**Class:** IV ECE B      **Semester:** I

Learning objective for the lecture: The student can:

- ✓ Understand pipeline architecture processor - RISC Pipeline Vector processing.

Component	Implementation Strategies
<p><b>Attention</b> (What is interesting about this?)</p> <p><i>Topic Content:</i> Pipeline Architecture - RISC processor</p>	<p>To draw the learners <b>Attention:</b></p> <ol style="list-style-type: none"> <li>1. Started class with brainstorming session by posing questions on what is meant by pipeline, multitasking, parallel execution, task breaking, etc.,</li> <li>2. Since pipeline architecture is an advanced technology, proposed to arrange 'Summer Internship' to Defense Research Organization.</li> <li>3. Gave real live product car fabrication which is fabricated in a pipelined fashion.</li> <li>4. To understand the real concept of throughput calculation video lectures is played with animation drawn from NPTEL courses.</li> <li>5. Used a variety of methods to reinforce the course material and which helps to incorporate a variety of learning styles.</li> </ol>
<p><b>Relevance</b> (Why should I be wasting my time studying this?)</p> <p><i>Topic Content:</i> Pipeline Architecture - RISC processor</p>	<p>My strategies to accomplish the <b>Relevance:</b></p> <ol style="list-style-type: none"> <li>1. The importance of new leavening was briefed to the students. This concept is more useful for microprocessor based embedded systems for which lot of avenues are open; also useful to get jobs in IoT related applications. A lot of demand in FABS companies, Chip fabrication companies, for students who are strong in Pipeline Architecture</li> <li>2. Case studies: some case studies have given related to RISC, CISC Processor based computers mostly used in weather forecasting.</li> <li>3. Goal oriented students: For those students who dream of pursuing higher studies and do research this is one area where there is a lot of scope.</li> <li>4. Machine Learning applications (especially Artificial Neural Networks) executing speed plays a major role so using pipe line architecture processor speed can be enhanced.</li> <li>5. Role Model: One super senior of our college presently who is working for INTEL company after finishing his MS in US, doing the job of <i>writing microprogramming</i> code for dual</li> </ol>

<p><b>Confidence</b> (This is not Difficult-I can do it)</p> <p><i>Topic Content:</i> Pipeline Architecture - RISC processor</p>	<p>processors.</p> <p>To build a sense of <b>Confidence in</b> learners:</p> <ol style="list-style-type: none"> <li><b>Motivation:</b> At the beginning of the semester, the students were told about the evaluation process. The importance of each examination including online exam and home assignments is very much motivated. The students will be motivated with quotes like ' if the first button of a shirt is put wrongly, rest of the buttons also will be put wrongly, in the same if a student fails in one semester its impact will be there on rest of the semesters.</li> <li><b>Self-Growth:</b> Each student was asked to prepare their future Goals, type neatly display in his/her study room. They were also asked to display great scientist's photos like Einstein, Faraday, in the study room. The Goals are revised by me frequently. They are also advised to participate in Campus Recruitment Training Courses and technical workshops. Goals are verified by T&amp;P faculty once in a month and were asked to rewrite/modified their own Goals.</li> <li><b>Feedback:</b> Mentors are appointed for every 20 students to monitor their performance in every month. Mid exam marks are displayed on notice board and poor performance students are motivated to improve their performance. Slow learners are identified based on their performance; special care is taken for such students to improve their performance.</li> <li><b>Small Group Activities:</b> The learners are divided into groups of three to six. Each group is assigned a team number and each group member is assigned a unique id. When the trainer poses a question, group members get together, examine the possibilities, and construct an answer. The trainer then picks a number by drawing a card or rolling a die. The number selected designates the spokesperson for each table group. A second number designates the table group that will respond first. By involving in such group activities students are well motivated.</li> </ol>
<p><b>Satisfaction</b> (This is great - I have learned something new and useful)</p> <p><i>Topic Content:</i> Pipeline Architecture - RISC processor</p>	<p><b>Learner's Satisfaction:</b></p> <ol style="list-style-type: none"> <li>Outstanding performance students are appreciated through rewards in public, like their names are displayed in college notice board, special appreciation letter from the principal, fee waiving from management.</li> <li>Parents whose wards are selected on-campus drives are felicitated along with their ward on Graduation Day. It gives motivation to juniors and self satisfaction for selected students.</li> <li><b>Equity:</b> Transparency is maintained in all evaluation systems. Perfect rubrics are defined and displayed for students. The</li> </ol>

	examination system is transparent and all mid marks are displayed in notice boards.
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**Table B.5.5.c: Implementation of Strategies**

### Significance of results & reflective critique:

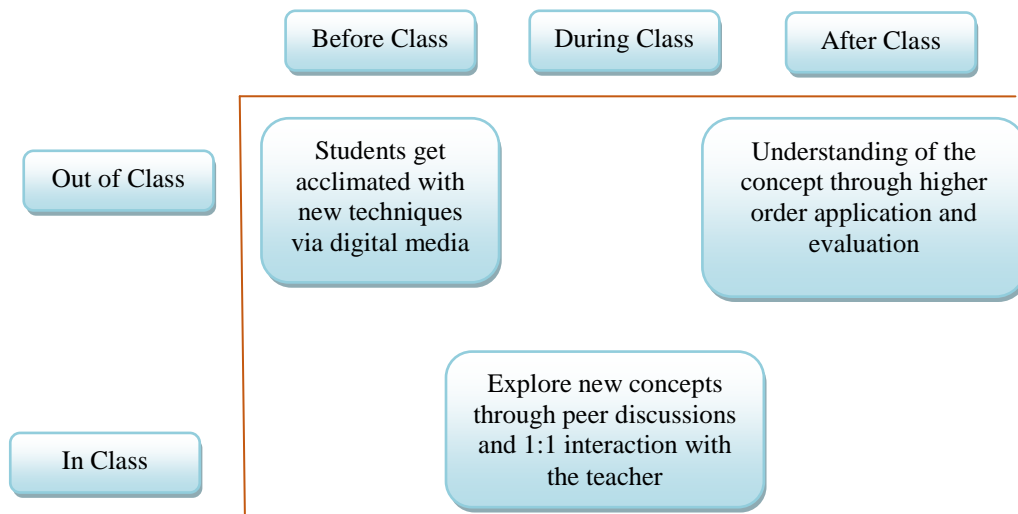
The objective of this assignment is to learn how to apply the ARCS model to the content that is teaching. The concept says students learn best

- i) When the teacher can generate sufficient interest in the topic being studied,
- ii) When the content is relevant,
- iii) One might feel they can master it, and
- iv) When they have the feeling that their effort has been well rewarded and they have learned something new and useful.

To begin with, you might think, who has the time to do all this for every concept the faculties are teaching but this is more a question of mindset and incorporating these does not take more time or effort than what your normal preparation would. Once you start working on these lines, your strategies/examples, lecture style will automatically start incorporating these.

## 2. Flipped Classroom

Flipped classroom methodology mainly focuses on inquiry based learning with access to vast web information. The flipped strategy is a blended strategy to enhance student engagement and to attain predefined outcomes.



**Figure B.5.5.c: Implementation of flipped classroom strategy**

This strategy includes three activities namely before, during, and after class activities as shown in Figure B.5.5.c. Students get exposure to new technologies over digital media and the instructions given by the teacher over video lectures. During class, students interact with the teacher and other students to explore new concepts. Based on the understandings, an assessment test may be conducted for the assessment.

**Benefits of the Flipped classroom:**

- More participation of students.
- Improved Faculty and Student interaction.
- Appropriate use of resources by the teacher for constructive learning methods.

**Goals of the activity:**

- Calculate the Laplace Transform of basic functions using the definition.
- Apply Laplace Transforms to find solutions of initial value problems for linear ordinary differential equations (ODEs).
- Compute Region of Convergence (ROC) for various functions.

**Outcomes:**

- Determine Laplace transforms and inverse Laplace transforms of various basic functions.
- Understand and apply the concept of ROC to various functions.
- Use Laplace transforms to determine general or complete solutions to linear ODEs.

**Implementation:** The implementation of a flipped classroom strategy for Signals and Systems course is presented below

**Subject:** Signals and Systems

**Class:** II ECE-A

**Academic Year:** 2016-17

**Sem:** I

**Topic:** Mathematical analysis of Laplace Transform

**Open source NPTEL video:** [https://www.youtube.com/watch?v=TSkHT5solVM&list=PLq-Gm0yRYwTjwxagapPsSAHzs4\\_nkQLVr&index=18](https://www.youtube.com/watch?v=TSkHT5solVM&list=PLq-Gm0yRYwTjwxagapPsSAHzs4_nkQLVr&index=18)

**Introduction to Video:**

The Laplace transform is a particularly elegant way to solve linear differential equations with constant coefficients. It converts a function of a positive real variable  $t$  (usually time) to a complex function of a complex variable  $s$  (frequency). The Laplace transform is particularly useful in solving linear ordinary differential equations such as those encountered in the analysis of electronic circuits. The purpose of the Laplace Transform is to transform ordinary differential

equations (ODEs) into algebraic equations, which makes it easier to solve ODEs. In this video, the definition of Laplace Transform, Region of Convergence (ROC), and Laplace Transform of Unit Impulse and Step Functions are discussed. <https://drsudhakar.coursesites.com/>

**Question Posed:** Find the Laplace transform for various basic functions and Compare its Region of Convergence (ROC).

**Outcomes:**

At the end of this activity, the student will be able to:

- Determine Laplace transforms and inverse Laplace transforms of various functions.
- Analyze the Region of Convergence for diverse functions
- Use Laplace transforms to determine general or complete solutions to linear ODEs.

**Planning of activity:**

Pre Class Content: Provided web source to watch a video, textbooks for reference, and some web links in before all the learners. All the instructions were clearly described in the video uploaded on the course website.

- Pre Class Activity: Students were instructed to write the assignments based on their understandings
- In Class Activity: Conducted Think Pair Share dynamic class activity in class to assess the outcomes.
- Post Class activity: As a post class activity, conducted a quiz.
- Assessed and evaluated each student at each stage.

**Assessment:**

Sl.No	Roll No	Name of the Student	Team No	Pre Class Activity-Assignment (10M)	In Class Activity-Think Pair Share (10M)	Post Class Activity-Quiz (10M)	Total (30M)

**Table B.5.5.d: Assessment of activities**

**Significance of results & reflective critique:**

- All the students paid more attention while explaining this activity, accessing the web source and all actively participate in In-class activity
- The slow learners are also actively participated in par with bright students



- The traditional classroom was perfectly converted into student centric classroom.
- With the predefined evaluation process, all students actively participated in every stage of the activity.

### **3. JIGSAW (Collaborative Learning):**

Collaborative learning is a group activity that involves students working together to obtain a solution to a problem. Collaborative learning is effective in a teaching programming course. Hence Collaborative learning is introduced to learn Signals and Systems.

The basic process involves the formation of two student groups HOME (JIGSAW) groups and EXPERT groups. The group size would be at most 5. An EXPERT group is formed with the leaders of JIGSAW group.

<b>Course</b>	: Signals and Systems
<b>Class</b>	: II ECE A, I SEM
<b>Academic Year</b>	: 2016-17
<b>Topic</b>	: Fourier Transforms
<b>Activity Chosen</b>	: JIGSAW- Collaborative

#### **Concept for activity:**

1. Fourier transform from Fourier series
2. Fourier transform of arbitrary and standard signals.
3. Properties of Fourier transform

#### **Goals of this activity:**

At the end of this activity, students will be able to:

1. Determine the Fourier transform of various functions.
2. Analyze the spectral characteristics of signals using Fourier analysis.
3. Identify system properties based on impulse response and Fourier analysis.

#### **Outcome of the Activity:**

- Builds self-esteem in students
- Increases student retention
- Enhances student knowledge with the learning experience

- Develops oral communication skills
- Develops social interaction skills

**Strategy to create Home Groups:**

1. The faculties are confident that the success of the collaborative activity is based on how the best individual skill sets are considered and mix them while team formation.
2. Before forming the balanced teams, a questionnaire is conducted to students to assess their learning styles.
  - a) Sensing-intuitive - how information is perceived
  - b) Visual-verbal - how information is presented
  - c) Active-reflective - how information is processed
  - d) Sequential-global - how the information is understood

The learning style of each student is classified with the help of the Felder and Silverman model. Students are categorized according to the Index of Learning Styles questionnaire. This questionnaire categorized a student's preferred learning style along a sliding scale of four dimensions

To conduct the survey the following link is used:

<http://www4.ncsu.edu/unity/lockers/users/f/felder/public/ILSpace.html>

**Time planned:**

The time required to execute the event is a maximum of 150 min (3 sessions) including a survey of student learning styles, JIGSAW and EXPERT group formation, peer discussion, student evaluation.

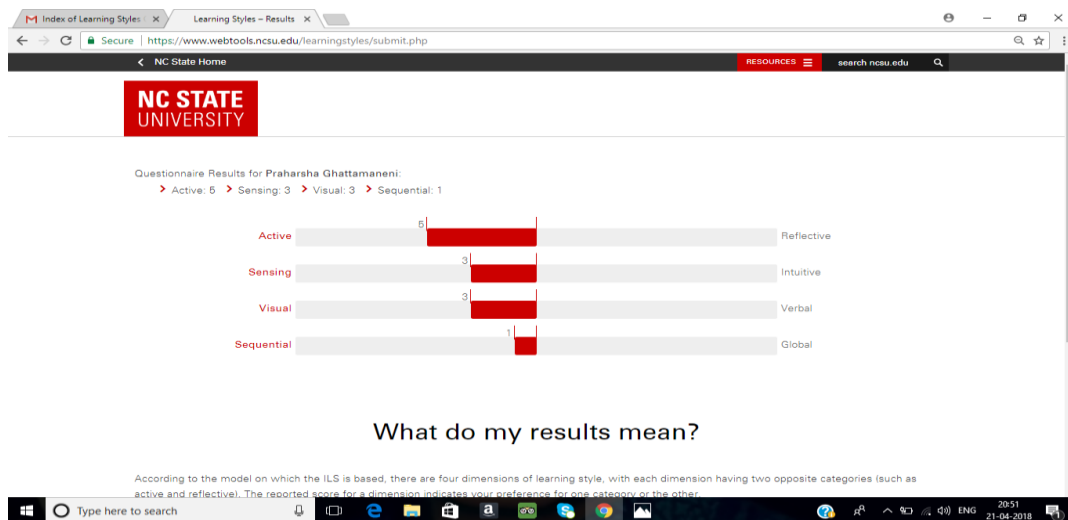
**Formation of HOME groups (Heterogeneous):**

The study was carried out with 66 students on the Signals and systems course. The total students are classified into 13 teams where 12 teams contain 5 members each and the remaining 1 team contains 6 members. Care is taken to match the group size to the assigned subtasks. At the end of the collaborative learning, students were graded individually and group wise.

Students are divided into heterogeneous HOME groups and subsequently regrouped into 10 homogeneous groups known as EXPERT groups.

The 13 HOME groups are identified with scientist's names like Albert Einstein, Isaac Newton, Stephen Hawking, Niels Bohr, etc. In each team, the group members are identified as A1, A2, A3, A4, A5, B1, B2, B3, B4, B5, etc.

The Strong Global Learners of each group A1, B1, C1, D1, etc are appointed as group leaders. Table B.5.5.e shows the learning styles score and their member ID of an individual student.



**Figure B.5.5.d: learning style of a student based on a questionnaire**

Learning Styles	Number of students	Percentage of students (%)
Active	15	24.61
Reflective	3	3.07
Sensing	5	6.15
Intuitive	5	6.15
Visual	20	33.8
Verbal	3	3.07
Sequential	8	12.30
Global	7	10.76

**Table B.5.5.e: Percentage of student distribution based on their learning styles**

**Implementation of Activity**

<b>Course</b>	: Signals and Systems
<b>Academic Year</b>	: 2016-17
<b>Class</b>	: II ECE A, I SEM
<b>Topic</b>	: Fourier Transforms
<b>Activity Chosen</b>	: JIGSAW

**Concept for activity:** Fourier transforms from Fourier series, Fourier transform of arbitrary and standard signals. Properties of Fourier transform

The Instruction execution is subdivided into 6 segments.

- i) Fourier transform from Fourier series.
- ii) Fourier transform of arbitrary signals
- iii) Fourier transform of standard signals
- iv) Fourier transform of periodic signals
- v) Properties of Fourier transform
- vi) Fourier transforms involving impulse function and signum function

Group No.	JIGSAW Home Group	Student Roll No	Member ID	Student learning ability	Topic Assigned to group
1	Albert Einstein (A)	15NM1A0413	A1-Leader	Strong Active Learner	Fourier transform from Fourier series
		15NM1A0430	A2	Strong Reflective Learner	
		15NM1A0402	A3	Strong Verbal Learner	
		15NM1A0408	A4	Strong Intuitive Learner	
		15NM1A0441	A5	Strong Visual Learner	
2	Isaac Newton (B)	15NM1A0429	B1-Leader	Strong Global Learner	Fourier transform of arbitrary signals
		15NM1A0454	B2	Strong Sequential Learner	
		15NM1A0459	B3	Strong Active Learner	
		16NM5A0404	B4	Strong Visual Learner	
		15NM1A0431	B5	Strong Visual Learner	
3	Stephen Hawking (C)	15NM1A0432	C1-Leader	Strong Global Learner	Fourier transform of standard signals
		15NM1A0458	C2	Strong Sequential Learner	
		15NM1A0457	C3	Strong Active Learner	
		15NM1A0421	C4	Strong Reflective Learner	
		15NM1A0433	C5	Strong Visual Learner	
4	Niels Bohr (E)	15NM1A0445	D1-Leader	Strong Global Learner	Fourier transform of periodic
		15NM1A0460	D2	Strong Sequential Learner	

		15NM1A0442	D3	Strong Active Learner	signals
		15NM1A0406	D4	Strong Verbal Learner	
		15NM1A0437	D5	Strong Visual Learner	
5	Faraday (F)	15NM1A0461	E1-Leader	Strong Global Learner	Properties of Fourier transform
		15NM1A0407	E2	Strong Active Learner	
		15NM1A0403	E3	Strong Intuitive Learner	
		15NM1A0438	E4	Strong Visual Learner	
		15NM1A0402	E5	Strong Global Learner	
6	Galileo (G)	15NM1A0405	F1-Leader	Strong Sensing Learner	Fourier transforms involving impulse function and signum function
		15NM1A0415	F2	Strong Active Learner	
		15NM1A0412	F3	Strong Intuitive Learner	
		15NM1A0440	F4	Strong Visual Learner	
		15NM1A0409	F5	Strong Verbal learner	
7	Thomas Edison (H)	15NM1A0427	G1-Leader	Strong Global Learner	Fourier transform from Fourier series
		15NM1A0419	G2	Strong Active Learner	
		15NM1A0418	G3	Strong Intuitive Learner	
		15NM1A0448	G4	Strong Visual Learner	
		15NM1A0422	G5	Strong Sensing Learner	
8	Graham Bell (K)	16NM5A0403	H1-Leader	Strong Sequential Learner	Fourier transform of arbitrary signals
		15NM1A0401	H2	Strong Active Learner	
		15NM1A0404	H3	Strong Visual Learner	
		15NM1A0451	H4	Strong Visual Learner	
		15NM1A0428	H5	Strong Active Learner	
9	Charles Darwin (I)	15NM1A0444	I1-Leader	Strong Sequential Learner	Fourier transform of standard signals
		15NM1A0425	I2	Strong Active Learner	
		15NM1A0411	I3	Strong Visual Learner	
		16NM5A0405	I4	Strong Visual Learner	
		15NM1A0446	I5	Strong Active Learner	
10	Archimedes (J)	15NM1A0447	J1-Leader	Strong Sequential Learner	Fourier transform of periodic signals
		15NM1A0434	J2	Strong Active Learner	
		15NM1A0416	J3	Strong Visual Learner	
		15NM1A0410	J4	Strong Sensing Learner	
		15NM1A0449	J5	Strong Visual Learner	
11	Rutherford (K)	15NM1A0450	K1-Leader	Strong Sequential Learner	Properties of Fourier transform
		15NM1A0436	K2	Strong Active Learner	
		15NM1A0424	K3	Strong Visual Learner	
		15NM1A0414	K4	Strong Sensing Learner	
		15NM1A0455	K5	Strong Visual Learner	
12	James Maxwell (L)	15NM1A0453	L1-Leader	Strong Sequential Learner	Fourier transforms involving impulse function and
		15NM1A0439	L2	Strong Active Learner	
		16NM5A0401	L3	Strong Visual Learner	
		15NM1A0435	L4	Strong Visual Learner	

		15NM1A0452	L5	Strong Visual Learner	signum function
13	Charles-Augustin de Coulomb (M)	15NM1A0443	M1-Leader	Strong Global Learner	Fourier transform of standard signals
		15NM1A0423	M2	Strong Active Learner	
		15NM1A0420	M3	Strong Intuitive Learner	
		15NM1A0417	M4	Strong Reflective Learner	
		15NM1A0426	M5	Strong Sensing Learner	
		15NM1A0462	M6	Strong Visual Learner	

**Table B.5.5.f: Formation of JIGSAW Home Groups (Heterogeneous Groups)**

### Formation of EXPERT groups (Homogeneous)

Students separated from their "Home Group" and formed a new group with the other students who are responsible for preparing the same topic. This group is called the "EXPERT" group. These group members are responsible to make other students understand the topic. These groups by default become Homogeneous in their abilities. The group members make plans about how they can teach the subject content to their friends, and prepare a report. Afterward, they turn back to their respective "HOME" groups and share their acquired knowledge with colleagues with the help of the reports they have prepared. EXPERT groups are formed by picking one –one member from each HOME group. Expert group size is 6 and hence 10 groups are formed. EXPERT groups EG1, EG2, EG3, EG4, EG5, EG6, EG7, EG8, EG9, and EG10 are shown in Table B.5.5.g

Sl. No.	Expert Group Name	Expert Group Members
1	EG1	A1, B1, C1, D1, E1, F1, M1: HOME Group Leaders
2	EG2	A2, B2, C2, D2, E2, F2, M2: HOME groups members
3	EG3	A3, B3, C3, D3, E3, F3, M3: - do-
4	EG4	A4, B4, C4, D4, E4, F4, M4: - do-
5	EG5	A5, B5, C5, D5, E5, F5, M5: - do-
6	EG6	G1, H1, I1, J1, K1, L1: HOME Group Leaders
7	EG7	G2, H2, I2, J2, K2, L2, M6: HOME group member
8	EG8	G3, H3, I3, J3, K3, L3: - do-
9	EG9	G4, H4, I4, J4, K4, L4: - do-
10	EG10	G5, H5, I5, J5, K5, L5: - do-

**Table B.5.5.g: List of Expert Groups (Homogeneous) and their Team Members**

**Process of Evaluation:**

Both **Formative assessment** and **Summative assessment** activities are used to judge final products for completion, competency, and/or demonstrated improvement.

To evaluate the student two components are required namely Individual and group assessment. Individual quizzes and group quizzes are conducted for all the 10 batches.

Evaluation by the instructor provides students with feedback on the understanding of content, concepts, and applications. Quiz exams are conducted for individuals and each group separately.

The grades are shown in the given Table B.5.5.h.

**Significance of results & reflective critique:**

At the end of the activity, the educator asks the students to give their opinion about this activity. Students gave different kinds of answers saying that it is good, OK. But batch 3 & 4 team leaders they fully involved and enjoyed the activity. They reported that this activity is excellent and they learned a lot on their own. Then three poll questions are posed to students to determine their positive and negative views on the cooperative learning environment and JIGSAW technique;

**Question 1**

What can you say about the aspects of JIGSAW practices which have positive effects on you?

Student responses: Out of 66 students great many reported that 'JIGSAW technique was very 'Instructive', 'Created interest on the subject', 'responded positively ', affected the interaction and cooperation in the classroom', and it was 'enjoyable'

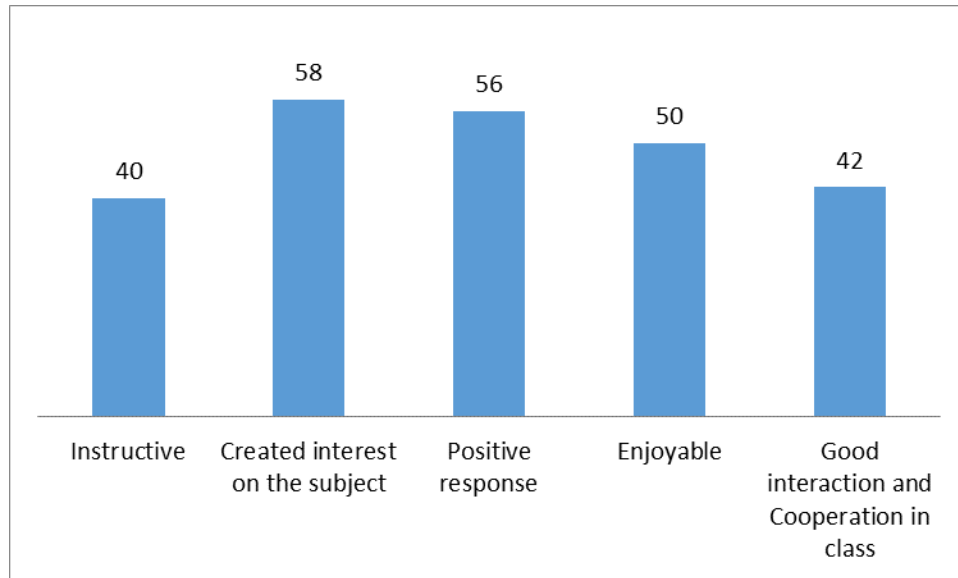
Instructive: 40

Created interest on the subject: 58

Positive response: 56

Enjoyable: 50

Good interaction and Cooperation in class: 42



**Figure B.5.5.e: Feedback for JIGSAW technique.**

### Question 2

What can you say about the sides of the JIGSAW technique with negative effects in your opinion?

Student responses: Few students reported that JIGSAW technique was 'time-consuming', "Their friends with low achievement made them tired" and "The noise occurred during group works was disturbing". Besides, 2 - 3 students expressed that it would be more effective if the topic was taught by the teacher instead of using this method.

After considering their feelings, noticed that they are slow learners in my class and their native language is Telugu (a local language)

### Question 3

What are the changes you have observed after the application of this technique?

Most students reported that this technique enhanced our learning capacity', 'it increased our self-confidence', 'provided peer interaction and cooperation', 'and they felt that they were more 'active', 'learned a lot on our own'.



**Assessment:**

Team No	JIGSAW Team	Home Group Member ID	Formative Assessment		Summative Assessment		Final Score (50M)	Median Score:45
			Individual Observation (10M)	Group Observation (10M)	Individual Quiz (15M)	Group Quiz (15M)		Performed less than Median Score (Yes/No)
1	Albert Einstein (A)	A1- Leader	10	10	14	13	47	NO
		A2	8		14		44	YES
		A3	9		13		45	NO
		A4	8		15		46	NO
		A5	10		12		45	NO
2	Isaac Newton (B)	B1-Leader	10	8	15	15	48	NO
		B2	9		12		44	YES
		B3	8		13		44	YES
		B4	7		14		44	YES
		B5	6		13		42	YES
3	Stephen Hawking (C)	C1-Leader	9	9	15	14	47	NO
		C2	7		12		42	YES
		C3	9		14		46	NO
		C4	10		13		46	NO
		C5	8		15		46	NO
4	Niels Bohr (D)	D1	10	10	15	13	48	NO
		D2	9		14		46	NO
		D3	8		15		46	NO
		D4	10		14		47	NO
		D5	10		15		48	NO
5	Faraday (E)	E1-Leader	10	9	15	12	46	NO
		E2	8		14		43	YES
		E3	9		13		43	YES
		E4	9		12		42	YES

		E5	8		14		43	YES
6	Galileo (F)	F1-Leader	9	9	15	15	48	NO
		F2	8		14		46	NO
		F3	7		13		44	YES
		F4	9		15		48	NO
		F5	10		12		46	NO
7	Thomas Edison (G)	G1-Leader	10	8	14	14	46	NO
		G2	9		13		44	YES
		G3	7		12		41	YES
		G4	8		13		43	YES
		G5	9		15		46	NO
8	Graham Bell (H)	H1-Leader	10	8	14	13	45	NO
		H2	8		15		44	YES
		H3	9		13		43	YES
		H4	7		14		42	YES
		H5	6		12		39	YES
9	Charles Darwin (I)	I1-Leader	8	10	14	12	44	YES
		I2	9		15		46	NO
		I3	10		13		45	NO
		I4	9		12		43	YES
		I5	8		11		41	YES
10	Archimedes (J)	J1-Leader	8	10	12	15	45	NO
		J2	9		15		49	NO
		J3	10		14		49	NO
		J4	9		13		47	NO
		J5	7		14		46	NO
11	Rutherford (K)	K1-Leader	9	8	12	14	43	YES
		K2	8		15		45	NO
		K3	10		13		45	NO
		K4	9		14		45	NO
		K5	6		13		41	YES

12	James Maxwell (L)	L1-Leader	10	9	12	14	45	NO
		L2	8		13		44	YES
		L3	9		14		46	NO
		L4	7		15		45	NO
		L5	6		14		43	YES
13	Charles- Augustin de Coulomb	15NM1A0443	8	9	13	14	44	YES
		15NM1A0423	9		15		47	NO
		15NM1A0420	10		13		46	NO
		15NM1A0417	9		14		46	NO
		15NM1A0426	7		13		43	YES
		15NM1A0462	8		14		45	NO

**Table B.5.5.h: Assessment sheet for JIGSAW activity**

### 3. Student Teams Achievement Division (STAD)

In Student Teams-Achievement Divisions (STAD), students are assigned to four-member learning teams that are mixed in performance level, gender, and ethnicity. The teacher presents a lesson, and then students work within their teams to make sure that all team members have mastered the lesson.

#### Goals of the strategy:

- Students work together in achieving its objectives by upholding the norms of the group.
- Actively assist and motivate students to succeed in a shared passion.
- Active role as a peer tutor to further enhance the success of the group.
- Interaction among students with increasing their ability to argue.

#### Outcomes:

- Develop an input-output relationship for a linear shift invariant system and understand the convolution operator for continuous and discrete time system
- Develop individual and teamwork to solve the response of linear systems.
- Apply their ideas and thoughts during team discussion during deadlock

#### Implementation:

The STAD activity implemented for Signals and Systems course (II ECE-A-I Sem; A.Y: 2016-17) for Response of linear systems topic is presented below

- Interaction session to present the content
- Make teams based on one criterion
- Teams work together to solve the given task
- Educator conducts individual quiz and a team quiz
- Determine team average and each peer improvement scores

#### Time schedule:

- |  |                      |
|--|----------------------|
| • Interaction session by educator      | : 50 min (1 session) |
| • Making Teams, Sources of information | : 50 min (1 session) |
| • Activity (3 sessions)                |                      |
| Collaborative learning-                | : 50 min (1 session) |
| (Characteristics of radio receivers)   |                      |
| Individual Quiz                        | : 50 min (1 session) |
| Group Quiz                             | : 50 min (1 session) |

Total sessions : 05

Initially, an Instructor provides a brief idea about the STAD activity to achieve better results. One session of 50 min was allocated for this interactive session. The outcomes of the activity will be communicated to all the students. Along with the activity, the basics involved in the tasks assigned were also discussed as per the following schedule.

- Linear Time Invariant (LTI) systems : 10 min
- Linear Time Variant (LTV) systems : 10 min
- Transfer function of LTI systems : 10 min
- Filter characteristics of Linear systems : 10 min
- Distortion less transmission through system : 10 min

**Assessment:**

Sl.No	Team ID	Member ID	Roll No	Individual (W1: 1)		Collective (W2:3)		Score	Median Sore (25.5)	Important reason for team result
				Formative-Observation (A: 3 M)	Summative-Individual Quiz (B: 3 M)	Formative – Observation (C: 3M)	Summative – Group Quiz (D: 5M)	W1A+ W1B+ W2C+ W2D (30 M)	Is less than Median Score	

**Table B.5.5.i: Assessment sheet for STAD activity**

**Significance of results & reflective critique:**

1. Students actively participated in the activity
2. Communication skills are improved
3. Some students' confidence level for sharing the information in the class is improved

**4. Think Pair Share Activity (TPS)**

Think-Pair-Share (TPS) is a collaborative learning strategy where students work together to solve problems or answer a question about assigned reading. This technique requires students to think individually about the topic or answer a question and share ideas with colleague students. Discussing responses with peers serves to maximize participation, direct attention, and engage students in reading comprehension. The three phases in TPS are structured as Think - the instructor poses a question, to which students individually write their answers,

Pair - students work on a well defined task with their neighbor(s), and Share - students engage in a class-wide discussion, sharing their answers and reasoning, and debating alternate solutions.

**Goals of the Think Pair Share:**

- To activate student's prior knowledge
- To Enhances oral communication skills
- To make students active learners

**Outcomes:**

- Classify systems based on their properties and determine the response of the Linear Shift Invariant (LSI) system using convolution.
- Summarize the Convolution concepts learned from digital media
- Demonstrate the findings effectively with other peers and criticize the other's conclusions.

**Implementation:** The implementation of a Think Pair Strategy for Signals and systems (A.Y: 2016 - 17; Class: ECE A; Year: II; Sem: I) course is presented below

**Subject: Signals and Systems**

**Class: II ECE-A**

**Think phase:** The instructor posed a question, such as “Demonstrate the concept of convolution”. The students worked individually on the task, for about ten minutes.

**Pair phase:** The instructor gave a task related to the Think phase, such as check your neighbor's solution, or work with your neighbor to write the detailed answer for the given question. The students worked with one of their neighbors to complete the task, in five to ten minutes. The instructor walked along the aisles, encouraging discussion and answering queries.

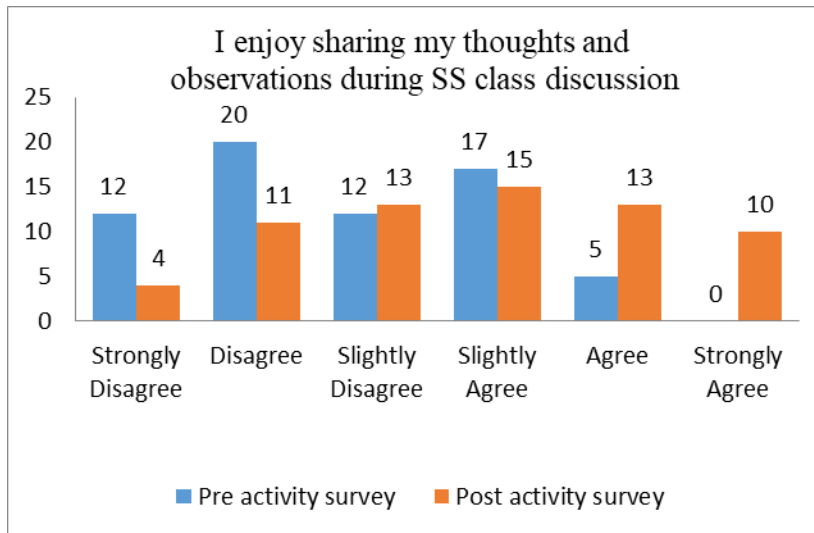
**Share phase.** The instructor facilitated a class-wide discussion related to the tasks in the Think and Pair phases. Student's responses in the Think and Pair phases formed an important part of the discussion in this phase.

**Assessment:**

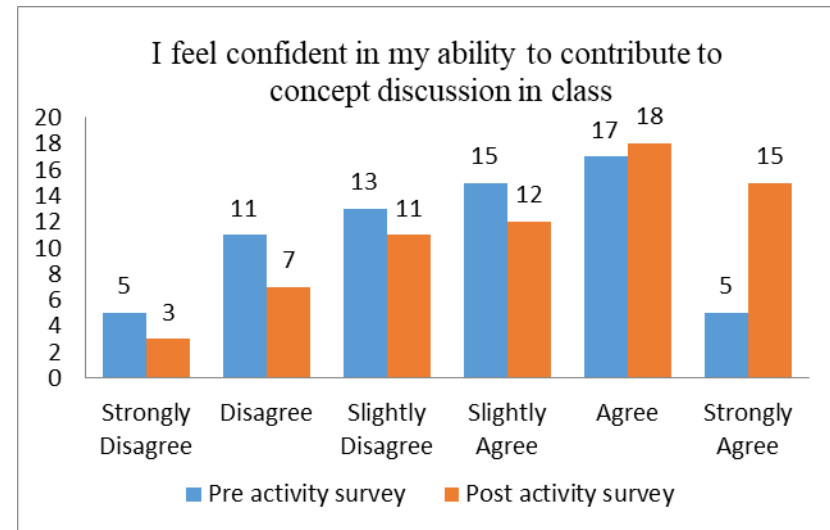
The students took a survey about their class participation and confidence at the beginning and at the end of the activity. The consolidated survey report is as shown in Table B.5.5.j.

Sl. No	Description	Pre activity survey						Post activity survey					
		Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
1	I enjoy sharing my thoughts and observations during SS class discussion	12	20	12	17	5	0	4	11	13	15	13	10
2	I feel confident in my abilities in SS	3	7	25	21	7	3	3	7	17	21	9	9
3	I feel confident in my ability to contribute to concept discussion in class	5	11	13	15	17	5	3	7	11	12	18	15
4	I often participate in class discussion in SS class	6	7	11	17	20	5	1	5	11	15	21	13
5	I am comfortable in contributing to class discussion in SS class	5	5	17	17	15	5	3	7	9	21	15	11

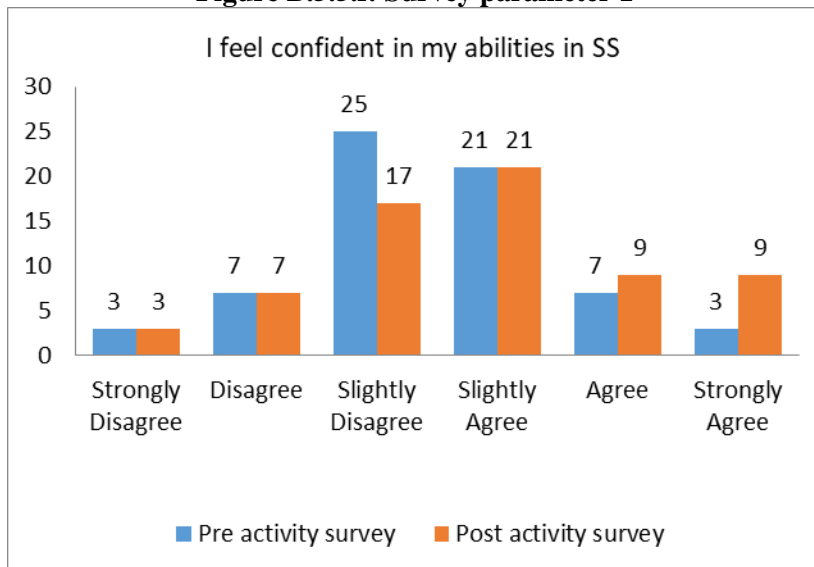
Table B.5.5.j: Survey report for Think Pair Share Activity



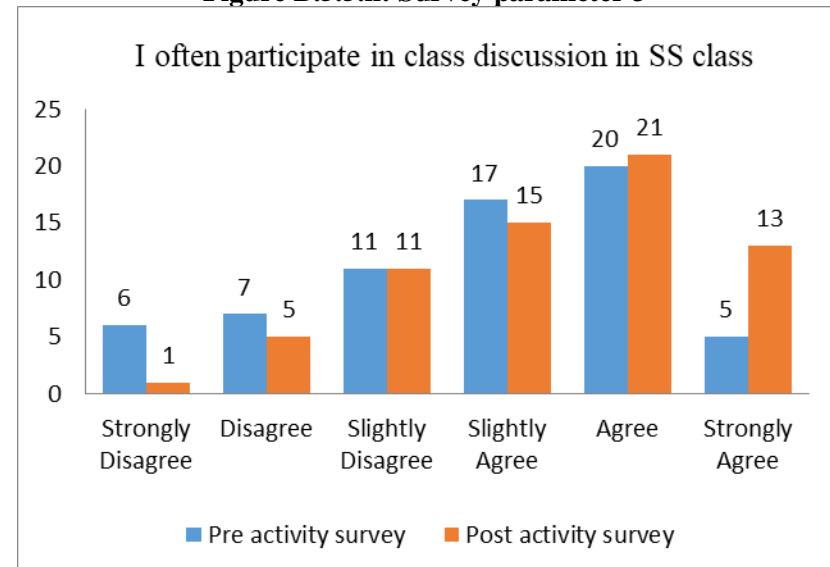
**Figure B.5.5.f: Survey parameter 1**



**Figure B.5.5.h: Survey parameter 3**

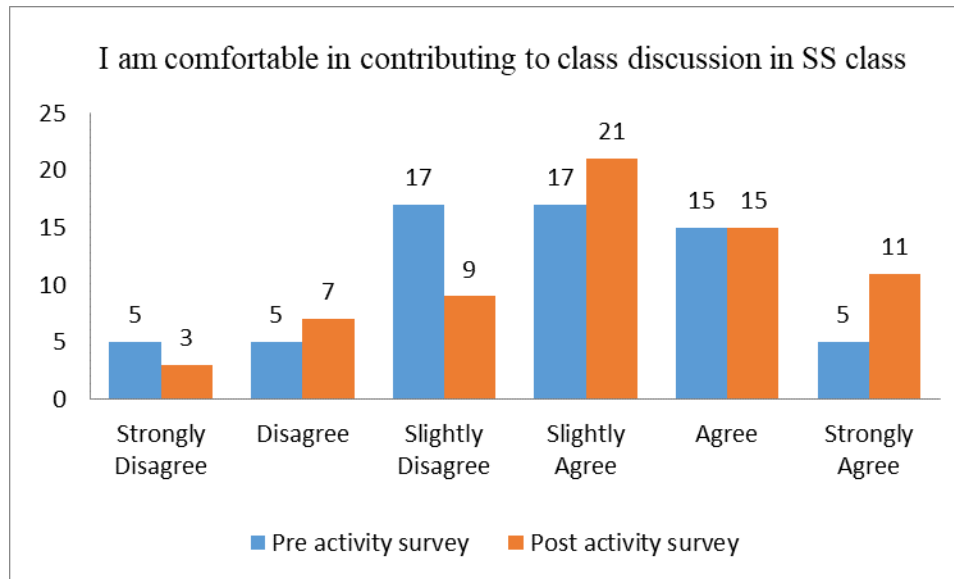


**Figure B.5.5.g: Survey parameter 2**



**Figure B.5.5.i: Survey parameter 4**





**Figure B.5.5.j: Survey Parameter 5**

Based on the survey report obtained for pre activity and post activity, the comparison of each parameter is shown in Figures B.5.5.f-B.5.5.j.

**Significance of results & reflective critique:**

1. The number of students who enjoyed the class is increased.
2. Most of the students agreed that they are confident in contributing to the classroom discussion.
3. Student's learning ability increased.
4. Students have shown interest to participate in classroom discussions often.
5. Students felt comfortable during classroom activities.

**5. Open Book Examination (OBE)**

An "Open Book Examination" is that in which students are allowed to refer to class notes and summaries, textbooks, or other approved material while answering questions. Open book examination creates an enriched environment, offering the opportunity to better understanding. II ECE A sem I (2015 admitted batch) students were assessed for Closed Book Sitting and Open Book Sitting for the *Electronic Devices and circuits* course. The test population consists of 66 students from II Year, semester I.

**Assessment Method:**

The assessment method used for the proposed study consist of on-line multiple choice questions, comprising 50 questions. Test questions are set in concurrence with Bloom's Taxonomy levels. The test was administered under similar conditions for the Closed Book Examination (CBE) and Open Book Examination (OBE).

The students first completed the assessment is closed book sitting, and then approximately one week later, completed the same assignment in the open book sitting. A time limit of 60 minutes was set for students, within which they were expected to complete the test. After the first test, the students were told that they would be asked the same set of questions, with full access to any books they may require.

Test results of both the examinations were collected and statistical analysis is performed. The analyzed data is shown in Table B.5.5.k

	<b>Closed Book</b>	<b>Open Book</b>
Minimum mark	20	31
Maximum Mark	46	48
Mean value	33	39.5
Standard Deviation	5.14	5.94
No. of students completed test	66	66

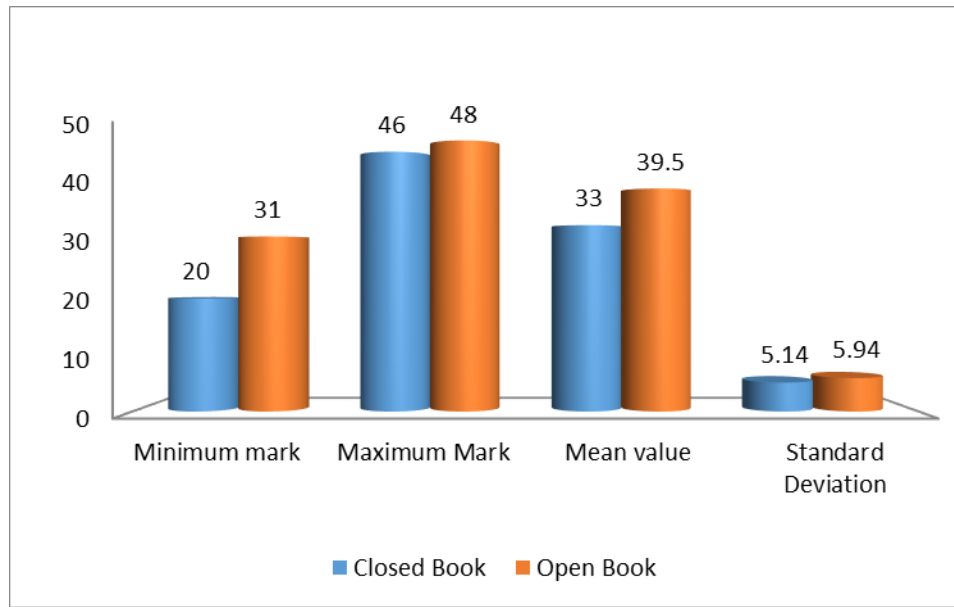
**Table B.5.5.k: Open book and closed book analyzed data**

**Closed Book analysis:**

The minimum and maximum scores for the closed book sitting were 40% and 92% respectively, with a mean of 66%

**Open Book Sitting**

The minimum and maximum scores for the closed book sitting were 62% and 96% respectively, with a mean of 79%. There is an increase of 13% mean value and the standard deviation of both methods are almost the same.



**Figure B.5.5.k: Comparison of marks of all students who Completed the assessments both OBE and CBE**

#### **Time limit:**

The time taken by students to complete the open book assessment, over and above the time limit of 60 minutes was recorded. However, some students are allowed to continue examination beyond the time limit also. 54 students completed the test within the time limit, while 12 students required additional time to complete the assessment.

	Completed in < 60 min	Completed in > 60 min	
	Marks	Marks	Extra time in min
Minimum Mark	29	30	5
Maximum mark	48	42	14
Mean Value	40.38	35.63	9.13
Standard deviation	5.91	4.10	2.85
No, of students completed test	54	6	6

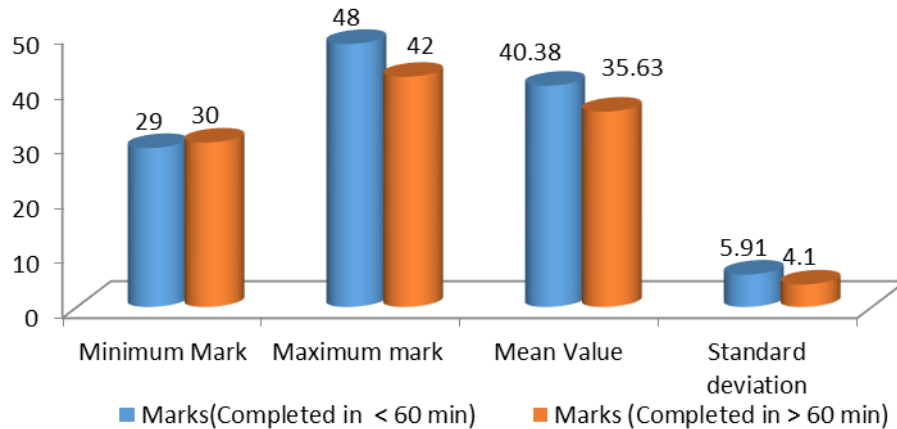
**Table B.5.5.l: The influence of time on student's marks in the open book sitting**

#### **Students completed in < 60 min:**

The minimum and maximum scores for the closed book sitting were 58% and 98% respectively, with a mean of 80.76%

#### **Students exceeded 60 min:**

The minimum and maximum scores for the closed book sitting were 60% and 84% respectively, with a mean of 71.26%



**Figure B.5.5.1: Comparison of an open book sitting marks of students Who completed in < 60 min time and > 60 min.**

#### **Significance of results & reflective critique:**

- There is a significant improvement in minimum mark and mean value Open book Examination. The increase of 13.34% in mean for open book tests shows that the average mark of most of the students is increased, which indicates that there is an improvement in student's performance in OBE sitting when considered average marks.
- However, the data reveals that there is not much improvement in the marks of weaker students in OBE sitting.
- The maximum mark in OBE and CBE sittings is almost the same and only one mark difference (48 and 47 marks respectively) for intelligent students whether it is open book or closed book examination is immaterial.
- It is also interesting to note that students spending more than 60 minutes did not show any significant improvement in their marks.
- There not many deviations in standard deviation in all the 4 cases.

#### **6. Technology Enabled Learning**

21<sup>st</sup>-century revolution in the ICT obliges the teachers and students to keep themselves abreast of the-state-of-the-art of technological development. The deployment of them in the teaching-learning process is imperative since the technology is embedded in almost all walks of our life. ICT encapsulates IT and other media such as audio, video, pictures, animation, graphics, internet, and other software packages. The use of technology to teach students has gained

attention in the recent past. The process of dissemination of information and elicit responses from students is a huge task. The following three technologies are adopted to teach students.

**MOODLES:**

- The material and syllabi of the course, assignments, readings, and online quizzes, etc are organized.
- Outcome: Material is easily accessible to all the students and it reaches all the students including absentees.

**Google Apps:**

- Sharing lecture notes and PPT through Google drive
- Outcome: It is a collaborative platform for students in which students and instructors share their material online.

**Cliquers and Smartphones:**

- Provides an easy way to serve the students during the class. It is a good method for instant polling, which can quickly assess student understandings and helps instructors to change teaching modalities.

**ICT Technology Class Room:**

- ICTs are making dynamic changes in society. They are influencing all aspects of our life. Because ICTs provide both students and teachers with more opportunities in adapting learning and teaching to individual needs, society is forcing schools aptly respond to this technical innovation
- Offer the opportunity for more student-centered teaching, provide greater opportunity for teacher-to-teacher and student-to-student communication and collaboration.
- Give greater exposure to vocational and workforce skills for students, provide opportunities for multiple technologies delivered by teachers,

**Dissemination of Content through Course Websites:**

The faculty members are self motivated to create course websites to make available of the course content like syllabus, course delivery plan, lecture notes of all units, and previous question papers. This facility helps the students to learn more in less time. As an educator, there is a need to inducting content to the learners in a short period.

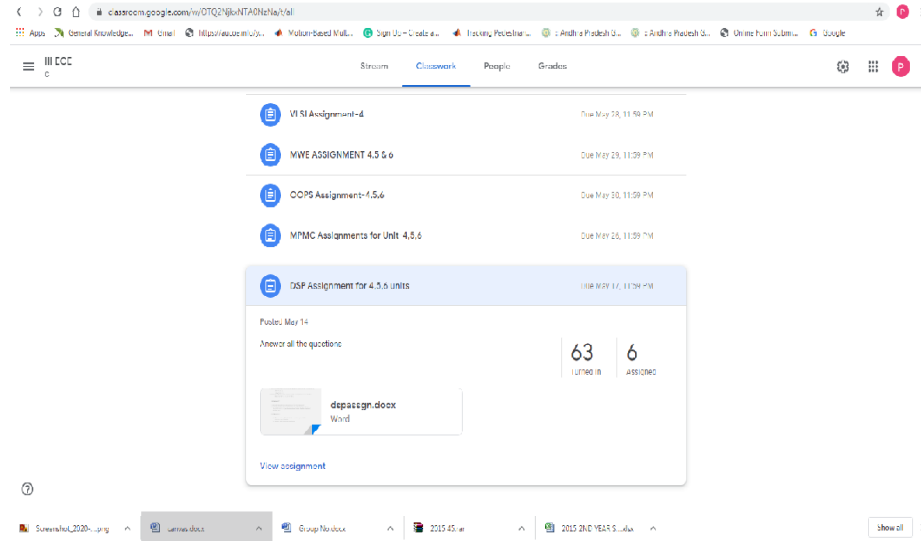
### Use of Learning Management Tools

A massive open online course (MOOC) course aims at providing high quality study materials to the student/faculty community worldwide. The MOOC courses offered by Coursera, edX, NPTEL are of high standards. The students are clustered in a group based on their MOOC course interest and the provider. Students are encouraged to complete a MOOC certification to acquire in depth knowledge. The response of students to MOOC course was minimal.

The department of ECE uses LMS tools such as Canvas, MOOCs, Moodles, Virtual Labs, etc., to make the students submit their assignments, learn online and implement the experiments to gain knowledge about the concepts learned in the class. Recently, Google Classroom, Webex, etc. have been utilized by the faculty to teach the courses

The image shows a screenshot of the Canvas LMS Dashboard. On the left is a dark sidebar with navigation icons for Account, Dashboard, Courses, Calendar, Inbox, Commons, and Help. The main content area is titled 'Dashboard' and 'Published Courses (4)'. It displays four course cards: 1. 'IIEECP Phase 2 Fall 1.3 2018' (Fall 1.3 2018) with a red header and globe icon. 2. 'Linear IC Applications' (LICA) with a red header. 3. 'Random variables and Stochastic ...' (RVSP) with a pink header and text 'Handom Variables & Stochastic Processes'. 4. 'IUCEE APSSDC Artificial Intellige...' (AI 2019) with a dark green header. Each card includes a title, a date or identifier, and three icons (megaphone, document, folder) at the bottom.

**Figure B.5.5.m: Content delivery using canvas LMS tool**



**Figure B.5.5.n: Content delivery using Google classroom**

Technology enabled learning was evaluated by asking assignments and quizzes from MOOC materials. Furthermore, extra credits were given to students who completed MOOC courses with good grades. Google classroom service offered by Google is effective in achieving technology enabled learning. Google Classroom combines the services offered by Google Drive for storage, Google Docs, Sheets, and Slides for writing, Gmail for electronic mail, and Google Calendar for maintaining deadlines. An exclusive folder is created for each class in the corresponding user's Drive, where the student can submit their work for the teacher's grading. Sharing of files, conducting assignments quizzes, grading/commenting assignments w.r.t to prompt submission, and content becomes easy with Google classroom. The Mobile version of Google classroom helps in quick access. Teachers can monitor student's progress and can assign grades and provide comments for the assignments.

**Significance of results & reflective critique:**

- Offer the opportunity for more students-centered teaching,
- Provide a greater opportunity for teacher-to-teacher and student-to-student communication and collaboration.
- Give greater exposure to vocational and workforce skills for students.
- Provide opportunities for multiple technologies delivered by teachers.
- Create greater enthusiasm for learning amongst students.
- Provide teachers with new sources of information and knowledge.
- Prepare learners for the real world.

- Provide distance learners country-wide with online educational materials.
- Provide learners with additional resources to assist resource-based learning. Furthermore, the document states ICTs to cover all the technologies used for holding and communicating information and their use specifically in education with overall policy goals of:

## II. Instructional methods assessment and their Evaluation

The Innovative Teaching Learning strategies implemented for the course “Signals & Systems” are presented here to study their impact. This course consists of six Course Outcomes (COs) as shown in Table B.5.5.m.

Course Name: <b>Signals &amp; Systems</b> ; Year of Study: <b>2014-15</b> ; Year/Sem: <b>II/I</b>	
<b>CO1</b>	Illustrate the characteristics of continuous-time signals and represent using Fourier series.
<b>CO2</b>	Analyze a signal by applying Fourier transform and interpret the sampling process to reconstruct the sampled signal.
<b>CO3</b>	Determine the response of a linear system to continuous time signal.
<b>CO4</b>	Compute the signal characteristics using correlation and convolution functions.
<b>CO5</b>	Determine the region of convergence of continuous time signals using Laplace transform.
<b>CO6</b>	Examine the region of convergence of discrete time signals using Z-transform.

**Table B.5.5.m: Course Outcomes for Signals & Systems**

For the attainment of each course outcome, one teaching learning strategy is implemented along with the regular aids as shown in below Table B.5.5.n

<b>Course outcome</b>	<b>Innovative Teaching strategy</b>
CO1	Conventional Teaching
CO2	JIGSAW (Collaborative )
CO3	STAD (Collaborative )
CO4	Think Pair Share (TPS)
CO5	Flipped Classroom
CO6	Technology Enabled Learning

**Table B.5.5.n: Innovative practices and their CO mapping**

All the students exercise Felder-Silverman questionnaire to know their learning style. The following Table B.5.5.o shows the distribution of students for each learning style. The course considered for the analysis is taught for II ECE-I Sem, A- Section of strength 66 students.



<b>Learning Styles</b>	<b>Number of students</b>	<b>Percentage of students (%)</b>
Active	15	24.61
Reflective	3	3.07
Sensing	5	6.15
Intuitive	5	6.15
Visual	20	33.8
Verbal	3	3.07
Sequential	8	12.30
Global	7	10.76

**Table B.5.5.o: Percentage of student distribution based on their learning styles**

Course end survey (student feedback) is collected based on the parameters listed in the Table B.5.5.p on a 3 point scale (Excellent-3M; Good-2M; Average-1M). The identity of the students was not revealed to the teacher so that students are independent to express their opinions on the teaching learning process.

<b>Feedback Questions</b>	<b>Average Mark</b>
Satisfaction of syllabus coverage (3)	2.50
Technical Knowledge of the Teacher (3)	2.40
Audibility and Interaction with students (3)	2.30
Achievement of COs defined (3)	2.60
Understanding of the course (On average) (3)	2.00
Effectiveness of lecture delivery – Flipped classroom/JIGSAW/STAD/TPS (3)	2.60
Efficiency of assessment methods (3)	2.40
Overall Average Mark	2.40
Percentage	80%

**Table B.5.5.p: Consolidated report of course end survey**

From the feedback scores obtained course end survey in Table B.5.5.p, it is evident that students expressed a high degree of satisfaction for the parameter “Effectiveness of lecture delivery - Flipped classroom/JIGSAW/STAD/TPS” with a score of 2.60. This parameter is directly correlated to the innovations employed in the teaching learning paradigm.

The process of Course attainment consists of direct attainment (80%) and indirect attainment (20%). Direct attainment is evaluated from mid examination marks (30 Marks). The mid examination marks comprise the descriptive exam (15 Marks), objective exam (10 Marks), and assignment (5 marks). The first mid examination covers three Cos: CO1, CO2 & CO3, and

second mid examination covers the remaining three COs: CO4, CO5 & CO6. Each CO is evaluated for 10 Marks. The analysis of teaching learning methodologies is presented in Table B.5.5.q.

Course Outcome	Innovative Practice	Learning Style	Number of students	Students with attainment above 60%	Percentage of students with attainment above 60%	Average percentage
CO1	Conventional Teaching	Active	15	9	60	65.125
		Reflective	3	2	67	
		Sensing	5	3	60	
		Intuitive	5	3	60	
		Visual	20	12	60	
		Verbal	3	2	67	
		Sequential	8	6	75	
		Global	7	5	72	
CO2	JIGSAW (Collaborative Strategy)	Active	15	12	80	84.875
		Reflective	3	3	100	
		Sensing	5	4	75	
		Intuitive	5	4	75	
		Visual	20	15	75	
		Verbal	3	3	100	
		Sequential	8	7	88	
		Global	7	6	86	
CO3	STAD (Collaborative Strategy)	Active	15	13	87	89.25
		Reflective	3	2	67	
		Sensing	5	5	100	
		Intuitive	5	5	100	
		Visual	20	17	85	
		Verbal	3	3	100	
		Sequential	8	6	75	
		Global	7	7	100	
CO4	Think Pair Share	Active	15	8	54	78.375
		Reflective	3	3	100	
		Sensing	5	4	80	
		Intuitive	5	5	100	
		Visual	20	13	65	
		Verbal	3	2	67	
		Sequential	8	6	75	
		Global	7	6	86	
CO5	Flipped Class Room	Active	15	11	74	89.625
		Reflective	3	3	100	
		Sensing	5	4	80	

		Intuitive	5	5	100	
		Visual	20	15	75	
		Verbal	3	3	100	
		Sequential	8	7	88	
		Global	7	7	100	
CO6	Technology Enabled Learning	Active	15	9	60	88.75
		Reflective	3	3	100	
		Sensing	5	5	100	
		Intuitive	5	5	100	
		Visual	20	15	75	
		Verbal	3	3	100	
		Sequential	8	6	75	
		Global	7	7	100	

**Table B.5.5.q: Analysis of course attainments for different learning strategies**

From the Table B.5.5.q, it is inferred that all students of learning styles Active/Reflective, Sensing/ Intuitive, Visual / Verbal, Sequential/ Global have shown better performance in all the innovative teaching strategies. Active learners performed well even in conventional teaching. Verbal and Sequential learner's performance is phenomenal in active learning strategies. Global learners especially preferred collaborative learning strategies compared to conventional and technology enabled learning.

From the above table, it is also clear that students performed a high degree of performance in JIGSAW, STAD, Flipped Classroom and Technology enabled learning strategies. Hence, the attainments of CO2, CO3, CO5, and CO6 are better than remaining COs.

From this analysis, the conclusion is that innovative teaching learning strategies improve the performance of students of all learning styles. The innovations by our faculty in Teaching Learning strategies are made available on the institute website for transparency, peer review, and critique. This practice will help to other scholars to reproduce and develop further.

**5.6. Faculty as participants in Faculty development/training activities/STTPs (15)**

*A Faculty scores maximum five points for participation*

- *Participation in 2 to 5 days Faculty development program: 3 Points*
- *Participation >5 days Faculty development program: 5 points*

Vignan's Institute of Engineering for Women encourages faculties to improve their technical skills on a par with the industry by sponsoring registration fees, TA and DA to participate in training programs. After the successful completion of the program, the faculty is supposed to submit a one-page report and also should share their knowledge with colleagues.

Sl.NO	NAME OF FACULTY	MAX 5 PER FACULTY		
		CAYm1 (2018-19)	CAYm2 (2017-18)	CAYm3 (2016-17)
1	Dr.R.P.Das	5	0	0
2	Dr. J.Sudhakar	5	5	5
3	Dr.P.A.Nageswara Rao	0	5	0
4	Dr.T.Pavani	0	0	0
5	Dr.B.Prasad Rao	5	0	0
6	Mrs.T.SandhyaKumari	5	5	5
7	Mr.I.Krishna Rao	0	0	0
8	Mr. Ch. Ramesh Babu	5	5	0
9	Mrs. Ch. Padma Vani	5	5	5
10	Mr.D.Madhusudhan	0	0	0
11	Mr. B. Sai Bharadwaj	5	5	5
12	Mr.V.S.V. Ranga Das	0	5	0
13	Mr. D. Tilak Raju	5	5	5
14	Ms. Ch. Anitha Bhavani	5	5	5
15	Mr. P. Sudhakar	0	0	0
16	Mr.P.Gopi Krishna	5	5	5
17	Mr.K .Sridhar	0	5	5
18	Mrs.S.Malathi	5	5	5
19	Mr.K.Rajendra Prasad	5	5	3
20	Ms.P.Kamala	5	5	3
21	Mrs. B.Manjula	0	0	3
22	Mr. V. Adinarayana	0	0	0
23	Mrs.D.VijayaLakshmi	0	5	5
24	Mr.K.Tarakeswara Rao	5	0	0
25	Mr.B. Sandeep Kumar	0	0	0
26	Mr. S.Tarun Prasad	0	0	0
27	Mrs. T.UmaMaheswari	3	0	5
28	Mr. Shaik Peer Ahmed	3	0	5
29	Mrs. Y. Alekhya	0	0	3
30	Mr.P.S.T.N Srinivas	0	0	0
31	Ms.D.Srikanya	0	3	3
32	Mr. N Venkata.Chaitanya	3	0	3

33	Mrs.K.Lakshmi	0	0	3
34	Mr.B. Sasikanth	3	5	3
35	Mr. B.SrinivasaRao	0	3	3
36	Mr.A.Suresh	0	3	3
37	Mr.K.V.RamanaRao	3	0	5
38	Mr.Subhrajit Barick	0	0	0
39	Mr.SoumyaKantapradhan	0	0	0
40	Mr.Boni.Suresh	0	0	0
41	Ms.Dhanya .M.Ravi	3	5	0
42	Ms.K.Sushma	3	0	0
43	Mr. G.Lakshmana	3	5	0
44	Mr.K.Sunil Kumar	3	5	0
45	Mrs. G.Sai Swetha	0	0	0
46	Ms. G.Arshini	0	0	0
47	Ms.N.SriKalayani	3	0	0
48	Ms.S.Jhansi Rani	5	0	0
TOTAL		105	104	95
RF= Number of Faculty required to comply with 20:1 Student-Faculty ratio as per 5.1		35	46	40
Assessment = 3 x (Sum/0.5RF) (Marks limited to 15)		18	13.56	14.25
Average assessment over three years (Marks limited to 15)		15.27		

**Table B.5.6: Faculty participation in FDPs/Training activities/STTPs etc.**

## 5.7. Research and Development (30)

### 5.7.1. Academic Research (10)

*Academic research includes research paper publications, Ph.D. guidance, and faculty receiving Ph.D. during the assessment period.*

- *Number of quality publications in refereed/SCI Journals, citations, Books/Book Chapters, etc. (6)*
- *Ph.D. guided /Ph.D. awarded during the assessment period while working in the institute (4)*

*All relevant details shall be mentioned.*

#### **A. No. of quality publications in refereed/SCI Journals, citations, Books/Book Chapters, etc. (6)**

Vignan's Institute of Engineering for Women (VIEW) College encourages Research and Development activities by providing

- Extra advanced laboratories, access to national and international journals related to ECE in digital Library
- Online access to reputed journals and magazines related to ECE.

- Institute provides internet facilities for faculty to adapt to current technologies.
- Institute also provides academic leaves to scholars to submit their work.
- Institute also provides an honorarium to faculty for publications in reputed journals.

	<b>SCI/SCIE</b>	<b>Scopus Indexed</b>	<b>UGC Indexed</b>	<b>Other Indexed</b>	<b>Book Chapters</b>	<b>Total</b>
<b>CAY (2019-20)</b>	1	27	20	1		49
<b>CAY m1 (2018-19)</b>	--	3	4	-	1	8
<b>CAY m2 (2017-18)</b>	1	14	4	1	1	21
<b>Total</b>	2	43	28	2	2	78

**Table B.5.7.1.a: List of Research Publications**

Sl.No	Authors Name	Title of the Paper	Journal Name	Month & Year of Publication	Volume/ Issue No & Pages	SCI/ESCI/S CIE/Scopus /UGC Indexed	ISSN No
1	Dr. J. Sudhakar	Low Power Aware Standard Cells using Dual Rail Multi Threshold Null Convention Logic Methodology <a href="https://doi.org/10.1016/j.micpro.2019.04.003">https://doi.org/10.1016/j.micpro.2019.04.003</a>	Microprocessors & Microsystems, Elsevier	July-19	Vol. 68	SCI	1419-331
2	Mrs. T. Sandhya Kumari	Design of 8 bit low power barrel shifter using self controllable voltage level techniques	IJAST	June-20	Vol.29, Issue 8	Scopus	2005-4238
3	Mrs. Ch. Padma Vani	Design of 8 bit low power barrel shifter using self controllable voltage level techniques	IJAST	June-20	Vol.29 , Issue 8	Scopus	2005-4238
4	Mr. D. Tilak Raju	Low Power Design of Carry Look Ahead Adder By Using Adiabatic Logic	IJAST	June-20	Vol.29 , Issue 8	Scopus	2005-4238
5	Mrs. Ch. Anitha Bhavani	Design of 8 bit low power barrel shifter using self controllable voltage level techniques	IJAST	June-20	Vol.29, Issue 8	Scopus	2005-4238
6	Mr.P. Gopi Krishna	Implementation Strategy of Mean and Fuzzy Filters in removing Gussian Noise from Images DOI:10.31838/jcr.07.14.99	Journal of Critical Review	June-20	Vol.7, Issue 19	Scopus	2394-5125
7	Mr. K. Rajendra Prasad	Implementation Strategy of Mean and Fuzzy Filters in removing Gussian Noise from Images DOI:10.31838/jcr.07.14.99	Journal of Critical Review	June-20	Vol.7, Issue 19	Scopus	2394-5125

8	Mr.B. Sasikanth	IoT Based weather monitoring system with google API services DOI: <a href="https://doi.org/10.31838/jcr.07.14.102">10.31838/jcr.07.14.102</a>	Journal of Critical Review	June-20	Vol. 7, Issue 14	Scopus	2394-5125
9	Mrs. Dhanya .M. Ravi	IoT Based weather monitoring system with google API services DOI: <a href="https://doi.org/10.31838/jcr.07.14.102">10.31838/jcr.07.14.102</a>	Journal of Critical Review	June-20	Vol. 7, Issue 14	Scopus	2394-5125
10	Mrs. B. Manjula	IoT Based weather monitoring system with google API services DOI: <a href="https://doi.org/10.31838/jcr.07.14.102">10.31838/jcr.07.14.102</a>	Journal of Critical Review	June-20	Vol. 7, Issue 14	Scopus	2394-5125
11	Mrs. S. Malathi	IoT Based weather monitoring system with google API services DOI: <a href="https://doi.org/10.31838/jcr.07.14.102">10.31838/jcr.07.14.102</a>	Journal of Critical Review	June-20	Vol. 7, Issue 14	Scopus	2394-5125
12	Mrs.Dhanya .M.Ravi	Proficient SAR Analog to Digital Converter Using CCAS DOI: <a href="https://doi.org/10.5373/JARDCS/V12I2/S20201404">10.5373/JARDCS/V12I2/S20201404</a>	JARDCS	June-20	Vol.10, Issue 6	Scopus	1943-023X
13	Mr.B. Sasikanth	Proficient SAR Analog to Digital Converter Using CCAS DOI: <a href="https://doi.org/10.5373/JARDCS/V12I2/S20201404">10.5373/JARDCS/V12I2/S20201404</a>	JARDCS	June-20	Vol.12, Issue 6	Scopus	1943-023X
14	Mrs. B.Manjula	Proficient SAR Analog to Digital Converter Using CCAS DOI: <a href="https://doi.org/10.5373/JARDCS/V12I2/S20201404">10.5373/JARDCS/V12I2/S20201404</a>	JARDCS	June-20	Vol.12, Issue 6	Scopus	1943-023X
15	Mrs.Ch.Padma Vani	Investigation on split ring resonator for GPR antenna	IJAST	May-20	Vol.29, Issue 9	Scopus	2005-4238
16	Mrs.T.Sandhya Kumari	Adaptive window based fractal dimension estimation of weight maps in contrast improved multi sensor fusion	JEST	Apr-20	Vol.15, Issue 2	Scopus	1823-4690
17	Mr.B.Sai Bharadwaj	Cardiac telemetry monitoring of sensor based pulse oximeter	TEST Engineering and Management	Apr-20	Vol.83	Scopus	14271-14277



18	Mr.B.Sai Bharadwaj	Detection of third heart sound using intrinsic time scale decomposition	IJGDC	Apr-20	Vol.13, Issue 1	WoS, ESCI	2005-4262
19	Mr. D. Tilak Raju	Design and Implementation of 3*3 Array multiplier using DPTL Logic <a href="http://dx.doi.org/10.17577/IJERTV9IS040677">http://dx.doi.org/10.17577/IJERTV9IS040677</a>	IJERT	Apr-20	Vol. 9 , Issue 4	Scopus	9743-1544
20	Mrs.NNN Spandana	Intercollegiate Broadcasting System	TEST Engineering and Management	Apr-20	Vol. 83	Scopus	0193-4120
21	Ms.Ch.Sri Satya Jyothirmai	Intercollegiate Broadcasting System	TEST Engineering and Management	Apr-20	Vol. 83	Scopus	0193-4120
22	Ms.Korumilli Devi Priya	Intercollegiate Broadcasting System	TEST Engineering and Management	Apr-20	Vol. 83	Scopus	0193-4120
23	Dr. J Sudhakar	Sense Amplifier Half Buffer based Ripple Carry Adder for IEEE 754 Standards. DOI: 10.35940/ijeat.C5312.029320	IJITEE	Feb-20	Vol. 9, Issue 3,	Scopus	2278-3075
24	Mrs.T. Sandhya Kumari	A two-stage processing approach for contrast intensified image fusion <a href="https://doi.org/10.1108/WJE-07-2019-0190">https://doi.org/10.1108/WJE-07-2019-0190</a>	World Journal of Engineering	Feb-20	Vol. 17, Issue1	Scopus	1708-5284
25	Mrs. T. Sandhya Kumari	Different LNA Topologies Designed with HEMT Technologies at Ka and Q Bands	IJITEE	Dec 2019	Vol. 9, Issue 2S3,	Scopus	2278-3075,
26	Mr.B. Sai Bharadwaj	Classification of third and fourth heart sound using ITD and SVM DOI:	IJITEE	Nov-19	Vol. 9, Issue 1	Scopus	2278-3075

		10.35940/ijitee.A4500.119119					
27	Mrs.Y Alekhya	Quasi FGMOS 6T SRAM cell design: A Strategy for low power applications DOI:10.1142/S0219581X20400049	International Journal of Nano Science	Jul-19	Vol. 19, Issue-2	ESCI& Scopus	0219-581X
28	Dr. Ch. Ramesh Babu	Analysis and Comparison of ECG Signal Quality assessments Methods <a href="https://doi.org/10.1007/978-981-13-8618-3_90">https://doi.org/10.1007/978-981-13-8618-3_90</a>	Advances in intelligent systems and computing, Springer, Singapore	Aug-19	Vol. 989	Scopus	2194-5357
29	Mrs.Dhanya .M.Ravi	Proficient Phonocardiogram Using Bluetooth Module <a href="https://doi.org/10.1011/ACJ.2020.V9I6.0068749.03211">DOI:10.1011/ACJ.2020.V9I6.0068749.03211</a>	Alochana Chakra Journal	June-20	Vol. 9, Issue 6	UGC	2231-3990
30	Mrs.T.Sandhya Kumari	Performance comparison of image enhancement techniques”,	JES	June-20	Vol. 11, Issue 6	UGC	0377-9254
31	Mrs.Ch.Anitha Bhavani	Analog Pulse Compression Technique with improved SNR and Reduced Side lobes	Dogo Rangsang Research Journal	June-20	Vol. 10, Issue 6	UGC	2347-7180
32	Mrs.Ch.Anitha Bhavani	Estimating RCS for Perfectly Conducting Sphere at different frequencies and RCS reduction <a href="https://doi.org/10.1011/ACJ.2020.V9I6.0068749.03251">DOI:10.1011/ACJ.2020.V9I6.0068749.03251</a>	Alochana Chakra Journal	June-20	Vol. 9, Issue 6	UGC	2231-3990
33	Mrs.S. Malathi	Microstrip Patch Antenna Designed Using Frequency Reconfigurability for 5G Applications	JES	June-20	Vol. 11, Issue 6	UGC	0377-9254
34	Mrs.Dhanya .M.Ravi	Power Efficient Shift Register Using Leakage Control NMOS Transistor	DogoRangsang Research Journal	June-20	Vol. 10, Issue 6	UGC	2347-7180

35	Dr. Ch. Ramesh Babu	Design and implementation of vehicle Theft and tracking system <a href="https://doi.org/10.01011.ACJ.2020.V9I6.0068749.02755">DOI:10.01011.ACJ.2020.V9I6.0068749.02755</a>	Alochana Chakra Journal	June-20	Vol. 9, Issue 6	UGC	2231-3990
36	Dr. Ch. Ramesh Babu	Vehicle accident detection system With emergency notification <a href="https://doi.org/10.01011.ACJ.2020.V9I6.0068749.02754">DOI:10.01011.ACJ.2020.V9I6.0068749.02754</a>	Alochana Chakra Journal	June-20	Vol. 9, Issue 6	UGC	2231-3990
37	Dr. Ch. Ramesh Babu	Integrated machine learning with region based active contour models in medical image segmentation	Juni Khyat Journal	June-20	Vol. 10, Issue 6,	UGC	2278-4632
38	Mrs. Ch. Padma Vani	Design of hamming code encoder and decoder using different techniques <a href="https://doi.org/10.01011.ACJ.2020.V9I6.00068749.03248">DOI:10.01011.ACJ.2020.V9I6.00068749.03248</a>	Alochana Chakra Journal	June-20	Vol. 9, Issue 6	UGC	2231-3990
39	Mr. D.A. Tatajee	Implementation of Low Power Dissipation and Area Efficient Decoder Using Mixed Circuit Logic	Dogo Rangsang Research Journal	June-20	Vol. 10, Issue 6	UGC	2347-7180
40	Mrs. T. Sandhya Kumari	Comparison of salience and statical fusion technique	Alochana Chakra Journal	June-20	Vol. 9, Issue 6	UGC	2231-3990
41	Mr. P. Gopi Krishna	Removing Gaussian noise using mean filter and fuzzy filter	IRJET	June-20	Vol. 7, Issue 6	UGC	2395-0056
42	Mr. P. Gopi Krishna	Image Denoising Using Stationary Wavelet Transform	JES	June-20	Vol. 11, Issue 6	UGC	0377-9254
43	Ms. Ch. Sri Satya Jyothirmai	Smart Stick for Blind People with Location Tracking System	JES	June-20	Vol. 11, Issue 6	UGC	0377-9254

44	Mrs. B. Manjula	An Adjustable Window Based Fir Filter And Its Application In Audio Signal De-Noising	Dogo Rangsang Research Journal	June-20	Vol 10, Issue 6	UGC	2347-7180
45	Mrs. B. Manjula	Removal Of Noise In ECG Signal Using Filtering Techniques	Dogo Rangsang Research Journal	June-20	Vol 10, Issue 6	UGC	2347-7180
46	Mr. B. Sashikanth	GSM And GPS Based Fire And Gas Leakage Alert System	Dogo Rangsang Research Journal	June-20	Vol 10, Issue 6	UGC	2347-7180
47	Mr. G. Lakshmana	Automatic LPG cylinder Leakage Detection and System Using Arduino	IRJET	Apr-20	Vol 7 Issue 4	UGC	2395-0056
48	Mr. K. Sunil Kumar	Kirsch Compass Kernel Edge Detection For Vehicle Number Plate Detection Using Image Processing	IRJET	Mar-20	Vol 7 Issue 3	UGC	2395-0056
49	Dr. Ch. Ramesh Babu	Analysis and comparison of ECG SQA methods intelligent communication control and device DOI: 10.1007/978-981-13-8618-3_90	ASIC Book	Nov-19	Vol 989	Springer	875-881

**Table B.5.7.1.b: Research Publications by faculty in CAY (2019-20)**

Sl.No	Authors Name	Title of the Paper	Journal Name	Month & Year of Publication	Volume/ issue no & pages	SCI/ESCI/S CIE/Scopus/ UGC Indexed	ISSN No
1	Mr.K.Sunil Kumar	Fuzzy Logic Based Trajectory Tracking Controller DOI: 10.35940/ijitee.F1256.0486S419	IJITEE	Apr-19	Vol-8, Issue-64	ESCI & Scopus	2278-3075

2	Dr.J.Sudhakar	Power-Delay Efficient Asynchronous Design Approach using Gaelor	IJARET	Feb-19	Vol-10, Issue-1	Scopus	0976-6480
3	Dr.J.Sudhakar	Low power aware pulse triggered flip flops using modified clock gating approaches DOI:https://doi.org/10.1108/WJE-09-2017-0309	World Journal of Engineering	Oct-18	Vol-15, Issue-6	ESCI& Scopus	1708-5284
4	Mr. N Venkata.Chaitanya	Design of Miniaturized Dual Band Microstrip Patch Antenna Array for Wireless Lan Application	IRJET	Sep-18	Vol 6, Issue 3	UGC	2395-0072
5	Mr.K.Rajendra Prasad	Cooperative Spectrum Sensing Based on Adaptive Threshold for Cognitive Radio	IRJET	Mar-19	Vol 6, Issue 3	UGC	2395-0072
6	Mr.K.Rajendra Prasad	Machine Learning based Object Identification System using Python	IRJET	Mar-19	Vol 6, Issue 3	UGC	2395-0072
7	Mr. N Venkata.Chaitanya	Inset Feed Compact Millimeter Wave Patch Antenna at 28GHz for future 5G Applications	IRJET	Mar-19	Vol 5, Issue 9	UGC	2395-0072

**Table B.5.7.1.c: Research Publications by faculty in CAYm1 (2018-19)**

Sl.No	Authors Name	Title of the Paper	Journal Name	Month & Year of Publication	Volume/issue no & pages	SCI/ESCI/S CIE/Scopus/ UGC Indexed	ISSN No
1	Mr. P. Sudhakar	Adaptive Residual Unscented Particle Filter in Target Tracking DOI:10.1109/ICMA.2007.4303882	Journal of Engineering Technology	Jul-17	Vol 6, Issue 2	SCIE	0747-9964
2	Mrs.T.Sandhya Kumari	Low Contrast Image Enhancement Using Renyi Entropy	Defence S&T Technical Bulletin	June-18	Vol 11, Issue 1	Scopus	1985-6571

3	Mrs.D.Vijayalakshmi	Low Contrast Image Enhancement Using Renyi Entropy	Defence S&T Technical Bulletin	June-18	Vol 11, Issue 1	Scopus	1985-6571
4	Mrs. Ch. Anitha Bhavani	Low Contrast Image Enhancement Using Renyi Entropy	Defence S&T Technical Bulletin	June-18	Vol 11, Issue 1	Scopus	1985-6571
5	Mr. Ch. Ramesh Babu	A Novel architecture for the realization of IoT enabled ECG Signal quality assessment using wavelet decomposition for baseline wander removal	Defence S&T Technical Bulletin	June-18	Vol 11, Issue 1	Scopus	1985-6571
6	Mr. Ch. Ramesh Babu	A Novel Architecture for the realization of an Internet of Things-Enabled ECG Signal Quality Aware using Empirical Mode Decomposition for Healthcare System DOI: <a href="https://doi.org/10.14419/ijet.v7i3.18.22975">10.14419/ijet.v7i3.18.22975</a>	International Journal OF Engineering & Technology	June-18	Vol 7	Scopus	2319-8613
7	Mr. Ch. Ramesh Babu	A Novel Architecture for IoT- Enabled ECG Signal quality Assessment Using Hilbert Variation Decomposition based on PSoC System-A Survey	Journal of Adv Research in Dynamic & Control Systems	June-18	Vol 10, Issue 4	Scopus	1943-023x
8	Dr.J.Sudhakar	Evaluation of Dual Rail Complete Detection using Asynchronous Delay Insensitive Frameworks DOI: <a href="https://doi.org/10.5013/IJSSST.a.19.03.10">10.5013/IJSSST.a.19.03.10</a>	International Journal of Simulation, Systems, Science & Technology	May-18	Vol. 19, Issue 03	Scopus	14738031
9	Ms.K.Sushma	Evaluation of Dual Rail Complete Detection using Asynchronous Delay Insensitive Frameworks DOI: <a href="https://doi.org/10.5013/IJSSST.a.19.03.10">10.5013/IJSSST.a.19.03.10</a>	International Journal of Simulation, Systems, Science & Technology	May-18	Vol. 19, Issue 03	Scopus	14738031
10	Mr.K.V.Ramana Rao	Backscattering Coefficient Measurement Land Use Land Cover Classification Using ENVI SAT ASAR data DOI: <a href="https://doi.org/10.14419/ijet.v7i2.9858">.14419/ijet.v7i2.9858</a>	International Journal of Engineering & Technology	Apr-18	Vol 7, Issue-2	Scopus	2319-8613

11	Mr.K.V.Ramana Rao	Land cover classification using Landsat-8 optical data and supervised classifiers DOI: <a href="https://doi.org/10.14419/ijet.v7i2.17.11567">10.14419/ijet.v7i2.17.11567</a>	International Journal of Engineering & Technology	Mar-18	Vol 7, Issue 2	Scopus	2319-8613
12	Mrs.T.Sandhya Kumari	MRI-PET Image fusion using tuned coefficients	International Journal of Pure and Applied Mathematics	Aug-17	Vol 114 Issue 10	Scopus	1311-8080
13	Mr. P. Sudhakar	Adaptive Residual Unscented Particle Filter with gaussian weights in Target Tracking	JARDCS	Jul-17	Vol 147, Issue 2	Scopus	1943-023X
14	Dr.J.Sudhakar	Design Analysis of SRAM Cell with Improved Noise Margin based on Aspect Ratio Adjustments DOI: <a href="https://doi.org/10.29042/2018-2645-2650">10.29042/2018-2645-2650</a>	Helix, The Scientific Explorer	Dec-17	Vol. 8 Issue 1	Web of Science	2319 – 5592
15	Mrs.Y.Alekhyia	Design Analysis of SRAM Cell with Improved Noise Margin based on Aspect Ratio Adjustments DOI: <a href="https://doi.org/10.29042/2018-2645-2650">10.29042/2018-2645-2650</a>	Helix, The Scientific Explorer	Dec-17	Vol. 8 Issue 1	Web of Science	2319 – 5592
16	Mr. Ch. Ramesh Babu	Automated ECG Signal Quality Assessment based on Wavelet Decomposition for Baseline Wander Noise Removal	IJRECE	Apr-18	VoL.6, Issue 2	Others	2393-9028
17	Mr.K.V.Ramana Rao	Land Use Land Cover Classification Using Unsupervised Classifiers And Various Polarimetric SAR Data Types	AJREAS	Mar-18	Vol 03, Issue 3	UGC	2455-6300

18	Mr.K.V.Ramana Rao	A Novel Decision Tree Algorithm for Land Cover Classification Using Hybrid Polarimetric SAR Data	IJR	Dec-17	Vol 4, Issue 17	UGC	348-6848
19	Mr. K. V. Ramana Rao	Land Cover Classification Using Sentinel-1 SAR Data	IJRASET	Dec-17	Vol 5, Issue 12	UGC	321-9653
20	Mrs. T. Sandhya Kumari	Enhanced Image Fusion using Quaternion Wavelet Transform	IJSETR	Oct-17	Vol 06, Issue 31	UGC	2319-8885

**Table B.5.7.1.d: Research Publications by faculty in CAYm2 (2017-18)**

#### Book Chapters:

S I.No	Authors Name	Title of the Topic	Name of the Book / Publisher	Month & Year of Publication	ISBN Number	Academic Year
1	Dr.J.Sudhakar	Self Timed null Convention Logic Approaches	Lambert Academic Publishing	Aug -18	978-613-9-88119-2	2018-19
2	Dr.J.Sudhakar	New Era of FPGAs: Availability of Field Programmable Gate Arrays on Cloud	Electronics and Electrical Engineering New Findings, Meta Research Press	July -17	978-93-87388-14-7	2017-18

**Table B.5.7.1.e: Details of Books/Book Chapter Publications**



- **Ph.D. Awarded:**

**B. Ph.D. guided /Ph.D. awarded during the assessment period while working in the institute (4)**

- **Ph.D. Guidance:**

Sl.No	Name Of the Faculty Guided	Name Of The Scholar	University	Specialization	Academic Year
1	Dr.K.Murali Krishna	Mr.V. Adinarayana	Andhra University	Wireless Communications	2019-20

**Table B.5.7.1.f: Details of Faculty guided Ph.D. Scholars**

- **Ph.D. Awarded:**

Sl.No	Name of Faculty	University	Month & Year of award	Branch	Specialization	Part time/ Reg	TITLE
1	Dr.K.V.RamanaRao	Andhra University	29.06.2019	ECE	Radar Image Processing	PT	Land use Land Cover Analysis of Visakhapatnam Satellite Data Imagery Using Various Classification Algorithms
2	Dr.V. Adhinarayana	Andhra University	29.04.2019	ECE	Wireless Communications	PT	Channel Estimation for MIMO OFDM and massive MIMO OFDM systems
3	Dr.Ch.Ramesh Babu	GITAM Deemed to be University	26.06.2020	ECE	IoT and Biomedical Signal Processing	PT	A Novel Architecture for the Realization of IoT-Enabled ECG signal Quality Assessment Using Hilbert Vibration Decomposition
4	Dr.P.Sudhakar	GITAM Deemed to be University	27.06.2020	ECE	Adaptive Signal Processing	PT	Adaptive Residual Gaussian weighted Unscented Practical Filter for Tracking
5	Dr.Sourav Roy	NIT Silchar	18.06.2020	ECE	Antennas	PT	Design and Performance Analysis of Metamaterial Inspired Wideband Antennas printed on Low Cost Substrate

**Table B.5.7.1.g: Details of Faculty who awarded a Ph.D. for Academic Year CAY (2019-20)**

### 5.7.2. Sponsored Research (5)

*Funded research:*

*(Provide a list with Project Title, Funding Agency, Amount and Duration)*

*Funding amount (Cumulative during CAYm1, CAYm2, and CAYm3):*

*Amount > 20 Lakh – 5 Marks*

*Amount >= 16 Lakh and <= 20 Lakh – 4 Marks*

*Amount >= 12 Lakh and < 16 Lakh – 3 Marks*

*Amount >= 8 Lakh and < 12 Lakh – 2 Marks*

*Amount >= 4 Lakh and < 8 Lakh – 1 Mark*

*Amount < 4 Lakh – 0 Mark*

By utilizing available resources in the institute like licensed software, hardware computational facilities, and journals, Dr. J Sudhakar got a fund of Rs.27,18 ,000/- from DST SERB under the early carrier research award.

Name of the Principal Investigator	Duration of Project	Name of the Research Project	Amount/Fund received	Funding agency	Year of Sanction	Sanction No.
Dr. J Sudhakar	3 Years	An Investigation on the Performance of IEEE 754 Double Precision Co-processor using Asynchronous Circuit Design Methodology	27,18,100/-	DST-SERB	2017	ECR/2017/000142

**Table B.5.7.2: Details of DST sponsored Project**

7/21/2017

SERB-Notification

SERB-Notification

Wed 7/19/2017 2:23 PM

From: SERB\_Administrator@serbonline.in

To: info@serbonline.in@imsva02.cdacnoida.in



**Science and Engineering Research Board**  
(Statutory Body Established Through an Act of Parliament : SERB Act 2008)  
Department of Science and Technology, Government of India

FILE NO. **BCR/2017/000142****SCIENCE & ENGINEERING RESEARCH BOARD(SERB)***(a statutory body of the Department of Science & Technology, government of India)*

5 & 5A, Lower Ground Floor  
Vasant Square Mall  
Plot No. A, Community Centre  
Sector-B, Pocket-5, Vasant Kunj  
New Delhi-110070

Dated: 23-Jun-2017

**ORDER**

Subject: Financial Sanction of the research project titled "An Investigation on the Performance of IEEE 754 Double Precision Co-Processor using Asynchronous Circuit Design Methodology" under the guidance of Dr. Sudhakar Jyothula, Electronics & Communication Engineering, VIGNAN's Institute of Engineering For Women , Kapujaggaraju peta, vadlapudi post backside of vsez, visakhapatnam, andhra pradesh 530046, Vishakhapatnam, Andhra pradesh-530046 - Release of 1st grant.

Sanction of Science and Engineering Research Board (SERB) is hereby accorded to the above mentioned project at a total cost of Rs. 2718100/- (Rs. Twenty Seven Lakh Eighteen Thousand One Hundred Only) with break-up of Rs. 1152500/- under Capital (Non-recurring) head and Rs.1565600/- under General (Recurring) head for a duration of 36 months. The items of expenditure for which the total allocation of Rs. 2718100/- has been approved are given below:

The following budget may be considered for VIGNAN's Institute Of Engineering For Women, Kapujaggaraju Peta, Vadlapudi Post Backside Of VSEZ, Visakhapatnam, Andhra Pradesh 530046

S. No	Head	Total (in Rs.)
<b>A</b>	<b>Non-recurring</b>	
1	Equipment -> PC -> Ultra Scale Boards -> Printer -> Mentor Graphics hep + PCB	1152500
<b>A'</b>	<b>Total (Non-Recurring)</b>	<b>1152500</b>
<b>B</b>	<b>Recurring Items</b>	
1	Recurring - A : ( Manpower, Consumables, Travel, Contingencies)	1318500
2	Recurring - B : (Overhead Charges)	247100
<b>B'</b>	<b>Total (Recurring)</b>	<b>1565600</b>
<b>C</b>	<b>Total cost of the project (A' + B')</b>	<b>2718100</b>

**Figure B.5.7.2: Sanction letter for DST Project**

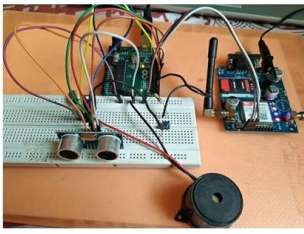
### 5.7.3. Development activities (10)

Provide details:

- *Product Development*
- *Research laboratories*
- *Instructional materials*
- *Working models/charts/monograms etc.*

#### Product Development

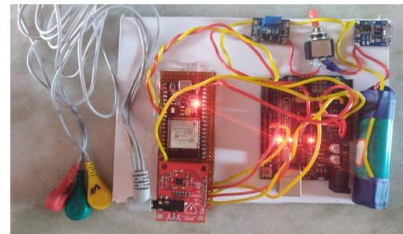
The department encourages faculty members and students to involve in product development activities to enhance their knowledge to meet with industry-related real-time applications by providing extra facilities.



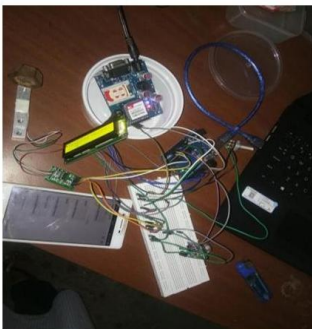
Smart Stick for Blind People with Location Tracking System



IoT Based gas leakage and fire alert system



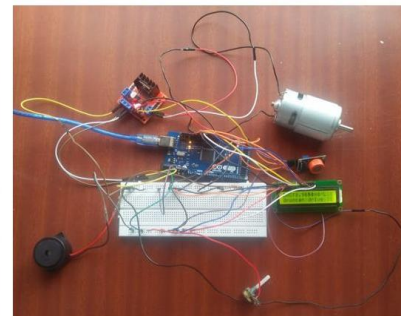
Proficient phonocardiogram using Bluetooth



Automatic LPG Cylinder Booking and Leakage



Automatic LPG Cylinder Booking and Leakage



Alcohol Detection and Automatic Engine locking using Arduino Mega 2560

**Figure B.5.7.3: Product based projects**

Sl.No	Faculty Involved	Project Title	Relevance to POs & PSOs
1	Dr. Ch. Ramesh Babu	Vehicle Detection System with Emergency Notification Abstract	PO1, PO2, PO5, PO9, PSO1
2	Mr. B. SasiKanth	Smart Intrusion Detection System for Home Security	PO1, PO2, PO5, PO9, PSO1
3	Mrs. T. Sandhya Kumari	IoT based water quality monitoring system	PO1, PO2, PO5, PO9, PSO1
4	Mr. B. Sai Bharadwaj	Cardioxy Health Tracker	PO1, PO2, PO5, PO9, PSO1
5	Ms.Ch. Jyothirmai	Smart stick for blind with GPS tracking system	PO1, PO2, PO5, PO9, PSO1
6	Mr. G. Lakshmana	Automatic LPG Cylinder Booking and Leakage Detection Using Arduino UNO	PO1, PO2, PO5, PO9, PSO1
7	Ms. Dhanya M. Ravi	Proficient Phonocardiogram Using Internet of Things	PO1, PO2, PO5, PO9, PSO1
8	Mr.P.Sudhakar	Real-Time pothole detection and notification system	PO1, PO2, PO5, PO9, PSO1
9	Mr.B.SasiKanth	IoT Based gas leakage and fire alert system	PO1, PO2, PO5, PO9, PSO1
10	Dr. Ch. Ramesh Babu	Design and Development of Vehicle theft and Tracking system	PO1, PO2, PO5, PO9, PSO1

**Table B.5.7.3.a: Details of Product-based projects for CAY (2019-20)**

Sl.No	Faculty Involved	Project Title	Relevance to POs & PSOs
1	Mr.B.Srinivas Rao	Advancement in Traffic System using ultrasonic Sensor.	PO1, PO2, PO5, PO9, PSO1
2	Mrs. T. Uma Maheshwari	Smart Intelligent ECG System based on IoT	PO1, PO2, PO5, PO9, PSO1
3	Mr. B. SasiKanth	IoT Based Weather Monitoring System using Raspberry Pi Board	PO1, PO2, PO5, PO9, PSO1
4	Mrs. S. Malathi	Vision based Vehicle Tracking and Counting using Raspberry-Pi 3	PO1, PO2, PO5, PO9, PSO1

**Table B.5.7.3.b: Details of Product-based projects for CAYm1 (2018-19)**

Sl.No	Faculty Involved	Project Title	Relevance to POs & PSOs
1	Mrs. T. Uma Maheshwari	IoT based Smart garbage Alert System Using UNO & ESP 8266	PO1, PO2, PO5, PO9, PSO1
2	Mr. Ch. Ramesh Babu	IoT Based Infant Abduction Security System	PO1, PO2, PO5, PO9, PSO1

3	Mr. Ch. Ramesh Babu	IoT Based smart IV fluid detection	PO1, PO2, PO5, PO9, PSO1
4	Mrs.S.Malathi	Mini Radio Station using Arduino	PO1, PO2, PO5, PO9, PSO1

**Table B.5.7.3.c: Details of Product-based projects for CAYm2 (2017-18)**

### Research laboratories:

The department has two research laboratories that help the faculty to implement innovative projects and publish their work in reputed journals.

#### 1. DST Sponsored Advanced VLSI Research Lab:

- Faculty and students can access the R&D lab to develop products and to do the research vastly in the fields of VLSI and Signal Processing.
- The lab is utilized by the PG students to carry out their project work under the guidance of faculty using the facilities available at R&D Lab.
- The lab is also being utilized by the Ph.D. scholars to do their research and make the work to publish in reputed journals. Few projects carried out in the lab have been published in Scopus journals and few were communicated to SCI-indexed journals.
- The equipment available in the R&D lab which was established in the department of ECE to carry out research is listed in the Table as:

Sl.No	Description of item	Quantity
1	Xilinx Zynq 706 SOC Hardware Development Platform	1
2	Xilinx Vivado system edition Licensed	25 users
3	Mentor Graphics HEP1&2 (Back End)	60users
4	MATLAB Licensed	5 users
5	Nexys 1 DDR FPGA Board	1
6	Personal Computers	10

**Table B.5.7.3.d: Equipment in Advanced VLSI Research Lab**

Sl.No	Title of the Project	Faculty Involved	Student Batch
1	Design and Implementation of Full Adder by Using Adiabatic Logic	Mr.D.Tilak Raju	Balla Navyasri DharmavarapuIndhuja Gandupalli Manisha A Kavita Rao
2	Design and simulation of mems	Mrs. Ch. Padma Vani	Baswani Pratyusha

	based piezoresistive Pressure sensor using comsol 5.3		Eppili Priyanka GandretiMaheswari Jakkireddy Jaisree
3	Design and analysis of Low power and High Speed Double - Tail Comparator	Mrs.B.V.R.Gowri	Chamanthula Sree Harshitha Dasari Yogitha Damarasing VelanginiNavya Chepala Venkata Lakshmi
4	Implementation of Vedic multiplier using reversible logic gates	Mrs. B.V.R. Gowri	KaruturiBinduvallika Metta Prathyusha MaddilaMounica Gonthini Amrutha Valli
5	Design of 4-Bit shift register using LCNT D-Flip Flop	Ms. Dhanya M. Ravi	Kowtha Renuka Vijaya Lakshmi Lakku Pushpa Ganga Bhavani Palacherla Sri Satya Abhigyna Majji Haritha
6	Design and simulation of Heterogeneous Adder using Xilinx VIV ADO	Mrs.Ch.Padma Vani	Kondepati LakshmiLikitha Pericharla SatyasaiSushma Padala Saishanmukhi Katta Deepthi
7	Low power high speed carry save adder using modified gate diffusion input technique	Mr.D.Tilak Raju	Sravani Kumari Savithini Moka Sai Lakshmi Vasamsetti Haritha Rompalli Keerthi
8	Design of Hamming code encoder and decoder using different techniques	Mrs. Ch. Padma Vani	Sanapathi Sirisha Vasupilli Manju Rongali Sai Poojitha Karusodhi Sailaja

**Table B.5.7.3.e: Projects done in Advanced VLSI Research Lab in CAY (2019-20)**

Sl.No	Title of the Project	Faculty Involved	Student Batch
1	High Speed Carry Skip adder implementation using Tri-state Buffer Circuit.	Mr. B. Sandeep Kumar	Boggu LeelaAmrutaVarshini Gundala Sravanthi Jaddu Ammadu Allavarapu GaneswariRupavathi
2	Energy aware of IEEE 754 Standard Floating point Multiplier using Delay Insensitive Design Approaches.	Ms. K. Sushma	Kovagapu Ramya Kalaga Lakshmi Prasanna Dadi LohithaLahari Chappa Padmini
3	Design of low power leading one detector for Multi Precision Division Architecture	Dr. J. Sudhakar	BandaruSaranya Basangi SharunRoja Karri NagaVaralakshmi A Bharathi Lakshmi
4	Power Optimization in 4 & 8 Bit Baugh-Wooley Multiplier with Adiabatic logic using CNT FET Technology	Mr. S.Tarun Prasad	Koribilli Sravani Barri Rama Devi Chilaka LalitaLavanya Bongu Suneetha

5	Design & Implementation of Flip-Flops using both CMOS & GDI Logic.	Mr. D. Tilak Raju	Danda Jahnvi Kanuri Mamatha Illinda VenkataSakuntala Dunga VenkataPavani
6	Power efficient 18 T SISO Register using TSPC Flip flop.	Ms. Dhanya M. Ravi	Polamarasetti Likhita MaradanaGayatri Mavuri Vasantha Pachhigolla Harshitha
7	Comparison of performance of 4-bit Multiplier using CMOS transistor and NMOS Pass Transistor.	Mrs. K. Lakshmi	Malla Bhavya Sri Sasapu Karishma Gorle Manisha Tekupudi Urmila
8	Comparative Analysis of Power Optimization in 4 & 8 bit CLA using TGL with CNTFET Technology.	Mr. S.Tarun Prasad	Palli Mownica Pothala Ammaji Petla Vineela Paila Prathyusha
9	Design & Implementation of pulse based low power 5T flash ADC in time domain	Mrs. Ch. Padma Vani	Surla Tulasi Lagudu Sharmila Mutyala SaiJyothi Ronanki Reshma Varma
10	Design of reversible logic based binary content addressable memory.	Mrs. Y. Alekhya	Munukoti Priyanka Sabbi Prasanna Lakshmi MudunuruSravani Sandhya Vemula Deva Sai Nandini
11	Power Efficient 4 x4 Vedic Multiplier using GDI Technique.	Ms. Dhanya M. Ravi	Boddepalli Pujitha Kata Poornima Eathakoti Niharika Nirujogi Priyanka
12	A Low power merged double precision multiplier architecture using Karatsuba Algorithm	Dr. J. Sudhakar	Koribilli Jhansi SravaniAtchi Chintada Jeevana Sri Nikita Sharma
13	Design of Level shifter for high speed operation using mentor graphics 13nm Technology.	Mrs. Ch. PadmaVani	Sakshi Singh Konada AnanthaNagaUdayasree Garikina Sailaja Asmanurani

**Table B.5.7.3.f: Projects done in Advanced VLSI Research Lab in CAYm1(2018-19)**

Sl.No	Title of the Project	Faculty Involved	Student Batch
1	High Speed Carry Skip Adder Implementation using Transmission Gates	Mr.B.Sandeep Kumar	Chalumuri Swathi Gurugubelli Vishnu Priya Hanumanthu Urmila Gontini kanaka mahalaxmi



2	Low Power and Area Efficient Design of Johnson Counter using proposed Flip Flops	Mr.D.Tilak Raju	Gangalla Hema Latha Lenka Divya Gudapati Saranya Chebolu Alekhya
3	Design and Implementation of Dual Mode Logic Circuit using High Performance Hybrid Full Adder	Mr.S.Tarun Prasad	Lalam Sowjanya Edayapurath Sruthi Chukkala Mounika` Adari mohan sri lakshmi
4	Design of 4 bit Flash Analog to Digital Converter	Mrs.Ch.Padma Vani	Bhoomireddy Sravani Garikina Sravani Gorle Jyothi Jampa Deepthi
5	Implementation of Reconfigurable Convolution encoder for Wireless Communication System.	Dr.J.Sudhakar	Bailapudi Uma Allu Santoshi kumari Lakshmi Dhara mahanthi Chandanadevi Budumuru Divya jyothi
6	An Implementation of Analog to Digital Converter using current conveyor switch based sample & hold Circuit	Ms.Dhanya M.Ravi	Mandali Selvi Tamatapu Seeta Sowjanya Madem Umamaheswari Vanjarapu Malati
7	Design & Implementation of digital multipliers using Dual Threshold voltage & Adiabatic logic	Mr.S.Tarun Prasad	Sneha Datti Routhu Sravani Vempada Varalakshmi Sabbavarapu Manju Priya
8	Design of BTI sensor for S-RAM Memories	Mrs.Y.Alekhya	Tata Sindhusa Salipalli SivaMahaLakshmi Neerukattu Swathi Sirapanasetty VarahaSharvani
9	High Speed Carry Skip Adder Implementation using Pass Transistor gate	Mr.B.Sandeep Kumar	Talapureddy Chinni Sanapathi Lavanya Salapu Mounika Seerapu Venkata Lakshmi
10	Design & Implementation of Digital Modulation Schemes using Xilinx System Generator	Dr.J.Sudhakar	Raparathi Sai Gouthami Priyanka Malla Asha Jyothi Srungarapu Bhavani Adari Yaga Priyanka
11	Design of low power multiplier with energy efficient Full Adder using DPTAAL	Mrs.Ch.Padma Vani	Mamidipalli Sarvani Krishna Priyanka V N Sasi MoulikaJuzhalarao Killi Usha Sree Vangapandu Sravani
12	VLSI Design of synchronous counter with JK flip flop using adiabatic Logic	Mrs.K.Lakshmi	Ellapu Revathi Bora Sravani Tammireddy KavyaSree N Madhuri

**Table B.5.7.3.g: Projects done in Advanced VLSI Research Lab in CAYm2(2017-18)**

## 2. Embedded & IoT Research Lab:

- The solutions to current real time problems are identified and implemented by the students in collaboration with faculty in Embedded and IoT Research Lab. Faculty can interact to solve technical issues related to deploying smart technologies and embedded systems.
- This smart lab supports projects and researches supervised by the faculty in smart technology, digital systems technology, embedded systems, mobile application, Internet of things(IoT) home automation, mesh networking, wearable computing, etc.,
- The equipment in the Embedded and IoT Research lab is listed below as:

Sl.No	Description of item	Quantity
1.	Tinker Cad Virtual simulator software (Open source)	---
2.	Proteus Virtual simulator software (Open Source)	----
3.	Keil C Software (Open Source)	---
4.	Eclipse Iol(Open Source)	--
5.	LPC 2148 (ARM 7)Development Board	1
6.	ARM CORTEX N3	3
7.	Innovate ARM 926 dev kit	3
8.	IoT Development Board Self Starter learning Arduino Kit	9
9.	MSP 430 EXP G2 LaunchPad	30
10.	MSP EXP430F5529 Experimenter Board	2
11.	RF Booster Pack CC110L	5
12.	STEPS Experimenter Pack for MSP430	10
13.	MSP-EXP430F5529LP	10
14.	BOOST-DAC8568	2
15.	Personal Computers	15

**Table B.5.7.3.h: Equipment list in Embedded & IoT Research Lab**

Sl.No	Title of the Project	Faculty Involved	Student Batch
1	Alcohol Detection and Automatic Engine Lock System Using ARDUINO	Mr. D. A. Tatajee	BadagalaSharmila GogadaVenkataLakshmi Batchu Prathyusha GouduManasa

2	Smart Intrusion Detection System for Home Security	Mr. B. SasiKanth	BhaddirrajuAlekhya Agraharapu Devi Gudivada Bhargavi Ganta Thanmai
3	IoT based water quality monitoring system	Mrs. T. Sandhya Kumari	Bodala Sagarika Amara kotaSwathi ChippadaDivyaLakshmi GeesalaRajeswary
4	Smart stick for blind with GPS tracking system	Ms. Jyothirmai	Kanchumarthy Roshini Krishna Tulasi Konathala Jayasri Pavitra Sahu Kona Priyanka
5	Automatic LPG Cylinder Booking and Leakage Detection Using Arduino UNO	Mr. G. Lakshmana	Netti Priyanka Palisetty Abhinandini MantrapudiNeelima Gosala Gowthamy
6	Proficient Phonocardiogram Using Internet of Things	Ms. Dhanya M. Ravi	Gorli Ramya M Mounika Vimala Dharshini Mantri Deekshitha Manjeti Devi
7	IoT Based gas leakage and fire alert system	Mr.B.SasiKanth	Varahagiri JoshanaRajeswari Kambala Santhi Priya ShaikFirdos Syed Nayeema Kousar

**Table B.5.7.3.i: Projects done in Embedded & IoT Research Lab in CAY (2019-20)**

Sl.No	Title of the Project	Faculty Involved	Student Batch
1	Smart Intelligent ECG System based on IoT	Mrs. T. Uma Maheshwari	Gollakoti Mani Deepika Chitimiseti Haritha Gogulamudi Pooja Kandipalli Sarika
2	IoT Based Weather Monitoring System using Raspberry Pi Board.	Mr. B. SasiKanth	BuskalaSravani DatlaSai Krishna Sravanthi BaswaRajani KoradaGeethaMadhuri
3	Human Face recognition and edge detection using Raspberry Pi	Mr. B. SasiKanth	MaradanaManasa RambaVasaviDevi KallaPoornima PagadalaChittilakshmi
4	Women's safety using IoT	Mr. G. Lakshmana	Malla Charishma Maddala Manjusha Vadamodula Sahithya Thagarampudi Sri Varshini

**Table B.5.7.3.j: Projects done in Embedded & IoT Research Lab in CAYm1 (2018-19)**

Sl.No	Title of the Project	Faculty Involved	Student Batch
1	IoT based Smart garbage Alert System Using UNO & ESP 8266	Mrs.T.Uma Maheswari	Ayyapureddi Priyanka Buddha Mohana Lakshmi Koripella Saipriya Buddha gnaneswari Santhosh Kusuma
2	IoT Based Smart Parking Security System	Mr.B.SashiKanth	Boddetitanujalakshmi Kandregul Annapurna Jami Gayathri Karedla Venkata Sravani
3	IoT Based Infant Abduction Security System	Mr.Ch.Ramesh Babu	Madaka Sirisha Kandregula Umadevi Gandi Leelavathi Bonagiri Vijayalakshmi
4	IoT Based smart IV fluid detection	Mr.Ch.Ramesh Babu	Reddy Mounica Siddapu Adilakshmi Korupolu Renuka G Vijayalakshmi Babitha
5	Mini Radio Station using Arduino	Mrs.S.Malathi	Londadi Anusha AdariManasa Yelamanchili Sahithi Nadigatla Sravani
6	Event-Triggering Method for IoT health care applications	Mr.D.Tilak Raju	Marla Monika Reddy Pithani UdayaLakshmi Kothurthi Manasa

**Table B.5.7.3.k: Projects done in Embedded & IoT Research Lab in CAYm2 (2017-18)**

#### **Instructional Materials:**

##### **❖ Laboratory manuals:**

Lab Manuals are prepared for every regulation and the respective handouts will be given at the beginning of each semester

##### **❖ Course file:**

Every faculty will prepare lecture notes for all the courses available on the website and students can access lecture notes through the internet by providing login details.

##### **❖ PowerPoint Presentation:**

All the faculty provide required instructions, materials, and content through PPT presentations for all courses and lab sessions.

##### **❖ Working models/charts/monograms:**

Department of ECE encourages students to do projects and students will be sent to various national level competitions few working models also available at the department.

### **5.8. Faculty Performance Appraisal and Development System (FPADS) (30)**

*Faculty members of Higher Educational Institutions today have to perform a variety of tasks pertaining to diverse roles. In addition to instruction, Faculty members need to innovate and conduct research for their self-renewal, keep abreast with changes in technology, and develop expertise for effective implementation of curricula. They are also expected to provide services to the industry and community for understanding and contributing to the solution of real life problems in the industry. Another role relates to the shouldering of administrative responsibilities and cooperation with other Faculty, Heads-of-Departments, and the Head of Institute. An effective performance appraisal system for Faculty is vital for optimizing the contribution of individual faculty to institutional performance.*

*The assessment is based on:*

- *A well-defined system for faculty appraisal for all the assessment years (10)*
- *Its implementation and effectiveness (20)*

#### **A. A well-defined system for faculty appraisal for all the assessment years (10)**

To recognize and reward the performance of staff, it is the philosophy of the Institution to award annual increments to encourage the quality of teaching, research and to optimize the contribution of individual faculty to institutional performance through an effective performance appraisal system.

The faculty members shall submit the open and transparent performance report in the prescribed format, containing the teacher's academic, research, supplementary activities, and achievements during the academic year. The Head of the Department shall offer his remarks and observation on the form. The Academic Planning and Audit Committee (APAC) shall review the report on Performance Appraisal staff to the Management through the Principal. The assessment shall be used for the following purposes.

1. Award of annual increments.
2. Award of special increments/allowance.
3. Award of career advancement and promotion.
4. Monitoring and recording of the regular growth of each faculty member.

#### **Parameters to assess Performance Appraisal**

The performance of staff was assessed through **3 criteria** for annual increment with a total score of 10.

Criteria No.	Element of Criteria	Max. Score	% of Weightage
1	Academic Results & Feedback	4 Marks	40
2	Research & Development	3 Marks	30
3	Supplementary Activities	3 Marks	30
<b>Total</b>		<b>10 Marks</b>	<b>100</b>

**Table B.5.8.a: Elements in Appraisal Form**

**Criterion -1** is mainly focused on the academic performance of staff which covers the teaching related activities, domain knowledge, semester results, and student's feedback in an academic year.

**Criterion -2** is mainly considered the faculty output in Research and Development activities in an academic year. Based on the cadre of faculty, the expected output of R&D shall be categorized.

R & D activities include Research papers published in scholarly journals, Book publications, research projects, consultancy projects, organizing and attending conferences/seminars, workshops, and FDPs.

**Criterion -3** covers curricular and extracurricular activities, counseling/mentoring of students, roles and contributions in Institutional Governance and administration, awards and achievements, and Professional Development Activities.

**Grant/Award of Annual Increments:**

Increments shall be sanctioned by the Management as recommended by the Principal. The grant of the number of increments is based on the score secured by the faculty out of the total score of 10.

Secured Score	Grade	No. of Increments
$\geq 7.5$	A+	3 (Three)
$< 7.5$ & $\geq 6.5$	A	2 (Two)
$< 6.5$ & $\geq 5$	B	1 (One)
$< 5$	C	No Increment

**Table B.5.8.b: Details of Grades and Increments**

a) If a teaching staff falls in 'B' grade in 2 continuous years, the Management/Principal has the right to terminate from services or one-month notice to staff for termination due to lack of improvement in the performance.

b) If a teaching staff falls in 'C' grade, the Management/Principal has the right to terminate the faculty immediately from service or one-month notice to staff for termination. In special cases, the Principal shall allow improving the performance within one academic year.

**Letter of Annual Increment:**

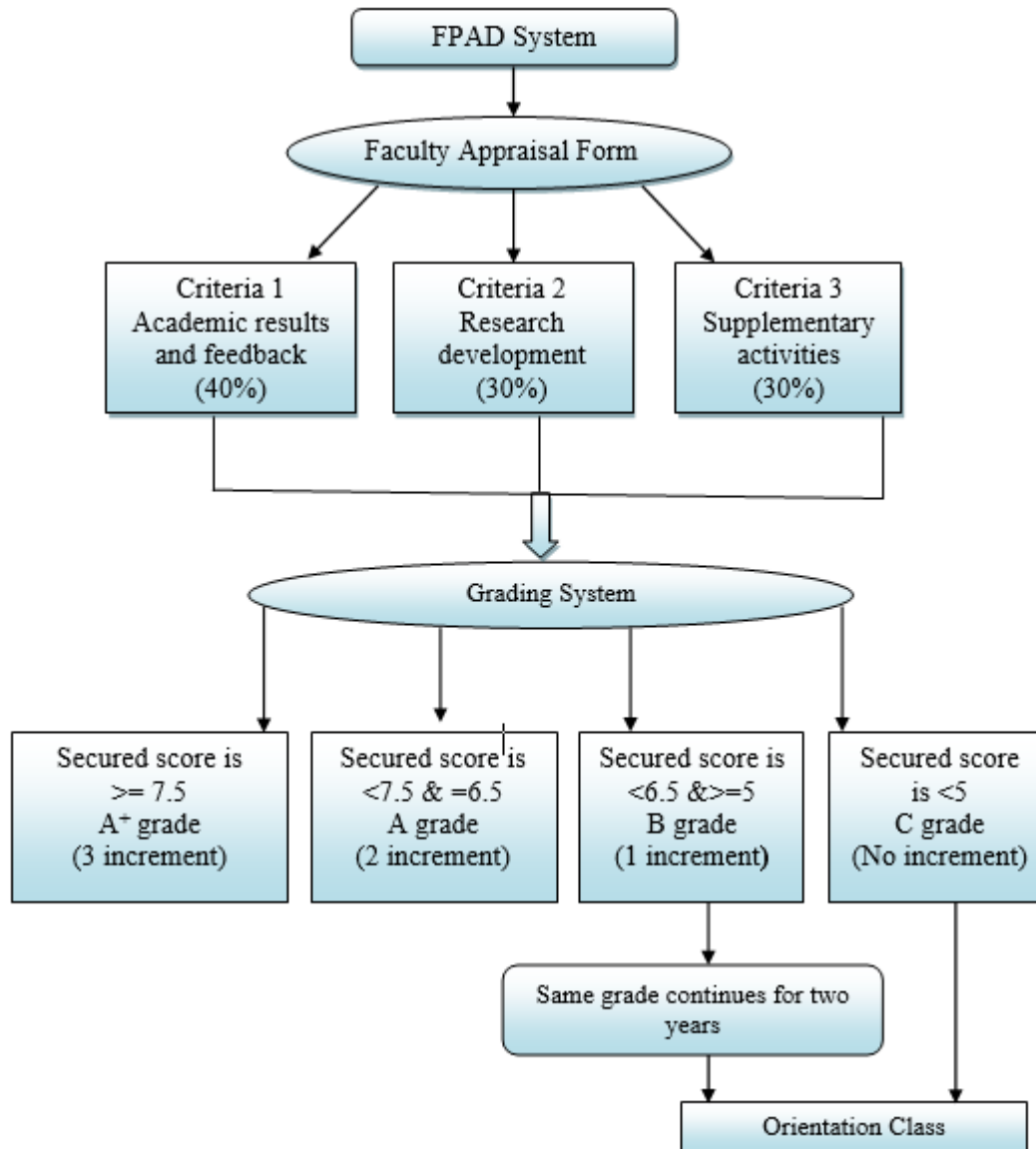
All employees will be informed in writing about their annual increments after the Performance Appraisal.

To recognize and reward the performance of employees, it is the organization's philosophy that the principal component to enhance compensation shall be through annual increment based on performance evaluations.

**B. Its implementation and effectiveness (20)**

**Application of the Policy**

- All regular employees are eligible for yearly increment based on the results of their Performance Appraisal conducted annually.



**Figure B.5.8.a: Faculty Performance Appraisal Development System**





## VIGNAN'S INSTITUTE OF ENGINEERING FOR WOMEN

(Approved by AICTE, New Delhi & Affiliated to JNTU Kakinada)

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### FACULTY PERFORMANCE EVALUATION FORM

(FOR THE PERIOD AUG- 2018 TO JULY- 2019)

#### Part A: General Information

1. Name (In Block Letter) :
2. Employee ID :
3. Designation & Department :
4. Date of Joining :
5. Month of Increment Due :

#### Part B : Academic Performance Indicators

##### Category I

##### Instructional/Academic Element

##### (a) Teaching Engagement - Semester-I

Course (UG/PG)	Year & Branch	Sec	Class Strength	Subject	No of Classes Taken	No of Units Covered	% of Syllabus Covered	Pass %	Feed back

##### Teaching Engagement - Semester-II

Course (UG/PG)	Year & Branch	Sec	Class Strength	Subject	No of Classes Taken	No of Units Covered	% of Syllabus Covered	Pass %	Feed back

##### (b) Laboratory:

Semester	Year & Branch	Sec	Strength	Name of Laboratory	No of Sessions Taken	No of Exp. Prescribed as per syllabus	No of Exp. Completed

##### (c) No. of Project Supervised:

##### Category II

##### Research, Publication & Professional Development Activities (Proofs to be attached)

##### (a) Publications/Books/Patents/Copy Rights (From 08/2018 to 07/2019)

No. of Publications in SCI Journals- Paid : Unpaid:

No. of Publications in Scopus Journals- Paid : Unpaid:

No. of publications in Conference Proceedings- Int. National: National:

No. of Books Authored/Contributed: No. of Patents/Copy Rights:

##### (b) No. of Conferences/Workshops/FDPs attended: (From 08/2018 to 07/2019)

International Conferences	National Conferences	International Workshops	National Workshops	FDPs

(c) No. of Conferences/Workshops/FDPs Organized: (From 08/2018 to 07/2019)

International Conferences	National Conferences	International Workshops	National Workshops	FDPs

d) Research Funding Projects:

Year	Title of the Project	Type of Project	Funded Agency	Project Value

**Category III**

**Supplementary Activities (Attached Additional Sheet, if required)**

a) Awards and acknowledging certificates (kindly attach supporting documents):

(NET/SLET/M.Phil/Ph.D/IUCET/NPTEL/Other \_\_\_\_\_)

b) Counseling of Students:

(i) Total no. of Regular students Allotted : (ii) Total no. of students cleared all the subjects:

(ii) No. of Backlog Students Allotted : (iv) No. of Students cleared Backlogs:

c) Roles and contributions in Institutional Governance and administration (Tick whichever is applicable)

Head of the Department/Department T&P Coordinator/ NSS Coordinator/Women Grievance Cell Coordinator/ Assistant Head of the Department/ Website Coordinator/ Institutional Criteria Coordinator of NBA & NAAC / College Level Admissions/Time-Table Coordinator/IQAC Coordinator/ Alumni Association Coordinator/ CoE/Exam Cell Staff/Any other Institutional Level Coordinator role assigned by Principal (Please specify.....)

(d) Regularity assessment of Faculty/Leave Details (From 08/2018 to 07/2019)

CL	ML	CCL	EL	Other Leaves (Academic/Mat. Leave/Paternity Leave)	Loss of Pay due to excess Leaves	Loss of Pay due to biometric deviations

e) Other activities Inside/Outside the campus towards development of self & students:

f) Contribution to Department:

f) Contribution to Institution:

h) Any other Information

Signature of Faculty

Remarks of HoD

Signature of Head of the Department

Remarks/Recommendations of Principal

Signature of Principal |

**Figure B.5.8.b: Sample Faculty Performance Evaluation Form**

Assessment Year	Total No. of Faculty	Faculty secured A <sup>+</sup> grade	Faculty secured A grade	Faculty secured B grade	Faculty secured C grade
CAYm2 (2017-18)	46	13	21	8	4
CAYm1 (2018-19)	39	15	17	5	2
CAY (2019-20)	36	16	18	2	0

**Table B.5.8.c: Faculty assessment in CAY, CAYm1, and CAYm2**

The faculty who secured 3 increments will consider under A<sup>+</sup> grade. Similarly, the faculty who secured 2, 1, and 0 increments will come under A, B, C grades respectively. Based on the TEACHING STAFF APPRAISAL POLICY the table lists the data of increments secured by ECE faculty during the last 3 years. During the academic year 2017-18 out of 46 faculty members 13 members secured A<sup>+</sup> grade 21, 8 and 4 members secured A, B, C respectively. For the academic year 2018-19, the department is having 39 faculty members in which 15 secured A<sup>+</sup> grade 17 secured A 5 secured B and 2 secured C grades. During 2019-20 out of 36 faculty members 16 secured A<sup>+</sup> grade 18, 2 secured A and B respectively. None of the faculty members secured C grade during the year.

**List of faculty received Annual Increments for CAYm2 (2017-18):**

Sl. No	Name of Faculty Member	Designation	Grade	No. of Increments	Increment (Rs.)
1	Dr. R.P.Das	Professor	A	2	4,824
2	Dr.P.A.Nageswara Rao	Assoc. Prof.	B	1	2,266
3	Dr.T.Pavani	Assoc. Prof.	A	2	4,532
4	Dr.B.Prasad Rao	Assoc. Prof.	B	1	2,266
5	Mrs.T.Sandhya Kumari	Asst. Prof.	A+	3	2,625
6	Mr. Ch. Ramesh Babu	Asst. Prof.	A+	3	2,625
7	Mrs. Ch. Padma Vani	Asst. Prof.	A+	3	2,625
8	Mr. D.Madhusudhan	Asst. Prof.	A	2	1,750
9	Mr. B. Sai Bharadwaj	Asst. Prof.	A+	3	2,625
10	Mr.V.S.V.Ranga Das	Asst. Prof.	A	2	1,750
11	Mr. D. Tilak Raju	Asst. Prof.	A+	3	2,625
12	Mrs. Ch. Anitha Bhavani	Asst. Prof.	A+	3	2,625
13	Mr. P. Sudhakar	Asst. Prof.	A+	3	2,625

14	Mr.P.Gopi Krishna	Asst. Prof.	A+	3	2,625
15	Mrs.S.Ma lathi	Asst. Prof.	A+	3	2,625
16	Mr.K.Sridhar	Asst. Prof.	A+	3	2,625
17	Mr.K. Rajendra Prasad	Asst. Prof.	A+	3	2,625
18	Mrs.P.Kamala	Asst. Prof.	A	2	1,750
19	Mrs. B. Manjula	Asst. Prof.	A	2	1,750
20	Mr. V. Adinarayana	Asst. Prof.	B	1	875
21	MrB.Sandeep Kumar	Asst. Prof.	B	1	875
22	Mr. S.Tarun Prasad	Asst. Prof.	A+	3	2,625
23	Mrs. T.Uma Maheswari	Asst. Prof.	A	2	1,750
24	Mrs.Y.Alekhyia	Asst. Prof.	A	2	1,750
25	Mr. N Venkata.Chaitanya	Asst. Prof.	A+	3	2,625
26	Mrs. K. Lakshmi	Asst. Prof.	A	2	1,750
27	Mr.B. Sasikanth	Asst. Prof.	A	2	1,750
28	Mr. B.SrinivasaRao	Asst. Prof.	A	2	1,750
29	Mr.A.Suresh	Asst. Prof.	A	2	1,750
30	Mr.K.V.Ramana Rao	Asst. Prof.	A	2	1,750
31	Ms.Dhanya .M.Ravi	Asst. Prof.	A	2	1,750
32	Ms.K.Sushma	Asst. Prof.	C	0	0
33	Mr. G.Lakshmana	Asst. Prof.	A	2	1,750
34	Mr.K.Sunil Kumar	Asst. Prof.	A	2	1,750
35	Mrs. G.Sai Swetha	Asst. Prof.	C	0	0
36	Ms. G.Arshini	Asst. Prof.	B	1	875

Table B.5.8.d: Annual Increments for CAYm2 (2017-18)

**List of faculty received Annual Increments for CAYm1 (2018-19):**

Sl. No	Name of Faculty Member	Designation	Grade	No. of Increments	Increment (Rs.)
1	Dr.B.Prasad Rao	Assoc. Prof.	B	1	2266
2	Mrs.T.Sandhya Kumari	Asst. Prof.	A	2	1,750
3	Mr. Ch. Ramesh Babu	Asst. Prof.	A+	3	2,625
4	Mrs. Ch. Padma Vani	Asst. Prof.	A+	3	2,625
5	Mr.D.Madhusudhan	Asst. Prof.	B	1	875
6	Mr. B. Sai Bharadwaj	Asst. Prof.	A	2	1,750
7	Mr.V.S.V.Ranga Das	Asst. Prof.	A+	3	1,750

8	Mr. D. Tilak Raju	Asst. Prof.	A+	3	2,625
9	Mrs. Ch. Anitha Bhavani	Asst. Prof.	A+	3	2,625
10	Mr. P. Sudhakar	Asst. Prof.	A	2	1,750
11	Mr.P. Gopi Krishna	Asst. Prof.	A+	3	2,625
12	Mrs.S.Ma lathi	Asst. Prof.	A+	3	2,625
13	Mr. Rajendra Prasad	Asst. Prof.	A+	3	2,625
14	Mrs. B. Manjula	Asst. Prof.	A+	3	2,625
15	Mr.V. Adinarayana	Asst. Prof.	A	2	1,750
16	Mr. S.Tarun Prasad	Asst. Prof.	A+	3	2,625
17	Mrs.Y.Alekhyia	Asst. Prof.	A	2	1,750
18	Mr. N Venkata.Chaitanya	Asst. Prof.	A+	3	2,625
19	Mr.B.Sasikanth	Asst. Prof.	A+	3	2,625
20	Mr. B.Srinivasa Rao	Asst. Prof.	A	2	1,750
21	Mr.K.V.Ramana Rao	Asst. Prof.	A+	3	2,625
22	Ms. Dhanya M.Ravi	Asst. Prof.	A	2	1,750
23	Ms.K.Sushma	Asst. Prof.	B	1	875
24	Mr. G. Lakshmana	Asst. Prof.	A	2	1,750
25	Mr.K.Sunil Kumar	Asst. Prof.	A	2	1,750
26	Mrs. G.Sai Swetha	Asst. Prof.	B	1	875
27	Ms. G.Arshini	Asst. Prof.	B	1	875
28	Mrs.N.Sri Kalyani	Asst. Prof.	B	1	875
29	Ms.S.Jhansi Rani	Asst. Prof.	C	0	0

Table B.5.8.e: Annual Increments for CAYm1 (2018-19)

**List of faculty received Annual Increments for CAY (2019-20):**

Sl. No	Name of Faculty Member	Designation	Grade	No. of Increments	Increment (Rs.)
1	Dr. K.Murali Krishna	Professor	A	2	4,824
2	Dr. B.Prasad Rao	Professor	B	1	2,412
3	Dr.V.Adinarayana	Assoc. Prof.	A	2	4,532
4	Dr.K.V.Ramana Rao	Assoc. Prof.	A	2	4,532
5	Dr. Ch. Ramesh Babu	Assoc. Prof.	A+	3	2,625
6	Dr. P. Sudhakar	Assoc. Prof.	A+	3	2,625
7	Mrs.T.Sandhya Kumari	Asst. Prof.	A+	3	2,625
7	Mrs. Ch. Padma Vani	Asst. Prof.	A+	3	2,625
9	Mr.D.Madhusudhan	Asst. Prof.	A+	3	2,625

10	Mr. B. Sai Bharadwaj	Asst. Prof.	A+	3	2,625
11	Mr.V.S.V.Ranga Das	Asst. Prof.	A+	3	2,625
12	Mr. D. Tilak Raju	Asst. Prof.	A+	3	2,625
13	Mrs. Ch. Anitha Bhavani	Asst. Prof.	A+	3	2,625
14	Mr.P.Gopi Krishna	Asst. Prof.	A+	3	2,625
15	Mrs.S.Malathi	Asst. Prof.	A	2	1,750
16	Mr.K.Rajendra Prasad	Asst. Prof.	A+	3	2,625
17	Mrs. B.Manjula	Asst. Prof.	A+	3	2,625
18	Mrs.Y.Alekhyia	Asst. Prof.	A+	3	2,625
19	Mr. N Venkata.Chaitanya	Asst. Prof.	A+	3	2,625
20	Mr.B. Sasikanth	Asst. Prof.	A+	3	2,625
21	Ms.Dhanya .M.Ravi	Asst. Prof.	A+	3	2,625
22	Ms.K.Sushma	Asst. Prof.	A	2	1,750
23	Mr. G. Lakshmana	Asst. Prof.	A+	3	2,625
24	Mr.K.Sunil Kumar	Asst. Prof.	A+	3	2,625
25	Ms. G.Arshini	Asst. Prof.	A	2	1,750
26	Mrs.N.Sri Kalyani	Asst. Prof.	A	2	1,750
27	Ms.Jhansi Rani	Asst. Prof.	A	2	1,750
28	Ms.Korumilli Devipriya	Asst. Prof.	A	2	1,750
29	Mr.Appala Raju	Asst. Prof.	B	1	875
30	Ms.V.Bhuvaneswari	Asst. Prof.	B	1	875
31	Mr.Sourav Roy	Asst. Prof.	B	1	875
32	Ms.G.Vijaya Teja Swaroopa	Asst. Prof.	B	1	875
33	Mrs.M.Dhana Lakshmi Bhavani	Asst. Prof.	B	1	875

**Table B.5.8.f: Annual Increments for CAY (2019-20)**



## VIGNAN'S INSTITUTE OF ENGINEERING FOR WOMEN

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### FACULTY PERFORMANCE EVALUATION FORM

(FOR THE PERIOD AUG- 2018 TO JULY- 2019)

#### Part A: General Information

1. Name (In Block Letter) : TEKU SANDHYA KUMARI
2. Employee ID : 10013
3. Designation & Department : Assoc. Prof ; E.C.E. Dept.
4. Date of Joining : 18-09-2008
5. Month of Increment Due : AUG 2018

#### Part B : Academic Performance Indicators

##### Category I

##### Instructional/Academic Element

##### (a) Teaching Engagement - Semester-I

Course (UG/PG)	Year & Branch	Sec	Class Strength	Subject	No of Classes Taken	No of Units Covered	% of Syllabus Covered	Pass %	Feed back
UG	II ECE	A	65	LICA	83	5.5	92%	97%	9.74
UG	II ECE	C	65	LICA	88	5.5	92%	98%	9.81

##### Teaching Engagement - Semester-II

Course (UG/PG)	Year & Branch	Sec	Class Strength	Subject	No of Classes Taken	No of Units Covered	% of Syllabus Covered	Pass %	Feed back
UG	II ECE	C	69	AC	87	6	100%	94.2%	9.33

##### (b) Laboratory:

Semester	Year & Branch	Sec	Strength	Name of Laboratory	No of Sessions Taken	No of Exp. Prescribed as per syllabus	No of Exp. Completed
II	II ECE	C	69	AC LAB	39	12	12

(c) No. of Project Supervised: 02

##### Category II

#### Research, Publication & Professional Development Activities (Proofs to be attached)

##### (a) Publications/Books/Patents/Copy Rights (From 08/2018 to 07/2019)

No. of Publications in SCI Journals- Paid : 01 Unpaid: 01  
 No. of Publications in Scopus Journals- Paid : - Unpaid: 01  
 No. of publications in Conference Proceedings- Int. National: 01 National: -  
 No. of Books Authored/Contributed: No. of Patents/Copy Rights: -

##### (b) No. of Conferences/Workshops/FDPs attended: (From 08/2018 to 07/2019)

International Conferences	National Conferences	International Workshops	National Workshops	FDPs
-	-	-	01	02

(c) No. of Conferences/Workshops/FDPs Organized: (From 08/2018 to 07/2019)

International Conferences	National Conferences	International Workshops	National Workshops	FDPs
-	-	-	-	-

d) Research Funding Projects:

Year	Title of the Project	Type of Project	Funded Agency	Project Value
-	-	-	-	-

**Category III**

**Supplementary Activities** (Attached Additional Sheet, if required)

a) Awards and acknowledging certificates (kindly attach supporting documents):  
 (NET/SLET/M.Phil/Ph.D/IUCEE/NPTEL/Other IUCEE-1, NPTEL-2)

b) Counseling of Students:  
 (i) Total no. of Regular students Allotted : 18      (ii) Total no. of students cleared all the subjects: 18  
 (ii) No. of Backlog Students Allotted : 02      (iv) No. of Students cleared Backlogs: 02

c) Roles and contributions in Institutional Governance and administration (Tick whichever is applicable)

Head of the Department/ Department T&P Coordinator/ NSS Coordinator/Women Grievance Cell Coordinator/  
 Assistant Head of the Department/ Website Coordinator/ Institutional Criteria Coordinator of NBA & NAAC /  
 College Level Admissions/Time-Table Coordinator/IQAC Coordinator/ Alumni Association Coordinator/  
 CoE/Exam Cell Staff/Any other Institutional Level Coordinator role assigned by Principal (Please specify.....) n. Tech Coordinator

(d) Regularity assessment of Faculty/Leave Details (From 08/2018 to 07/2019)

CL	ML	CCL	EL	Other Leaves (Academic/Mat. Leave/Paternity Leave)	Loss of Pay due to excess Leaves	Loss of Pay due to biometric deviations
<u>05</u>	<u>07</u>	-	-	<u>04 (A.L.)</u>	-	-

e) Other activities Inside/Outside the campus towards development of self & students:

f) Contribution to Department: 1) PROJECT COORDINATOR  
2) DEPARTMENT NBA COORDINATOR FOR CRITERIA-2

f) Contribution to Institution:

h) Any other Information

Remarks of HoD Recommended

Remarks/Recommendations of Principal Recommended for increment


T. Sandeep K.  
Signature of Faculty

[Signature]  
Signature of Head of the Department

[Signature]  
Signature of Principal

Figure B.5.8.c: Sample filled Faculty Appraisal Form for CAYm1(2018-19)





**VIGNAN'S INSTITUTE OF ENGINEERING FOR WOMEN**  
 (Approved by AICTE & Affiliated to JNT University, Kakinada) Estd. 2008  
 ISO 9001:2015, ISO 14001:2015, OHSAS 18001:2007 Certified Institution  
 Kapujaggarajupeta, VSEZ (Post), Visakhapatnam-530 049, Andhra Pradesh, India  
 Phone : 9133300357, 8886066339 :: Fax : 0891-2010485  
 Email : viewvizag@yahoo.com, viewprincipal@gmail.com website : www.vignanview.org

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VIEW/PO/SA/ECE/2019-20/23/22 Date: 28/08/2019

**Increment Letter**

To

Mrs.T.Sandhya Kumari,  
 Emp.No.10013  
 Department of ECE


Dear T.Sandhya Kumari,

I take this opportunity to congratulate to you and express our appreciation for your valuable contribution in achieving Institution objectives. Consequent to the review of your performance during the period of 01/08/2018 to 31/07/2019, the Management is pleased to inform you that your salary has been revised w.e.f 1<sup>st</sup> August 2019. You will be paid a Gross Salary of Rs.48,426/- per month in AICTE 6<sup>th</sup> Pay scale of Rs.15,600-39,100. The breakup of your salary is given below:

Basic Pay	25,896
D.A	12,645
H.R.A	3,884
Academic Grade Pay	6,000
Special Allowance	0
<b>Gross Salary Per Month</b>	<b>48426</b>

I am confident that you will continue the good work in the same spirit of commitment and sincerity and grow with our Institution. Wish you all the very best for a rewarding career with the Institution.

On behalf of the Chairman of Vignan Group,



*28/08/2019*  
 Dr.J.Sudhakar  
 Principal-VIEW

**PRINCIPAL**  
 Vignan's Institute of  
 Engineering for Women  
 K.J.Peta, VSEZ (P.O.),  
 Visakhapatnam-49.

**Figure B.5.8.d: Increment letter for CAYm1(2018-19)**



## VIGNAN'S INSTITUTE OF ENGINEERING FOR WOMEN

Approved by AICTE, New Delhi & Affiliated to JNTU Kakinada)

Kapu Jaggarajupeta, VSEZ (Post), Visakhapatnam - 530 049

Ph: 9133300357, 8886066339 :: Fax: 0891-2010487 :: E-Mail: viewvizag2008@gmail.com

### FACULTY PERFORMANCE EVALUATION FORM (FOR THE PERIOD AUG- 2017 TO JULY- 2018)

#### Part A: General Information

1. Name (In Block Letter) : **SAT BHARADWAJ B**
2. Employee ID : **10021**
3. Designation & Department : **Asst. Professor, ECE**
4. Date of Joining : **13/06/2011**
5. Month of Increment Due : **August**

#### Part B : Academic Performance Indicators

##### Category I

##### Instructional/Academic Element

##### (a) Teaching Engagement - Semester-I

Course (UG/PG)	Year & Branch	Sec	Class Strength	Subject	No of Classes Taken	No of Units Covered	% of Syllabus Covered	Pass %	Feed back
UG	III ECE	C	60	STLD	82	5.6	93.3	84	8.14

##### Teaching Engagement - Semester-II

Course (UG/PG)	Year & Branch	Sec	Class Strength	Subject	No of Classes Taken	No of Units Covered	% of Syllabus Covered	Pass %	Feed back
UG	IV ECE	A	63	CMC	78	5.4	90	100	8.56
UG	IV ECE	C	62	CMC	76	5.4	90	100	7.15

##### (b) Laboratory:

Semester	Year & Branch	Sec	Strength	Name of Laboratory	No of Sessions Taken	No of Exp. Prescribed as per syllabus	No of Exp. Completed
I Sem	III ECE	A & C	125	MWF Lab	39	10	10
II Sem	IV ECE	B & C	124	AC Lab	39	10	10

##### (c) No. of Project Supervised:

##### Category II

#### Research, Publication & Professional Development Activities (Proofs to be attached)

##### (a) Publications/Books/Patents/Copy Rights (From 08/2017 to 07/2018)

No. of Publications in SCI Journals- Paid : - Unpaid: -

No. of Publications in Scopus Journals- Paid : 1 Unpaid: -

No. of publications in Conference Proceedings- Int. National: - National: -

No. of Books Authored/Contributed: No. of Patents/Copy Rights: -

##### (b) No. of Conferences/Workshops/FDPs attended:(From 08/2017 to 07/2018)

International Conferences	National Conferences	International Workshops	National Workshops	FDPs
-	-	-	-	01

(c) No. of Conferences/Workshops/FDPs Organized: (From 08/2017 to 07/2018)

International Conferences	National Conferences	International Workshops	National Workshops	FDPs
-	-	-	-	-

d) Research Funding Projects:

Year	Title of the Project	Type of Project	Funded Agency	Project Value

**Category III**  
**Supplementary Activities** (Attached Additional Sheet, if required)

a) Awards and acknowledging certificates (kindly attach supporting documents):  
(NET/SLET/M.Phil/Ph.D/IUCEE/NPTEL/Other 1)

b) Counseling of Students:  
(i) Total no. of Regular students Allotted: 25      (ii) Total no. of students cleared all the subjects: 20  
(iii) No. of Backlog Students Allotted : 3      (iv) No. of Students cleared Backlogs: 2

c) Roles and contributions in Institutional Governance and administration (Tick whichever is applicable)  
Head of the Department/Department T&P Coordinator/ NSS Coordinator/Women Grievance Cell Coordinator/  
Assistant Head of the Department/ Website Coordinator/ Institutional Criteria Coordinator of NBA & NAAC /  
College Level Admissions/Time-Table  Coordinator/IQAC Coordinator/ Alumni Association Coordinator/  
CoE/Exam Cell Staff/Any other Institutional Level Coordinator role assigned by Principal (Please specify.....)

(d) Regularity assessment of Faculty/Leave Details (From 08/2018 to 07/2019)


CL	ML	CCL	EL	Other Leaves (Academic/Mat. Leave/Paternity Leave)	Loss of Pay due to excess Leaves	Loss of Pay due to biometric deviations
<u>6</u>	<u>4</u>	<u>1</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>1</u>

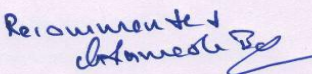
e) Other activities Inside/Outside the campus towards development of self & students:

f) Contribution to Department: class incharge, Criterion 7 NBA coordinator


f) Contribution to Institution: BSNL EETP coordinator

h) Any other Information

  
Signature of Faculty


Remarks of HoD Recommended  


Ch. Lamesh S  
Signature of Head of the Department

Remarks/Recommendations of Principal  
Recommended three increments  


Signature of Principal

**Figure B.5.8.e: Sample filled Faculty Appraisal Form for CAYm2 (2017-18)**



**VIGNAN'S INSTITUTE OF ENGINEERING FOR WOMEN**  
 (Approved by AICTE & Affiliated to JNT University, Kakinada) Estd. 2008  
 ISO 9001:2015, ISO 14001:2015, OHSAS 18001:2007 Certified Institution  
 Kapujaggarajupeta, VSEZ (Post), Visakhapatnam-530 049, Andhra Pradesh, India  
 Phone : 9133300357, 8886066339 :: Fax : 0891-2010485  
 Email : viewvizag@yahoo.com, viewprincipal@gmail.com website : www.vignanview.org

---

VIEW/PO/SA/ECE/2018-19/23/19 Date: 22/08/2018

**Increment Letter**

To

Mr.B.Sai Bharadwaj,  
 Emp.No.10021  
 Department of ECE

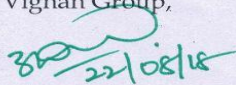
Dear B.Sai Bharadwaj,

I take this opportunity to congratulate to you and express our appreciation for your valuable contribution in achieving Institution objectives. Consequent to the review of your performance during the period of 01/08/2017 to 31/07/2018, the Management is pleased to inform you that your salary has been revised w.e.f 1<sup>st</sup> August 2018. You will be paid a Gross Salary of Rs. 33,548/- per month in AICTE 6<sup>th</sup> Pay scale of Rs.15,600-39,100. The breakup of your salary is given below:


Basic Pay	17,940
D.A	6,917
H.R.A	2,691
Academic Grade Pay	6,000
Special Allowance	0
<b>Gross Salary Per Month</b>	<b>33,548</b>

I am confident that you will continue the good work in the same spirit of commitment and sincerity and grow with our Institution. Wish you all the very best for a rewarding career with the Institution.

On behalf of the Chairman of Vignan Group,



Dr.J.Sudhakar  
 Principal-VIEW



**PRINCIPAL**  
 Vignan's Institute of  
 Engineering for Women  
 J.Peta, VSEZ (P.O.),  
 Visakhapatn.

**Figure B.5.8.f: Increment letter for CAYm2 (2017-18)**

### 5.9. Visiting/Adjunct/Emeritus Faculty etc. (10)

*Adjunct faculty also includes Industry experts. Provide details of participation and contributions in teaching and learning and /or research by visiting/adjunct/Emeritus faculty etc. for all the assessment years:*

- *Provision of inviting/having visiting/adjunct/emmeritus faculty (1)*
- *Minimum 50 hours per year interaction with adjunct faculty from industry/retired professors etc.*

*(Minimum 50 hours' interaction in a year will result in 3 marks for that year; 3 marks x 3 years = 9 marks)*

ECE is very keen on utilizing the services of eminent industrialists to make our students in gaining core competencies related to the latest trends the following list of adjunct faculty who rendered their services for the last three academic years.

Sl.No	Name of the visiting Faculty	Topic	Academic Year	No. of Hours
1	Dr.Puvvada Ramesh	MRI image Processing	CAY (2019-20)	78
	Mr.Adabala Sesa Rao	Optical Communications		
2	Dr. Puvvada Ramesh	Multi resolution Techniques	CAYm1 (2018-19)	73
	Mr.Adabala Sesa Rao	IC Technology		
3	Dr.Puvvada Ramesh	Scientific Imaging	CAYm2 (2017-18)	65
	Mr.Adabala Sesa Rao	Radar Systems		

**Table B.5.9: Details of visiting faculty for 2019-20, 2018-19, 2017-18.**

<b>Criterion 6</b>	<b>Facilities and Technical Support</b>	<b>80 M</b>
6.1	Adequate and well equipped laboratories and technical man power	30M
6.2	Additional Facilities created for improving the quality of learning experience in Laboratories	25M
6.3	Laboratories: Maintenance and overall ambiance	10M
6.4	Project laboratory	5M
6.5	Safety measures in laboratories	10M

<b>Criterion 6</b>	<b>Facilities and Technical Support</b>	<b>80M</b>
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### 6.1. Adequate and well equipped laboratories, and technical manpower (30)

1. Department of Electronics and Communications Engineering consist of well equipped laboratories and qualified technical man power to conduct the laboratories effectively as per JNTUK university norms.
2. All laboratories are equipped with sufficient and upgraded equipment to improve the psychomotor skills of the students.
3. All technical support staff is appointed in accordance with the approved standards and appropriate qualifications.
4. All laboratories are maintained updated laboratory manuals.

Following table shows the availability of adequate equipment and technical manpower support in the laboratory.

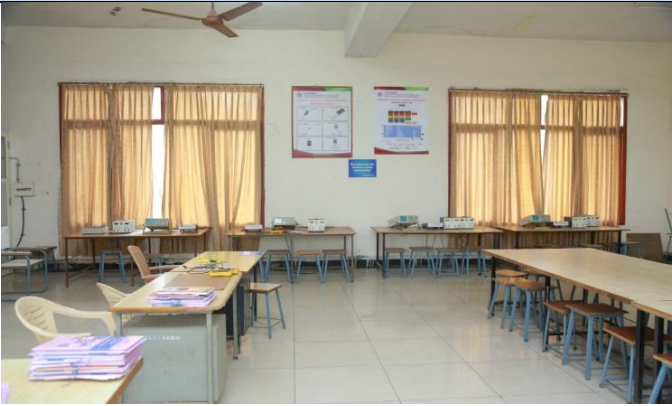

Sl. No.	Name of the Laboratory	No. of Students per setup (Batch Size)	Name of the Important equipment	Weekly utilization status (all the courses for which the lab is utilized)	Technical Manpower support		
					Name of the technical staff	Designation	Qualification
1	EDC Laboratory	1:3(35)	1. Regulated Power Supply 2. Cathode Ray Oscilloscopes 3. FG 4. Digital Multi meters 5. Decade Resistance Boxes 6. Decade Capacitance Boxes	Semester 1 36 hrs (Utilization 86%)  Semester 2 30 hrs (Utilization 71.4%)	Mr. E V V Subba Rao	Lab Technician	B.E.
2	MPMC Laboratory	1:3(35)	1. Regulated Power Supply 2. Cathode Ray Oscilloscopes 3. 8086 Microprocessor kits 4. 8051 microcontroller kits 5. ADC/DAC module 6. Interfacing cards	Semester 2 18 hrs (Utilization 42%)	Mr. S Veerraju	Lab Technician	M.Tech


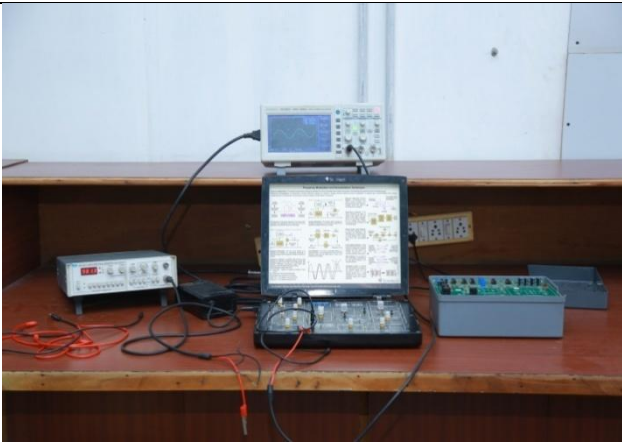
			7. Keyboard module 8. LED, 7-Segment Units 9. Digital Multi meters 10.ROM/RAM Interface module 11. 15 Desktop systems installed with TASM and Keil Software's.				
3	Circuits Laboratory	1:3(35)	1.DSO 2.AM, FM,DSSB,SSB,PAM, PWM,PPM Modulation and Demodulation kits 3. Function Generator 4. Multi Meters 5.IC741, IC555	Semester 1 18 hrs (Utilization 42%)  Semester 2 36 hrs (Utilization 86%)	Mr. G Sudheer	Lab Technician	B.E
4	MWE &OC Laboratory	1:3(35)	Directional Coupler, Reflex Klystron, Gunn Diode, Characterization of LED, VSWR Meter, E, H, Magic Tees, Circulators, Isolator	Semester 2 18 hrs (Utilization 42%)	Mr.R Gowri Shankar	Lab Technician	B.E
5	CEED Laboratory	1:1(35)	Computers having Intel core2duo processor with Xilinx software, MATLAB, Mentor Graphics & CCS software	Semester 1 36 hrs (Utilization 86%)  Semester 2 18 hrs (Utilization 42%)	Ms A E K Sreehitha	Lab Technician	B.Tech


**Table B.6.1: Laboratory and Technical manpower details**



Each laboratory Objectives & Outcomes with photos are listed below.

Physical labs	Objective(s)	Outcomes(s)	Lab photo
EDC Laboratory	To study the characteristics of electronic components and measuring instruments.	<p>Students will be able to gain practical knowledge to</p> <p>Develop some simple gadgets and analyze the characteristics of electronic components.</p> <p>Daily use PN, Zener Diode and Transistors</p>	
MPMC Laboratory	<p>To Develop assembly level programs and providing the basics of processors.</p> <p>To provide solid foundation on interfacing the external devices to the processors according to the user requirements.</p> <p>To create novel products and solution for the real time problems.</p>	<p>Students will be able to write assembly language program in 8086 and 8051 for various Interface and various sensors</p>	

<p>MWE Laboratory</p>	<p>Know about the behavior of Micro wave components.</p>	<p>Students will be able to determine the characteristics of Microwave devices Measure the various parameters of microwave components. like impedance, frequency, attenuation, VSWR and S- Parameters</p>	
<p>Circuits Laboratory</p>	<p>The ability of students to identify and resolve electric circuit problems like DC, AC and Transient analysis.  To understand various modulation and demodulation techniques in time domain and frequency domain</p>	<p>Students will be able to Analyze the various analog signals. Analyze the various digital signals. Modulation Techniques.</p>	

CEED Laboratory	To design and analyze digital circuits using Mentor graphics tool	Students will be able to Analyze static characteristics of Digital circuits on FPGAs and MOS inverters	
--------------------	---	--	---

## 6.2 Additional Facilities created for improving the quality of learning experience in Laboratories (25)

1. In line with the Vision & Mission of the Department and Institute, additional facilities are established in the laboratories to make students industry ready.
2. The laboratories are equipped with UPS, High speed internet and LCD projectors for effective demonstration.
3. All available laboratories are also made use to carry out research and conduct experiments beyond the university curriculum.

Sl. No	Name of the Facility	Details	Reason(s) for creating facility	Utilization	Areas in which students' are expected to have enhanced learning	Relevance to POs/PSOs
1	Advanced VLSI Design	Lab contains electronic design layout tools (Mentor Graphics, VIVADO) synthesis tools, simulation tools and FPGA multifunction evaluation Kits	To make the students aware of the trending technologies and help them to get jobs in the relevant field.	<p><b>12 hrs per week</b></p> <p><b>VLSI Projects:</b></p> <ul style="list-style-type: none"> <li>• High speed Digital circuits</li> <li>• Design of Viterbi Decoder for Underwater Marine Receivers using Dual Rail Delay Insensitive Approaches</li> <li>• MAC blocks</li> <li>• ALU designs</li> <li>• Multiplier designs</li> <li>• Shifter circuits &amp; RAM blocks</li> </ul>	VLSI backend design and PCB layout design	PO1, PO3, PO4, PO5, PO9, PO11, PO12. PSO1

2	Embedded Systems & IoT	Lab contains Arduino , Raspberry Pi, MSP430 boards along with supported software	To make the students aware of the software industry requirements and help them to get jobs in the relevant field.	<ul style="list-style-type: none"> <li>• 18 hrs per week</li> <li>• IoT Projects:</li> <li>• Smart stick for blind with GPS tracking system</li> <li>• IoT based gas leakage and fire alert system</li> <li>• Proficient phonocardiogram using internet of things</li> <li>• Automatic LPG cylinder booking and leakage detection using Arduino Uno</li> <li>• Smart intrusion detection system for home security</li> <li>• Alcohol detection and automatic engine lock system using Arduino</li> </ul>	Smart hardware design	PO1, PO3, PO4, PO5, PO9, PO11, PO12 PSO1
3	APSSDC-CM's Skill Excellence center	Lab contains Core I5 Acer Laptops(35 No's) with Linux OS of cost Rs 14,21,096.00	To make the students aware of the manufacturing and testing industry requirements and help them to get in the same sector.	<ul style="list-style-type: none"> <li>• 32 hrs per semester</li> <li>• Certification courses:</li> <li>• IoT Certification</li> <li>• TCS Hackthon</li> <li>• C Programming Solving Skills</li> <li>• MSTP(multi skill training program)</li> <li>• Google android developer phase1</li> <li>• Embedded Systems</li> </ul>	Coursera certification program	PO1, PO3, PO4, PO5, PO9, PO11, PO12 PSO1

Table B.6.2.a: Details of additional facilities

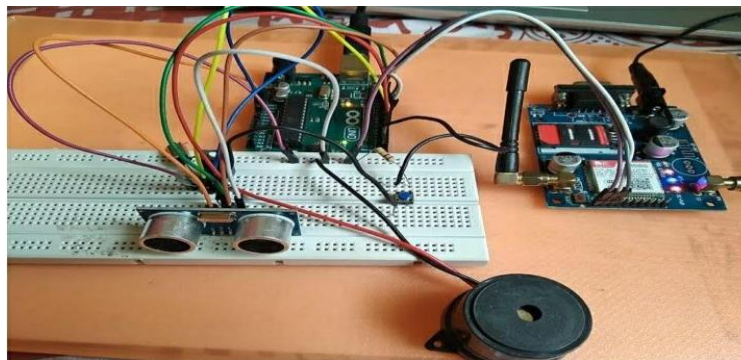
### Some of the Live Projects carried out by students using the facilities listed above:

#### 1. Smart Stick for Blind with GPS Tracking System

This is an approach to overcome major challenges face by blind people. A blind person has a physical limitedness of vision. Therefore, to facilitate their mobility to move, they make use of a normal cane. But the cane could not help them in avoiding obstacles on the sidewalks; technology can further help in providing assistance to the user. This project will develop a smart cane for a blind person using Arduino UNO and it has an Ultrasonic sensor, buzzer and a vibration motor to facilitate the user in detecting the obstacles. To assist in tracking the user's location, this smart cane utilizes GPS to determine the location and send it via SMS. The method used in this paper is the design of hardware and software. The expected results of this project are to create a smart cane for blind person which can assist their daily activities. A blind person can avoid a collision because this smart cane will alert the user through the buzzer and also the vibration motor alerts when the user is unable to hear the buzzer sound and the smart cane notify their family if they are lost.

List of students carried out this project:

Sl. No.	Roll No	Student Name
1	16NM1A0465	Kanchumarthy Roshini Krishna Tulasi
2	16NM1A0480	Konathala Jayasri
3	16NM1A04B7	Pavitra Sahu
4	16NM1A0479	Kona Priyanka



**Figure B.6.2.1: Live Model of Smart Stick for Blind with GPS Tracking System**

## 2. Internet of Things Based Gas Leakage and Fire Alert System

In today's world, the effects of accidental fires, gas leakage and explosion can be disastrous, so an advanced alert system needs to be designed. Existing alert systems used alarms for warning and send an SMS alert to the user or owner. But these systems were less useful, since the user or owner himself has to provide information about the accident to the fire station. In this, we introduced a system that consists of a GPS module and a GSM module interfaced with Arduino UNO. This system not only sends an SMS alert to the owner but also sends an SMS along with the location of the incident to the fire station. It is also equipped with a gas sensor to detect gas leakage and a flame sensor to detect the explosion and fire. A provision is also provided where it can control the circumstances to some extent using exhaust fans and solenoid valve.

List of students carried out this project:

Sl. No.	Roll No	Student Name
1	16NM1A0465	Kanchumarthy Roshini Krishna Tulasi
2	16NM1A0480	Konathala Jayasri
3	16NM1A04B7	Pavitra Sahu
4	16NM1A0479	Kona Priyanka



**Figure B.6.2.2: Live Model of IoT Based gas leakage and fire alert system**

### 3. Proficient Phonocardiogram using Internet of Things

A phonocardiogram (or PCG) may be a plot of high-fidelity recording of the sounds and murmurs made by the guts with the assistance of the machine called the phonocardiography. This technique of testing follows various design styles in the modern world in order to improve efficiency. Researchers are keeping an eye on its cost, accuracy, delay and complexity as physicians to assess the condition of the heart conduct the test. This project is intended to design an efficient phonocardiogram system with high accuracy rate, low cost, less time delay, noise immunity and wireless structure. The system is implemented in such a way that it will sense the heart signal pulses and display the output in an embedded device using Bluetooth. Arduino Uno controls the overall system, which is an open-source microcontroller board supported the Microchip ATmega328P microcontroller.

List of students carried out this project:

Sl. No.	Roll No	Student Name
1	17NM5A0412	Gorli Ramya
2	16NM1A04A4	M Mounika Vimala Dharshini
3	16NM1A0498	Mantri Deekshitha
4	16NM1A0496	Manjeti Devi



**Figure B.6.2.3: Live Model of Proficient Phonocardiogram Using Internet of Things**

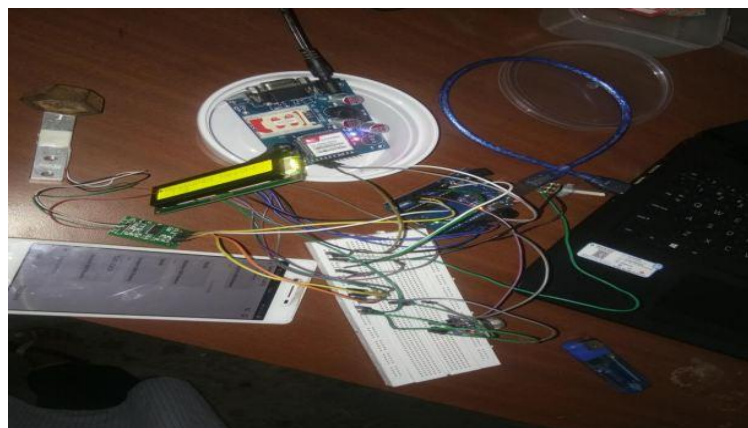


#### 4. Automatic LPG Cylinder Booking and Leakage Detection using Arduino Uno

LPG cylinder leakage is one of the major problems that are mainly happened in industrial sectors and homes. Nowadays, we have LPG cylinder booking online is so difficult, especially for illiterate people. The main purpose of this project is to figure out problems due to leakage and booking. Based on safety and security we have to design a system that will alert the user whenever any dangerous actions will occur in the kitchen gas sensor (MQ6) detects the gas then it will alert the user through buzzer and mobile. And another advantage is nothing but it can continuously measure the weight of the cylinder by using a weight sensor (load cell) whenever it reaches the threshold value then it will send a message to gas agency and user and also displays the weight of the cylinder on the LCD display. This system regularly gives updated information about gas to the user that is how much gas present inside the cylinder. It is useful for illiterate people, and older people protect them from hazardous actions.

List of students carried out this project:

Sl. No.	Roll No	Student Name
1	16NM1A04B0	Netti Priyanka
2	16NM1A04B4	Palisetty Abhinandini
3	16NM1A0497	Mantrapudi Neelima
4	17NM5A0413	Gosala Gowthamy



**Figure B.6.2.4: Live Model of Automatic LPG Cylinder Booking and Leakage Detection Using Arduino UNO**

### 5. Smart Intrusion Detection System for Home Security

The Internet of Things (IOT) is an ever-growing network of smart objects. Nowadays safety and security has become a basic necessity for society. In the present situations house thefting, bank robberies etc. are increasing day by day than chain snatching, pick pocketing due to less security systems. Our project aims in developing Raspberry Pi Based Smart Intrusion Detection System using PIR Sensor, Pi Camera and a Buzzer. The PIR sensor will sense the IR radiation that is reflected from the object and the Pi-Camera captures the picture of that object. The captured picture is sent to the G-mail of the owner with the help of Raspberry pi 3b+ board. It also reduces the response time by giving alerts in the form of notification to the owner's Gmail and an alarm to the people surrounding about the intrusion or intruder. Thus immediate alerts will be provided to the owner all over the world and allows him to access and use home systems anywhere and enjoy complete security.

List of students carried out this project:

Sl. No.	Roll No	Student Name
1	16NM1A0417	Bhaddirraju Alekhya
2	17NM5A0401	Agraharapu Devi
3	16NM1A0450	Gudivada Bhargavi
4	16NM1A0440	Ganta Thanmai



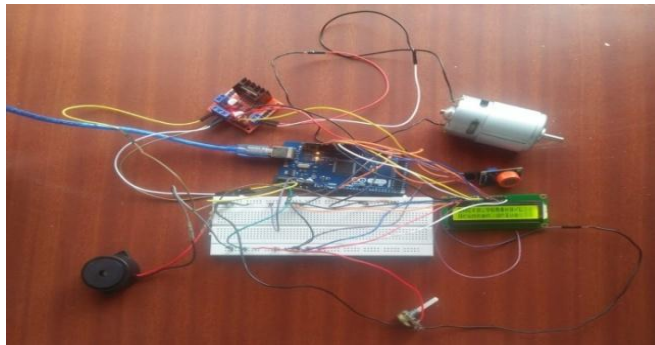
**Figure B.6.2.5: Live Model of Smart Intrusion Detection System for Home Security**

### 6. Alcohol Detection And Automatic Engine Lock System Using Arduino

The purpose of this project is to figure out the problems of loss of life and property due to drunken driving by developing a vehicle accident prevention system. The Arduino board is integrated with the Alcohol Sensor (MQ3) which detects the presence of Alcohol concentration of the driver by analyzing his/her breathe and is also integrated with a buzzer to alert people, an LCD to display a warning message, a motor to demonstrate engine locking mechanism, a motor driver IC module to control the operations, behaviour of the motor. And As soon as the presence of Alcohol is detected in the drivers breathe, the engine of vehicle is halted gradually with some delay i.e. the speed of the engine reduces gradually and then gets halted, the emergency siren (buzzer) is blown and a warning message is displayed along with the amount of alcohol concentration which is detected by the MQ3 sensor, through liquid crystal display (LCD). There by minimizing any disasters that could have happened to evade the loss of property and life due to drunken driving.

List of students carried out this project:

Sl. No.	Roll No	Student Name
1	16NM1A0407	Badagala Sharmila
2	16NM1A0445	Gogada Venkata Lakshmi
3	16NM1A0414	Batchu Prathyusha
4	16NM1A0449	Goudu Manasa
5	16NM1A0447	Gonagana Anjana Druthi



**Figure B.6.2.6: Live Model of Alcohol Detection and Automatic Engine Lock System Using ARDUINO**

The list of projects done by the students and their relevance to POs and PSOs is given below

Sl.No	Name of the Project	Relevance to POs/PSOs
1	High speed Digital circuits	PO1, PO3, PO4, PO5, PO9, PO11, PO12. PSO1
2	MAC blocks	PO1, PO3, PO4, PO5, PO9, PO11, PO12. PSO1
3	ALU designs	PO1, PO3, PO4, PO5, PO9, PO11, PO12. PSO1
4	Multiplier designs	PO1, PO3, PO4, PO5, PO9, PO11, PO12. PSO1
5	Shifter circuits & RAM blocks	PO1, PO3, PO4, PO5, PO9, PO11, PO12. PSO1
6	Smart Stick for Blind with GPS Tracking System	PO1, PO3, PO4, PO5, PO9, PO11, PO12 PSO1
7	Internet of Things Based Gas Leakage and Fire Alert System	PO1, PO3, PO4, PO5, PO9, PO11, PO12 PSO1
8	Proficient Phonocardiogram using Internet of Things	PO1, PO3, PO4, PO5, PO9, PO11, PO12 PSO1
9	Automatic LPG Cylinder Booking and Leakage Detection using Arduino Uno	PO1, PO3, PO4, PO5, PO9, PO11, PO12 PSO1
10	Smart Intrusion Detection System for Home Security	PO1, PO3, PO4, PO5, PO9, PO11, PO12 PSO1
11	Alcohol Detection And Automatic Engine Lock System Using Arduino	PO1, PO3, PO4, PO5, PO9, PO11, PO12 PSO1

**Table B.6.2.b: List of projects**

The following certification courses were organized in association with **APSSDC**.

Sl. No	Name of the certification course	Coordinator	Date(s)	No. of registered students	Relevance to POs / PSOs
1	Embedded system fundamentals	B.Sashi Kanth	11-12-2017 To 16-12-2017	162	PO1, PO3, PO4, PO5, PO9, PO11, PO12, PSO1
2	Coursera IoT Certification	G Lakshmana	14.05.2018 To to 02-06-2018	47	PO1, PO3, PO4, PO5, PO9, PO11, PO12, PSO1
3	Coursera IoT Certification	K. Rajendra Prasad	04-09-2018 To 06-12-2018	44	PO1, PO3, PO4, PO5, PO9, PO11, PO12, PSO1
4	SCALE	G Lakshmana	26-07-2018 To 28-07-2018	45	PO1, PO3, PO4, PO5, PO9, PO11, PO12, PSO1
5	Workshop on Higher Education (Webinar)	G Lakshmana	22-06-2018	68	PO11 and PO12
6	TCS Hackathon	G Lakshmana	04-07-2018 To 15-07-2018	14	PO1, PO3, PO4, PO5, PO9, PO11, PO12, PSO1
7	C Programming Solving Skills	S. Malathi	5-12-2018 To 10-12-18	57	PO1, PO3, PO4, PO5, PO9, PO11, PO12, PSO1
8	Build Box	G. Lakshmana	26-12-2018 To 10-01-2019	25	PO1, PO3, PO4, PO5, PO9, PO11, PO12, PSO1
9	MSTP (multi skill training program)	G Lakshmana	16-08-2019 To 04-03-2020	18	PO1, PO3, PO4, PO5, PO9, PO11, PO12
10	Google android developer phase 1	G Lakshmana	05-03-2020 To 07-03-2020	25	PO1, PO3, PO4, PO5, PO9, PO11, PO12
11	Embedded Systems	G Lakshmana	01-06-2020 To 13-06-2020	65	PO1, PO3, PO4, PO5, PO9, PO11, PO12, PSO1

**Table B.6.2.c: Certification courses organized list**



**Figure B.6.2.7: Photos of the certification course organized**

### 6.3. Laboratories: Maintenance and overall ambience (10)

*(Self-Explanatory)*

The department of E.C.E has well equipped and well maintained laboratories to conduct the experimental work in a healthy and safe environment.

#### **Maintenance**

Lab Maintenance Committee takes the responsibility of lab maintenance and ambience through certain number of reviews taken periodically. This committee comprises of Program Coordinator, senior faculty, lab in charge and senior technical staff. In order to maintain the laboratories efficiently, department of ECE follows a systematic procedure:

1. The committee identifies faulty equipment's, requirement of new equipment, consumables and calibrations.
2. The committee ensures the equipment is ready for conducting experiments without any hassles.

**Weekly inspection:** In this, the technical staff inspects all equipment's and prepares a report accordingly for their respective labs.

**Monthly inspection:** In this, the lab in charge along with technical staff reviews the weekly reports and sorts out if any requirements. By the end of semester the lab in charge prepares a report on the overall maintenance and requirement of the respective lab.

**Semester inspection:** Form the report of lab in charge; lab maintenance committee will decide the overall requirements and maintenance of all laboratories.

3. The following registers are maintained to trace the progress of laboratory maintenance:

**Consumable Register:** A register is maintained for newly purchased consumables along with old stock and checks the data weekly. The technical staff maintains indents and purchases of the laboratory.

**Stock Register:** Newly purchased equipment with all the details like quantity, cost and other information is posted in to the stock register.


**Calibration Reports:** A calibration report is maintained on all the equipment's regularly.

4. Internal technical staff will conduct minor repairs and major repairs will be handled by out sourced staff.
5. System servicing is carried out by the Computer Hardware Department of the Institute.
6. Student's entry and exit times are maintained through log books.

**Stock verification committee:** For every two years stock verification committee will be constituted by head of the institution to audit lab equipment, furniture and other infrastructure. This committee submits a deficiency (if any) report to the head of the institution.

Apart from the in house maintenances, some of the complex and important equipment is being sent to the service provider and after repairing/ maintenances done the provider will send back that equipment.

The below attachments are related to the maintenance of faulty equipment:



**VIGNAN'S INSTITUTE OF ENGINEERING FOR WOMEN**  
 (Approved by AICTE & Affiliated to JNT University, Kakinada) Estd. 2008  
 ISO 9001:2015, ISO 14001:2015, OHSAS 18001:2007 Certified Institution  
 Kapujaggarajupeta, VSEZ (Post), Visakhapatnam-530 049, Andhra Pradesh, India  
 Phone : 9133300357, 8886066339 :: Fax : 0891-2010485  
 Email : viewvizag@yahoo.com, viewprincipal@gmail.com website : www.vignanview.org

**Date: 01.11.2017,**  
Visakhapatnam.

No:VIEW/ECE/CEED LAB/2017-18/02

To  
 Integrated Services and Consultancy,  
 #37,2<sup>nd</sup> Floor, "Embedded Home"  
 36<sup>th</sup> Cross, 2<sup>nd</sup> Block Rajajinagar,  
 Bangalore -560010,  
 Telephone No: 080 23521165, 23126100,  
 Fax No: 91 80 23130630,  
 E-mail ID : operations@isc4esaindia.com;service@esaindia.com.

**Subject: Handing Over of CEED Lab Equipment for servicing ....Reg.**

Respected Sir,

The following Equipment is need servicing in CEED Lab Electronics and Communications Engineering Department. As for the discussions made with supplier Mr. C.V. M. Sri Ram Murthy, Manager, Electro systems Associates, Hyderabad. He is requested to send the equipment through Courier and we expected the repairs to be done within 2weeks.

S.No	Item	Serial No	Mg. Date	VIEW/ECE/CEED/No	S.R. Ref
1	8086/88E	390115204	01.02.2015	MP-28	2/2
2	8086/88E	390115210	01.02.2015	MP-30	2/2
3	8086/88E	390115207	01.02.2015	MP-26	2/2
4	8086/88E	390115208	01.02.2015	MP-17	2/2
5	Dual DAC	200813020	08-2013	DDAC-01	2/24
6	STEPPER MOTOR	410115054	01.2015	SMC-03	2/13
7	Regulated DC power Supply	27005	7-2014	PS-09	2/19
8	Regulated DC Power supply	27004	7-2014	Ps-03	04/05

*A. S. S. Rao*  
 (Prof.A.Sesha Rao)  
 PRINCIPAL

**Figure B.6.3.a: Details of equipment given for servicing**



### Delivery Note

<b>INTEGRATED SERVICES &amp; CONSULTANCY</b> #37, "Embedded Home", II Floor, 36th Cross II Block, Rajajinagar, Bengaluru-560010. GST No.: 29BJAPS4439P1ZF Consignee	Delivery Note No.	Dated
	DC/2017-18/GSR104	24-November-2017
<b>Vignan's Institute of Engineering for Women</b> Dept of ECE Kapujaggaraju peta, Vadlapudi post Backside of VSEZ Visakhapatnam - 530046	Supplier's Ref.	Other Reference(s)
	Buyer's Order No.	Dated
	Despatch Document No.	Delivery Note Date
	Despatched through	Destination
<b>Vignan's Institute of Engineering for Women</b> Dept of ECE Kapujaggaraju peta, Vadlapudi post Backside of VSEZ Visakhapatnam - 530046	By Courier	Visakhapatnam
	Terms of Delivery <b>FOR Visakhapatnam</b>	

SI No.	Description of Goods	SAC CODE	Quantity
1	Service charges Stepper motor Interface	998719	1 Nos.
2	Service Charges ESA Dual DAC Kit	998719	1 Nos.
3	Service Charges ESA86/88E	998719	3 Nos.
4	Service Charges Spares for above item	998719	
Total			<b>5 Nos.</b>

E. & O.E

Remarks: Return after repair.

Company's PAN : **BJAPS4439P**

Recd. In Good Condition

for **INTEGRATED SERVICES & CONSULTANCY**

*[Signature]*  
Authorised Signatory

*[Stamp: INTEGRATED SERVICES & CONSULTANCY, Bangalore-10, India]*

*[Handwritten: Asub 5/12/17]*

**Figure B.6.3.b: Delivery note submitted by servicing consultant**

### TAX INVOICE

<b>INTEGRATED SERVICES &amp; CONSULTANCY</b> #37, "Embedded Home", II Floor, 36th Cross II Block, Rajajinagar, Bengaluru-560010. GS TIN/UIN-29BJAPS4439P1ZF GSTIN/UIN: 29BJAPS4439P1ZF	Invoice No. <b>TI/2017-18/G215</b> Delivery Note <b>DC/2017-18/GSR104</b> Supplier's Ref. <b>DC/2017-18/GSR104</b>	Dated <b>24-Nov-2017</b> Mode/Terms of Payment <b>100% Payment in Advance</b> Other Reference(s) <b>SR No.: 172</b>
Consignee <b>Vignan's Institute of Engineering for Women</b> Kapujaggaraju Peta,, Vadlapudi Post Backside of VSEZ, Visakhapatnam - 530046 PAN/IT No : Andhra Pradesh, Code : 37	Buyer's Order No.  Despatch Document No.  Despatched through	Delivery Note Date <b>24-Nov-2017</b> Destination
Buyer (if other than consignee) <b>Vignan's Institute of Engineering for Women</b> Kapujaggaraju Peta,, Vadlapudi Post Backside of VSEZ, Visakhapatnam - 530046 Andhra Pradesh, Code : 37 PAN/IT No : Place of Supply : Andhra Pradesh	Terms of Delivery <b>FOR Visakhapatnam</b>	

SI No.	Description of Goods	HSN/SAC	GST Rate	Quantity	Rate	per	Amount
1	<b>Service Charges</b> ESA Stepper Motor Interface	998719	18 %	1 Nos	100.00	Nos	100.00
2	<b>Service Charges</b> ESA Dual DAC Interface	998719	18 %	1 Nos	100.00	Nos	100.00
3	<b>Service Charges</b> ESA 86/88E Trainer Kit	998719	18 %	3 Nos	400.00	Nos	1,200.00
4	<b>Service Charges</b> Spares Charges	998719	18 %	1 Nos	3,380.00	Nos	3,380.00
	<b>IGST</b>						4,780.00
	<b>Total</b>			<b>6 Nos</b>			<b>₹ 5,640.00</b>

Amount Chargeable (in words) **INR Five Thousand Six Hundred Forty Only** E. & O.E

HSN/SAC	Taxable Value		Integrated Tax	
	Value	Rate	Rate	Amount
998719	4,780.00	18%		860.00
<b>Total</b>	<b>4,780.00</b>			<b>860.00</b>

Tax Amount (in words) : **INR Eight Hundred Sixty Only**

**Remarks:**  
return after repair.

Company's Service Tax No. : **BJAPS4439PST001**  
 Company's PAN : **BJAPS4439P**

**Declaration**  
 We declare that this invoice shows the actual price of the goods described and that all particulars are true and correct.

**Company's Bank Details**  
 Bank Name : **HDFC Bank**  
 A/c No. : **00412320003539**  
 Branch & IFS Code : **Malleshwaram & HDFC0000041**

**for INTEGRATED SERVICES & CONSULTANCY**

Authorized Signatory

SUBJECT TO BANGALORE JURISDICTION  
 This is a Computer Generated Invoice

Figure B.6.3.c: Invoice receipt for equipment maintenance

Internal maintenance performed by the technicians as needed as per the below template.

Name of the lab: MPMC Lab

Equipment maintenance log:						
Name of the Equipment	8086/8088 Microproc Trainer kit - ESA86/88	Manufacturer contact details	ESA, Bangalore Ph: 91-80-23577924			
Label	View/ECE/CEED/18/22 S.R.Ref: 02/02	Date of purchase	19-01-2015			
Serial number	390115204	Person responsible for equipment	B. Sasi Kanth			
Manufacturer	Electro Systems Associates PVT. LTD Bangalore (ESA)	Date put into service	10-06-2018			

Date	Maintenance Description	Maintenance performed by	Date of verification before put into service	Validation performed by	Next maintenance Processed on (date)	Remarks
10/06/18	Power Box Socket Replacement	S. Shiva Kumar	09/06/2018	Ch. Ramesh Babu	10/09/2018	Problem Rectified
10/09/18	Power Card Replacement	M. Shyam Kumar	10/09/18	Ch. Ramesh Babu	22/12/2018	Problem Solved
19/12/18	Key board pin defect	M. Shyam Kumar	19/12/18	Ch. Ramesh Babu	20/02/19	Problem Solved
13/3/2019	Key board Maintenance	S. Shiva Kumar	13/03/19	B. Sasi Kanth	20/09/2019	Problem Solved
20/9/20	Power Box Socket	B. Raja	19/09/20	B. Sasi Kanth	23/01/20	Problem Rectified
18/12/19	Socket Problem	M. Shyam Kumar	17/02/19	B. Sasi Kanth	23/02/20	Rectified
23/02/20	Key Maintenance	M. Shyam Kumar	23/02/20	B. Sasi Kanth	23/03/20	Rectified

Figure B.6.3.d: Internal maintenance done by in house technical staff

Regular stock registers maintenance performed by the technical staff as shown below

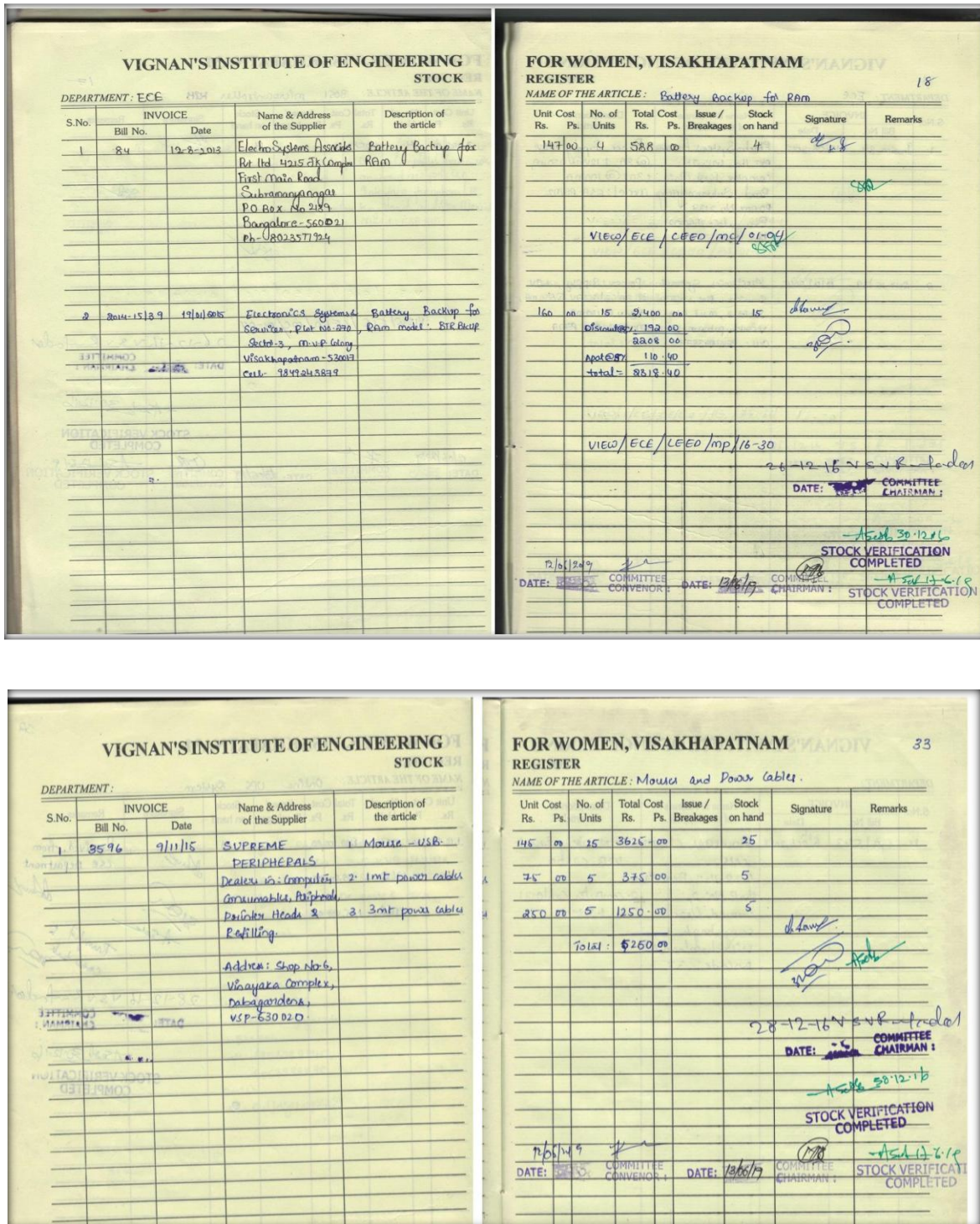


Figure B.6.3.e: Laboratory Stock Verification Status

Laboratory stock verification circular.

VIGNAN'S INSTITUTE OF ENGINEERING FOR WOMEN- VISAKHAPATNAM  
VIEW/Principal/Cir/2019/ 054 Date: 17/05/2019

**CIRCULAR**

**STOCK VERIFICATION OF LAB EQUIPMENT FOR ACADEMIC YEAR 2018-19**

The following committees are appointed for stock verification of all the departments. The committees are responsible for carrying physical verification of the equipment as per the Stock Register/ Equipment received recently. They are required to submit the report on or before 8<sup>th</sup> June, 2019.

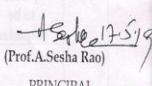
Dr.Fardhasaradhi Malla, Department of Management Studies is appointed as a Chairman for Stock Verification of the Equipments. The Chairman is also responsible for mustering all the stock registers of all the Departments.

The report should be submitted to Principal duly signed by the Chairman & HOD with proper remarks, in the prescribed format attached.

S. No.	Department to be Inspected	Committee Convener & Members	Designation	Dept.
1.	CSE/IT	Mr.P.Sudhakar -Convener	Asst.Prof.	ECE
		Mr.A.Chandraiah - Member	Asst.Prof	EEE
		Mrs.P.Kiranmayi -Member	Asst.Prof	MECH
		Mr.S.Giri Babu -Member	Asst.Prof	BS&H
		Mrs.M.Sireesha Rani -Member	Asst.Prof	MBA
2.	ECE	Dr.K.Kushal Kumar - Convener	Asst.Prof	EEE
		Mrs.Ch.Swetha - Member	Asst.Prof	MECH
		Mr.D.Rajendra Dev - Member	Asst.Prof	CSE
		Mr.P.Mohan Ganesh - Member	Asst.Prof	IT
		Ms.M.Sowjanya -Member	Asst.Prof	MBA
3.	EEE	Dr.B.Chandra Sekhar- Convener	Assoc.Prof	ECE
		Mr.B.Sasikanth - Member	Asst.Prof	ECE
		Mr.Ch.Suresh - Member	Asst.Prof	MECH
		Mrs. B.V.R.Gowri - Member	Asst.Prof	ECE
		Mrs.A.V. Lakshmi -Member	Asst.Prof	MBA

Contd....

S. No.	Department to be Inspected	Committee Convener & Members	Designation	Dept.
4.	MECH	Mr.J.Hari -Convener	Assoc.Prof.	IT
		Mr.R.Ravi - Member	Asso.Prof	CSE
		Mr.N.V.Chaitanya - Member	Asst.Prof	ECE
		Mrs.D.Kamal Kumari -Member	Asst.Prof	CSE
		Mrs.T.Suguna -Member	Asst.Prof	MBA
5.	BS&H & Principal Office	Mr.Ch.Ramesh Babu-Convener	Asso.Prof	ECE
		Mr.Ch.Ramasuri A.N -Member	Asst.Prof	IT
		Mrs.Ch.Padmavani - Member	Asst.Prof	ECE
		Mrs. B.Swathi - Member	Asst.Prof	MECH
		Ms.L.Tejaswini -Member	Asst.Prof	MBA

  
 (Prof.A.Sesha Rao)  
 PRINCIPAL

Copy to:

1. Committee's Chairman
2. All HOD's (To Circulate among Members)
3. A.O/Office
4. Committee's Convener's

**Figure B.6.3.f: Circular for Laboratory Stock Maintenance Audit**

**Ambience:**

- The overall ambience of the laboratories is effective with efficient lighting and ventilation to make every student comfort.
- Laboratory renovation is carried out at regular intervals.
- Display charts about the equipment and experiments are maintained.
- UPS with spike protection is available in all the computing laboratories.
- Few of the laboratories are equipped with ICT facility and all the laboratories are fitted with chalk boards.
- Furniture and sitting arrangements of the students is properly maintained.
- Maintaining lab occupancy and list of experiments are displayed in the notice board properly.
- The technician will maintain working tables properly after completion of experimental work.
- Overall ambience of laboratory is good:
  - ✓ All old records are burnt in the oven which is available in the college
  - ✓ All the damaged CPUs, Monitors and other equipments like CROs, Power supply units and other measuring instruments etc., are disposed to third party vendor as and when they are obsolete.
  - ✓ Every lab is provided with suffice number of dust bins.
  - ✓ Housekeeping team clean the laboratories on regular basis.

#### 6.4. Project laboratory (5)

*(Mention facilities & Utilization)*

1. This lab is used by the students to do their project work.
2. Final year students are allowed to use this lab 3 hours a day to complete their project works.
3. Mini projects are also carried out by students in this project lab.
4. By using this lab several students won honors from the University.
5. The facilities provided and outcomes with equipment details as listed below.

Project lab Objectives:

1. Analyze and formulate a solution to VLSI, Image & Signal Processing, Communication and Embedded system based project.
2. Test and validate the results for the project task using modern tools.
3. Manage to enhance critical thinking skills in a team.
4. This Lab has provided a platform for students to implement research based projects under the guidance of faculty members.
5. The main objective of the project has resulted in publications in various journals and conference proceedings (both at national and international level).
6. The facility has provided a learning platform for both students and faculty.

Below table shows the facilities of project laboratory utilized by students.

Sl. No	Major Equipment Name	No. of Units (in no)	Outcomes
1	Cathode Ray Oscilloscope	4	<ul style="list-style-type: none"> <li>• In-depth knowledge of applying the concepts in real time applications</li> <li>• Develop interfacing to real world devices like LED displays, Keyboards, DAC/ADC, and various other devices.</li> <li>• Analyze the various applications and circuits based on the problem described.</li> </ul>
2	Regulated Power supply	4	
3	Function Generator	4	
4	TMS320XXX series DSP boards	3	
5	FPGA Multifunction Evaluation Kit	5	
6	Texas MSP430 (IoT)	10	
7	Digital IC trainer	2	
8	ARM 926 DEV Kit	1	
9	ARM CORTEX	3	
10	Aurduino board –IoT	5	

**Table B.6.4.a: Hardware facilities available in project laboratory**

Sl. No	No. of Desktop computers	Software loaded	Outcomes
1	System configuration: Intel core2duo processor with 2 GB RAM and 150GB HDD  Quantity 60 with internet facility	<ol style="list-style-type: none"> <li>1. MATLAB</li> <li>2. Mentor Graphics</li> <li>3. Xilinx</li> <li>4. Arduino for IoT</li> <li>5. Energia for IoT</li> <li>6. MultiSim</li> <li>7. CC Studio</li> <li>8. Some Virtual simulator software versions (eg. Tinker cad, Proteus, Vir_labs.etc.)</li> </ol>	<ul style="list-style-type: none"> <li>• Understand about various types of signals and systems, classify them, analyze them, and perform various operations on them.</li> <li>• Evaluate the time and frequency response of Continuous and Discrete time systems which are useful to estimate the behavior of electronic circuits and communication systems.</li> <li>• Able to build and Simulate Core Electronic Circuits based on the problem described.</li> </ul>

**Table B.6.4.b: Software facilities available in project laboratory**



List of quality projects for the last three academic years is listed below:

### Students Quality Projects

Academic year	Sl.No	Regd. No	Name of the students	Project Title	Relevance to POs PSOs
2017-18	1	14NM1A0412	Boddeti Tanuja Lakshmi	IoT Based Smart Parking Security System	PO3, PO5, PO6, PO7, PO8, PO12, PSO1
		14NM1A0450	Kandregula Annapurna		
		14NM1A0448	Jami Gayathri		
		14NM1A0453	Karedla Venkata Sravani		
	2	14NM1A0463	Madaka Sirisha	IoT Based Infant Abduction Security System	PO3, PO5, PO6, PO7, PO8, PO12, PSO1, PSO2
		14NM1A0451	Kandregula Uma Devi		
		14NM1A0433	Gandi Leelavathi		
		14NM1A0415	Bonagiri Vijaya Lakshmi		
	3	14NM1A04C4	A Bhavana Sai Narayani	Solar Driven Arduino based Automatic Irrigation using GSM	PO3, PO5, PO6, PO7, PO8, PO12, PSO1
		14NM1A04C3	Ampolu Navya		
		14NM1A04C1	Aki Vandana		
		13NM1A0460	L.Swathi		
	4	15NM5A0412	Marla Monika Reddy	Event-Triggering Method for IoT health care applications	PO3, PO5, PO6, PO7, PO8, PO12, PSO1, PSO2
		14NM1A04F6	Pithani Udaya Lakshmi		
		14NM1A04E4	Kothurthi Manasa		
	5	14NM1A0404	Ayyapureddi Priyanka	IoT Based Smart garbage Alert System Using UNO & ESP 8266	PO3, PO5, PO6, PO7, PO8, PO12, PSO1
14NM1A0418		Buddha Mohana Lakshmi			
14NM1A0454		Koripella Saipriya			
14NM1A0417		B. Gnaneswari Santhosh Kusuma			
6	14NM1A04F9	Reddy Mounica	IoT Based smart IV fluid detection	PO3, PO5, PO6, PO7, PO8, PO12, PSO1	
	15NM5A0413	Siddapu Adilakshmi			
	14NM1A04E3	Korupolu Renuka			
	15NM5A0409	G Vijayalakshmi Babitha			
2018-19	7	15NM1A0430	Gandreti Kanaka Divya	Advancement in Traffic System using ultrasonic Sensor.	PO3,PO5, PO6, PO7, PO8, PO12,
		15NM1A0402	Andiboyina Janaki		

		15NM1A0406	Ayenampudi Alekhya		PSO1	
		15NM1A0440	Gurugubelli Madhuri			
	8		15NM1A0434	Gollakoti Mani Deepika	Smart Intelligent ECG System based on IoT	PO3, PO5, PO6, PO7, PO8, PO12, PSO1
			15NM1A0421	Chitimiseti Haritha		
			15NM1A0433	Gogulamudi Pooja		
			15NM1A0449	Kandipalli Sarika		
	9		16NM5A0405	Buskala Sravani	IoT Based Weather Monitoring System using Raspberry Pi Board.	PO3,PO5, PO6, PO7, PO8, PO12, PSO1
			15NM1A0426	Datla Sai Krishna Sravanthi		
			15NM1A0412	Baswa Rajani		
			15NM1A0460	Korada Geetha Madhuri		
	10		15NM1A0438	Gundala Santhi	Vision based Vehicle Tracking and Counting using Raspberry-Pi 3	PO3, PO5, PO6, PO7, PO8, PO12, PSO1
			15NM1A0427	Dokala Anusha		
			15NM1A0413	B Shanmukalakshmi Katyayani		
			15NM1A0429	Ganagala Divyasri		
	11		15NM1A0474	Maradana Manasa	Human Face recognition and edge detection using Raspberry Pi	PO3, PO5, PO6, PO7, PO8, PO12, PSO1
			15NM1A04A5	Ramba Vasavi Devi		
16NM5A0411			Kalla Poornima			
15NM1A0490			Pagadala Chittilakshmi			
<b>2019-20</b>	12	16NM1A0407	Badagala Sharmila	Alcohol Detection and Automatic Engine Lock System Using ARDUINO	PO3, PO5, PO6, PO7, PO8, PO12, PSO1	
		16NM1A0445	Gogada Venkata Lakshmi			
		16NM1A0414	Batchu Prathyusha			
		16NM1A0449	Goudu Manasa			
		16NM1A0447	Gonagana Anjana Druthi			
	13		16NM1A0444	Ginkala Phani Kumari	Fault Detection in Railway Tracks	PO3, PO5, PO6, PO7, PO8, PO12, PSO1, PSO2
			16NM1A0437	Gadilli Manasa		
			16NM1A0428	Darapu SaiVasavi		
			16NM1A0415	Bathina Sreelekha		
	14		16NM1A0494	Malla Kinnera	Resume sorting using machine learning	PO3,PO5, PO6, PO7, PO8, PO12, PSO1, PSO2
			16NM1A04A2	Mondi Niharika		
			16NM1A0462	Kaicharla AnjaniTulasi		
			16NM1A0474	Katapalli Vara Lakshmi		

15	16NM1A04E4	Thamma Sai Harshitha	Design of array antenna for 5G Applications	PO3, PO5, PO6, PO7, PO8, PO12, PSO2
	16NM1A04D2	Sanivada Chandana Priyanka		
	16NM1A04E3	Thadi Sunitha		
	17NM5A0428	Sikha Hemasree		
16	16NM1A04D6	Somala Maha Lakshmi	Compact H-Shaped sierpinski carpet fractal antenna for 5G Wireless applications	PO3, PO5, PO6, PO7, PO8, PO12, PSO2
	17NM5A0417	Karanam Sravani		
	16NM1A04E5	Thoota Keerthana		
	17NM5A0419	Kolli Vakula Devi		
17	16NM1A04F9	Vennala Poornima	Chatbot using machine learning	PO3, PO5, PO6, PO7, PO8, PO12, PSO2
	16NM1A04C1	Pratti Rishita Jaya		
	16NM1A04D0	Roopashree Pampanaboyina		
	16NM1A04G5	Sridevi Priyadarshini Kolli		
18	16NM1A0416	Beesetty Joshna	Vehicle Detection System with Emergency Notification Abstract	PO3, PO5, PO6, PO7, PO8, PO12, PSO1
	16NM1A0425	Cherukuru Sowmya		
	16NM1A0458	Jandhyam Chandini		
	16NM1A0420	Budaraju S S S Pradyumna		
19	16NM1A0417	Bhaddirraju Alekhya	Smart Intrusion Detection System for Home Security	PO3, PO5, PO6, PO7, PO8, PO12, PSO1
	17NM5A0401	Agraharapu Devi		
	16NM1A0450	Gudivada Bhargavi		
	16NM1A0440	Ganta Thanmai		
20	17NM5A0404	Bodala Sagarika	IoT based water quality monitoring system	PO3, PO5, PO6, PO7, PO8, PO12, PSO1
	16NM1A0405	Amarakota Swathi		
	16NM1A0426	Chippada Divya Lakshmi		
	16NM1A0443	Geesala Rajeswary		
21	16NM1A0404	Agnihotri Padma Sravya Sri	Cardioxy Health Tracker	PO3, PO5, PO6, PO7, PO8, PO12, PSO1
	16NM1A0436	E Swathi Laxmi Santhoshi Devi		
	16NM1A0431	Devisetti Dedeepya		
	16NM1A0454	G Leela Subha Laxmini		
22	16NM1A0465	K Roshini Krishna Tulasi	Smart stick for blind with GPS tracking system	PO3, PO5, PO6, PO7, PO8, PO12, PSO1
	16NM1A0480	Konathala Jayasri		
	16NM1A04B7	Pavitra Sahu		

	16NM1A0479	Kona Priyanka		
23	16NM1A04B0	Netti Priyanka	Automatic LPG Cylinder Booking and Leakage Detection Using Arduino UNO	PO3, PO5, PO6, PO7, PO8, PO12, PSO1
	16NM1A04B4	Palisetty Abhinandini		
	16NM1A0497	Mantrapudi Neelima		
	17NM5A0413	Gosala Gowthamy		
24	17NM5A0412	Gorli Ramya	Proficient Phonocardiogram Using Internet of Things	PO3, PO5, PO6, PO7, PO8, PO12, PSO1
	16NM1A04A4	M Mounika Vimala Dharshini		
	16NM1A0498	Mantri Deekshitha		
	16NM1A0496	Manjeti Devi		
25	16NM1A04C6	Rapaka Ramyasri	Real - Time pothole detection and notification system	PO3, PO5, PO6, PO7, PO8, PO12, PSO1
	16NM1A04G0	Vepada Harika		
	16NM1A04D5	Siyadri Navya Sudha		
	16NM1A04E9	Vadlamani Naga Sai Sandeepthy		
26	16NM1A04F2	Varahagiri Joshana Rajeswari	IoT Based gas leakage and fire alert system	PO3, PO5, PO6, PO7, PO8, PO12, PSO1
	17NM5A0416	Kambala Santhi Priya		
	17NM5A0427	Shaik Firdos		
	17NM5A0429	Syed Nayeema Kousar		
27	16NM1A04E7	Thumpala Jyothsna Prasanthi	Design and Development of Vehicle theft and Tracking system	PO3, PO5, PO6, PO7, PO8, PO12, PSO1
	16NM1A04E1	Tatisetty Alekhya		
	17NM5A0423	Perla Rajeswari		
	16NM1A04F6	Vechalapu Roshini		

**Table B.6.4.c: List of quality projects**

**Student Research Publications:**

By making use of the facility provided in project laboratory our students published their research papers in various UGC & Scopus indexed journals with their faculty assistance.

The total publications in reputed journals are: 50

The list of publications is given below.

**CAY m2 (2017-18)**

1. J. Sudhakar, A. Uma Maheswari. "Design of Viterbi Decoder for Underwater Marine Receivers using Dual Rail Delay Insensitive Approaches". Defense S & T Technical Bulletin. Scopus Indexed. Vol.10. No.1. pp. 24-32, H-Index: 8, 2017.
2. J. Sudhakar, K. Sushma, "Energy Efficient IEEE 754 Floating Point Multiplier using Dual Spacer Delay Insensitive Logic", Circuit World, Vol. 43, No. 02, pp. 72-79, 2017.SCI, Scopus Indexed, H-Index:18, 2017.
3. J. Sudhakar, A.L. Durga, K. Sushma "Evaluation of Dual Rail Complete Detection using Asynchronous Delay Insensitive Frameworks", International Journal of Simulation, Systems, Science & Technology, Vol. 19, No. 03, May 2018.
4. J. Sudhakar, Y. Alekhya, K. S. Syamala. "Dual Rail Delay Insensitive IEEE-754 Single Precision Null Convention Floating Point Multiplier for Low Power Applications", in Lecture Notes in Networks and Systems, 5<sup>th</sup> International Conference on Innovations in Electronics & Communication Engineering, Hyderabad, July 2016 - Springer Proceedings.
5. M GeethaSruthi, Ch Ramesh Babu, Dr. Ch. Sumanth Kumar "Implementation of an IoT based webserver for home automation" in International Journal of electronics, electrical and computational system (IJEECS), Vol. 6, Issue 5. pg 273-279, May 2017.

**CAY m1 (2018-19)**

1. J. Sudhakar, R.V. Jeevitha, "Sense Amplifier Half Buffer Based Ripple Carry Adder for IEEE 754 Standards", International Conference on Intelligent Computing and Smart Communication Technologies (ICSCT 19), Springer, at Anurag group of Institutions Hyderabad, 26<sup>th</sup>& 27<sup>th</sup> July 2019.
2. S. Jhansi Rani, J. Sudhakar, "Multi Objective Analysis of Standard Cells using sense Amplifier based QDI approach", IOSR Journal of Electronics and Communication Engineering (IOSR-JECE), Vol. 13, Issue. 4, July-August 2018, ISSN 2278-8735.

3. S Nirosha, Ch Ramesh Babu, “Automated ECG Signal Quality Assessment based on Wavelet Decomposition for Baseline Wander Noise Removal” 3rd International Conference on Innovative Trends in Engineering, Applied Science and Management (ICITEASM-2018).

#### **CAY (2019-20)**

1. R.V. Jeevitha, J. Sudhakar, “Sense Amplifier Half Buffer Ripple Carry Adder for IEEE 754 Standards”, International Journal of Engineering and Advanced Technology (IJEAT), Vol. 9, Issue. 3, February 2020, ISSN 2249-8958.
2. B.Sharmila, G. Venkata Lakshmi, B.Prathyusha, G.Manasa, G. Anjana Druthi, D.A.Tatajee, “Alcohol Detection And Automatic Engine Locking System Using Arduino Mega 2560”, Dogo Rangsang Research Journal, Vol-10 Issue-07 No. 11 July 2020, ISSN : 2347-7180.
3. Ch. Sri Satya Jyothirmai, G. PhaniKumari, G. Manasa, D. SaiVasavi, B. SreeLekha, “Fault Detection In Railway Track”, Journal of Engineering Service, Vol 11, Issue 7, July/2020, ISSN NO: 0377-9254.
4. Tilak Raju Daram, B.Navya Sri, D.Indhuja, G.Manisha, A.KavitaRao, “Low Power Design Of Carry Look Ahead Adder By Using Adiabatic Logic”, International Journal of Advanced Science and Technology, Vol. 29, No. 7, (2020), pp. 5271-5282.
5. B.Joshna, CH.Sowmya, J.Chandini, B.Pradyumna, CH.RameshBabu, “Vehicle Accident Detection Systemwith Emergency Notification”, Alochana Chakra Journal, Volume IX, Issue VI, June/2020, ISSN NO: 2231-3990.
6. P. Gopi Krishna, D.Yasodha Rani , G. Niharika, B. Vardhani, CH. Mohana Ramya, “The Secure Watermarking of Digital Color Images by Using a Combination of Chaotic Mapping”, International Research Journal of Engineering and Technology (IRJET), Volume: 07 Issue: 07 July 2020, e-ISSN: 2395-0056, p-ISSN: 2395-0072.
7. K. Sunil Kumar, G. Srinija, G. SaiPoojitha, B. Durga Ramani, D. Lalitha Reddy, “ Brain Tumor Detection by Using Image Processing”, Dogo Rangsang Research Journal, Vol-10 Issue-07 No. 10 July 2020, ISSN : 2347-7180.
8. B.SashiKanth ,BH.Alekhyia, A.Devi, G.Bhargavi, G.Thanmai, “ Smart Intrusion Detection System For Home Security”, International Journal of Advances in Engineering and Management (IJAEM), Volume 2, Issue 3, pp: 01-06, ISSN: 2395-5252.

9. G.Tulasi, B.SriVasavi, B.Bhargavi, K.Priyanka, Dr.K.V.Ramana Rao, “ Polsar Image Classification Using Context Based Max-Margin”, DogoRangsang ResearchJournal, Vol-10 Issue-07 No. 18 July 2020, ISSN : 2347-7180.
10. Mrs.Ch. AnithaBhavani, G. Jayasri, I. Yamini, A. Aswini, Ch. Shaik Someya, “ Analog Pulse Compression Technique with Improved SNR and Reduced Sidelobes”, DogoRangsang Research Journal, Vol-10 Issue-06 No. 12 June 2020, ISSN : 2347-7180.
11. Mrs. T .SandhyaKumari ,B. Sagarika, A. Swathi, Ch. Divya, G.Rajeswary” , Water Quality Analysis and Notification Through Iot”, Alochana Chakra Journal, Volume IX, Issue VII, July/ 2020, ISSN NO:2231-3990.
12. Malathi Seelam ,A.V.A Prathyusha ,D. Jayasri , B. Naveena and A. Madhuri, “Microstrip patch antenna designed using frequency reconfigurability for 5G applications”, Journal of Engineering Service , Vol 11, Issue 6,June/ 2020, ISSN NO: 0377-9254.
13. B.V.R. Gowri, Ch. SreeHarshitha, D. Yogitha, D.Navya, Ch. VenkataLakshimi, “ Design and Analysis of Low Power and High Speed Double- Tail Comparator Using Power Gating Techniques”, International Journal of Advances in Engineering and Management (IJAEM), Volume 2, Issue 1, pp: 841-846, ISSN: 2395-5252.
14. G. Lakshmana, Boddapati Sai Chandini, Ande Sowjanya, Gummadi Divya, Jampana Sai Madhuri, “Vehicles Detection from Satellite Images using Digital Image Processing”, Dogo Rangsang Research Journal, Vol-10 Issue-07 No. 11 July 2020, ISSN : 2347-7180.
15. B Sai Bharadwaj, A.Padma Sravya Sri, E.S.L.Santhoshi Devi, D.Dedeepya, G.Leela Subha Lakhmini, “ Cardiac Telemetry Monitoring of Sensor based Pulse Oximeter”, Test Engineering & Management, Page No. 14271 – 14277 March - April 2020, ISSN: 0193-4120.
16. Mrs.B. Manjula, K. Pavani, K. Roopa, M. Nagamani, M. Sai Rekha, “An Adjustable Window Based Fir Filter And Its Application In Audio Signal De-Noising”, Dogo Rangsang Research Journal, Vol-10 Issue-06 No. 13 June 2020, ISSN: 2347-7180.
17. P. Gopi Krishna, K. Sai Komali, K. Naga Tejaswani, K. Pavani and N. Mounika, “Image Denoising Using Stationary Wavelet Transform”, Journal of Engineering Service ,Vol 11, Issue 6,June/ 2020, ISSN NO: 0377-9254.

18. Ch. Sri Satya Jyothirmai, K.R. Krishna Tulasi, K. Jayasri, Pavitra Sahu and K. Priyanka, “ Smart Stick For Blind People With Location Tracking System”, Journal of Engineering Service, Vol 11, Issue 6, June/ 2020, ISSN NO: 0377-9254.
19. T. Sandhya Kumari, K. Leela, M.D.S. Pravallika, M. Roshini and K. Prathyusha, “Performance Comparison of Image Enhancement Techniques”, Journal of Engineering Service, Vol 11, Issue 6, June/ 2020, ISSN NO: 0377-9254.
20. BVR Gowri, K. Binduvallika, M. Prathyusha, M. Mounica, G. AmruthaValli, “Design Of 8\*8 Vedic Multiplier Using Reversible Logic Gates”, International Journal of Science, Engineering and Technology Research (IJSETR), Volume 9, Issue 6, June 2020, ISSN: 2278 -7798.
21. Dhanya M Ravi, K. Renuka Vijaya Lakshmi, L. Pushpa Ganga Bhavani, P. Sri Satya Abhignya, M.Haritha, “ Power Efficient Shift Register Using Leakage Control NMOS Transistor”, Dogo Rangsang Research Journal, Vol-10 Issue-06 No. 12 June 2020, ISSN : 2347-7180 .
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25. Mrs.Ch.Anitha Bhavani, M.Jyothirmayee Naidu, K.Kavya, P.Y.N Anjani, N.V.Divayvani, “Design of less detectable RADAR waveforms using Barker codes and poly phase codes”, Juni Khyat, Vol-10 Issue-7 No. 1 July 2020, ISSN: 2278-4632.
26. M. Revathi, P. Venkata Lakshmi, K. Saisuma, K. Poornima Preethi, CH. Ramesh Babu, “Integrated Machine Learning With Region Based Active Contour Models In Medical Image Segmentation”, Juni Khyat, Vol-10 Issue-6 No. 7 June 2020, ISSN: 2278-4632.



27. Dhanya M Ravi, G. Ramya, M.M.V. Dharshini, M. Deekshitha, M. Devi, "Proficient Phonocardiogram Using Bluetooth Module", Alochana Chakra Journal, Volume IX, Issue VI, June/2020, ISSN NO: 2231-3990.
28. D. Tilak Raju, M. D. S. Manasa, "Design and Implementation of 3\*3 Array Multiplier using DPTL Logic", International Journal of Engineering Research & Technology (IJERT), Vol. 9 Issue 04, April-2020, ISSN: 2278-0181.
29. P. Sudhakar, R. Ramya Sri, V.Harika, S.Navya Sudha, "Pothole Detection System Using IoT", DogoRangsang Research Journal, Vol-10 Issue-07 No. 8 July 2020, and ISSN: 2347-7180.
30. B. Sai Bharadwaj, S. Hemanth Sandhya, I. Dhana Lakshmi ,G. Damini Priya and V. Tanuja, " Detection of Third Heart Sound Using Intrinsic Time Scale Decomposition", International Journal of Grid and Distributed Computing Vol. 13, No. 1, (2020), pp. 568-576, ISSN: 2005-4262.
31. T.Sandhya Kumari, Sushmita Mondal, S. Ramya, V. Pujitha, T. Jayashree, "Comparison of Saliency and Statistical Fusion Techniques", Alochana Chakra Journal, Volume IX, Issue VI, June/2020, ISSN NO: 2231-3990.
32. Malati Seelam, T. Sai Harshitha, S. Chandana Priyanka, T. Sunitha, S. Hemasree, "Design and Performance Analysis of 2x2 and 4x1 array antennas for Wireless Applications", DogoRangsang Research Journal, Vol-10 Issue-07 No. 11 July 2020, ISSN : 2347-7180.
33. Dr.K.V Ramana Rao, T. Ponny, V. Mounika, G. Sri Sai Lalitha, V. Navya Priya Harini, "Minimization of Speckle Noise From Polarimetric SAR Data", Dogo Rangsang Research Journal, Vol-10 Issue-07 No. 11 July 2020, ISSN : 2347-7180.
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36. D.A.Tatajee, V. Amal Prathyusha, D.Rama Harika, V.Sai Sowjanya and P. Kusuma Kumari, "Implementation of A Low Power Dissipation and Area Efficient Decoder Using Mixed Circuit Logic", Dogo Rangsang Research Journal, Vol-10 Issue-06 No. 12 June 2020, and ISSN: 2347-7180.
37. Mrs. Ch. Padma Vani, S. Sirisha, V. Manju, R. Sai Poojitha and K. Sailaja, "Design of Hamming Code Encoder & Decoder Using Different Techniques", Alochana Chakra Journal, Volume IX, Issue VI, June/2020 ,ISSN:2231-3990.
38. S. Malathi, S. Maha Lakshmi, K. Sravani, T. Keerthana, K. Vakula Devi, "Multi-Band H-Shaped Fractal Antenna for 5g Wireless Applications", Dogo Rangsang Research Journal, Vol-10 Issue-07 No. 14 July 2020, ISSN: 2347-7180.
39. Mrs.B. Manjula, S. Daisy Angel, T. Vasudha Reddy, V.Sindhuja4, R. Chinmayi, "Removal Of Noise In ECG Signal Using Filtering Techniques", Dogo Rangsang Research Journal, Vol-10 Issue-06 No. 13 June 2020, ISSN : 2347-7180.
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41. Mrs. Anitha Bhavani.Ch, Lavanya.M, Varnika.V, Sailaja.P, "Estimating RCS for Perfectly Conducting Sphere at Different Frequencies and RCS Reduction Techniques", Alochana Chakra Journal, Volume IX, Issue VI, June/2020, ISSN: 2231-3990.
42. P.Sudhakar, P.Lalitha, T.Sirisha, R.V.Vigneshwari, T.Lavanya, "Brain Tumor Detection Based on K-Means Clustering Using Gui", Dogo Rangsang Research Journal, Vol-10 Issue-07 No. 11 July 2020, ISSN: 2347-7180.

**Honors received from the university:**

From the research facilities available and continuous learning, the following are the achievements of the students recognized by the University.

Awards received for student projects					
Sl.No	Date	Project Title	Event/Place	Name of the Students	Award
1	Oct2017	Innovation idea on "Automatic LPG booking through IVRS, leakage detection and real time gas monitoring system"	Innovation Fair at JNTUK, Kakinada	P.Chandana Sravani, V. Tirumala Gayatri, S. Jyothi, S.Prasanna Lakshmi	First
2	Sep 2019	IoT based industrial safety	Eclectique 2k19, JNTU, Vizianagaram	K. SaiKomali, M. Deekshitha, M. Jyothirmayee	Third

**Table B.6.4.d: Honors received form JNTUK****Students exhibited their works in national level competitions:**

The following are the national level activities represented by our students conducted by AICTE.

Sl. No	Name of the Student (s)	Event name (Title of the work)	Academic Year
1	1.Ch Sowmya 2.G. Niharika 3.B. Joshna 4.A.V.A. Prathyusha 5.J. Chandini 6.B. Alekhya	Smart India Hackathon( Monitoring input and output water quality of a water purifier through smart sensing using IoT)	2019-20
2	1.C. Divya Lakshmi 2.D. Saivasavi 3.G. Thanmai 4.Kavitha Rao 5.G. Rajeswary 6.G.Anjanadruthi	Smart India Hackathon (Automatic alert to safety officers using IoT)	2019-20
3	1.M.Selvi 2.T.Sindhusha 3.P.Sushmita 4.M.Sirisha 5.A.Moulika 6.B.Sravya sree	Smart India Hackathon (Technology for Rural development)	2018-19

4	1.A.priyanka 2.B.Mohana Lakshmi 3.K.Sai priya 4.B.G.S.Kusuma 5.K.Sravani 6.A.Janaki	Smart India Hackathon (IoT based smart garbage system)	2018-19
5	1.J.V.Sakunthala 2.G.Sravanthi 3.K.Mamatha 4.G.shanthi 5.S.H.Sandhya 6.V.N.Priya	Smart India Hackathon (IoT based green house monitoring)	2018-19
6	1.V.T Gayatri 2.P.Chandana Sravya 3.A.B Lakshmi 4.O.Rupa Manjari 5.S.Jyothi 6.K.R.Krishna Tulasi	Smart India Hackathon(IoT based health parameter monitoring )	2018-19
7	1.N.Navya 2.P.Sai Keerthi 3.Y.Yamani 4.A.Yashasri 5.Sushmita Mondal 6.R.Ramya Sri	Smart India Hackathon(IoT access control system)	2018-19
8	1.M.Latha Devi 2.M.Aruna 3.R.Lohitha 4.S.Prasanna Lakshmi 5.B.Bhargavi 6.B.Sagarika	Smart India Hackathon(IoT based waste management system )	2018-19
9	1.P.Likitha 2.M.Bhavya Sree 3.P.Prahleika 4.M.P.Sunayana 5.D.Sai Vasavi 6.D.Jayasri	Smart India Hackathon(IoT based waste management system )	2018-19
10	1.P.Vineela 2.S.Karishma 3.T.L.Priyanka 4.P.S.N.Mounika 5. K. Sai Suma 6.K.Sai Komali	Smart India Hackathon( RFID & Arduinio based access control system )	2018-19
11	1.M.Sravani Sandhya 2.N.Susila	Smart India Hackathon (Water Quality monitoring using IoT )	2018-19

	3.M.Manjusha 4.M.Poornima 5.T.Harshitha 6.S.C.Priyanka		
12	1.P.Madhu Mounica 2.S.Rohini 3.Ch.Divya 4.K.Poornima 5.T.Sree Varshini 6.T.likhita rosy	Smart India Hackathon ( Soil moisture sensing & monitoring)	2018-19
13	1. M.Madhavi Latha 2.K.Jhansi 3.K.Udayanjali 4.S.K.Karishma 5.R.Sai Poojitha 6.S.Maha Lakshmi	Smart India Hackathon ( IoT based agriculture monitoring system )	2018-19
14	1.G.Poojitha 2.G.Kanaka Divya 3.K.Poornima 4.B.Kavya 5.P.Rishitha 6.V.Sandeepty	Smart India Hackathon (IoT based biometric)	2018-19
15	1.B.D.VRoja 2.G.Madhuri 3.B.Sandhyarekha 4.K.Tejasri 5.R.V.Vigneshwari 6.T.Joshna	Smart India Hackathon( IoT based SCADA system )	2018-19
16	1.Ch.Mounica 2.K.Suma 3.G.Mani Deepika 4.K.Sai Mounica 5.M.Deekshitha 6.M.Jyothirmayee	Smart India Hackathon ( IoT based minimize electricity theft )	2018-19
17	1.D.Jhanavi 2.G.Revathi 3.K.Manju Bhargavi 4.K.Naga Varalakshmi 5.V.Manju 6.R.Divya Sai	Smart India Hackathon (IoT based minimize electricity theft )	2018-19
18	1.P.Bharathi 2.P.Vineela 3.S.Tulasi 4.M. Charishma	Smart India Hackathon (IoT based urban bus navigation )	2018-19

	5.P.Bhavani 6.M.Gowthami		
19	1.A.Jhansi 2.B.Saranya 3.G.Divya Sri 4.K.Sarika 5.B.Rama Devi 6.K.Bindu Priya	Smart India Hackathon (IoT based wireless notice board)	2018-19
20	1.P.Mamtha 2.D.Sai Vandana 3.Sakshi Singh 4.B.Bharghavi 5.A.Sravani 6.K.Divya	Smart India Hackathon (IoT based home automation )	2018-19
21	1.D.S.K Sravanthi 2.A.Alekya 3.K.Geetha Madhuri 4.CH.Lalitha Lavanya 5.B.Rajeshwari 6.K.L Manga Veni	Smart India Hackathon (Real time student monitoring system )	2018-19

**Table B.6.4.e: List of students exhibited projects at SIH**

SIH activity certificate is attached below:

Students are explaining their project work in SIH activity through YouTube:



**6.5 Safety measures in laboratories (10)**

Sl. No.	Name of the Laboratory	Safety Measures
1	EDC, ECA & PDC Lab	<ul style="list-style-type: none"> <li>• The circuit connections are tested by the faculty / instructor before switching on the power supply.</li> <li>• First Aid Kit is available at the laboratory.</li> <li>• Avoid touching the mains power supply wire with bare hands.</li> <li>• Overcrowding near the lab table is not allowed.</li> <li>• Experiments are carried out in such a manner that no equipment is damaged or lost and no one is injured.</li> <li>• Sensitive electrical circuits and electronic parts are handled with caution.</li> <li>• Proper grounding of electrical supply is ensured</li> <li>• Students are guided to wear aprons during lab session.</li> <li>• All laborites equipped with MC breakers.</li> <li>• In case of emergency, the ambulance service is at hand.</li> </ul>
2	LICA, AC & DC Lab	<ul style="list-style-type: none"> <li>• The circuit links are tested by the faculty / instructor before switching on the power supply.</li> <li>• First Aid Kit is available at the laboratory.</li> <li>• Avoid touching the mains power supply wire with bare hands.</li> <li>• Overcrowding near the lab table is not allowed..</li> <li>• Experiments are carried out in such a manner that no equipment is damaged or lost and no one is injured.</li> <li>• Sensitive electrical circuits and electronic parts are handled with caution.</li> <li>• Proper grounding of electrical supply is ensured</li> <li>• All laborites equipped with MC breakers.</li> <li>• In case of emergency, the ambulance service is at hand..</li> </ul>
3	DICA, DSP, VLSI Lab	<ul style="list-style-type: none"> <li>• The circuit links are tested by the faculty / instructor before switching on the power supply.</li> <li>• First Aid Kit is available at the laboratory.</li> <li>• Avoid touching the mains power supply wire with bare hands.</li> <li>• Overcrowding near the lab table is not allowed..</li> <li>• Experiments are carried out in such a manner that no equipment is damaged or lost and no one is injured.</li> <li>• Sensitive electrical circuits and electronic parts are handled with caution.</li> <li>• Proper grounding of electrical supply is ensured</li> <li>• All laborites equipped with MC breakers.</li> <li>• In case of emergency, the ambulance service is at hand.</li> </ul>
4	MPMC Lab	<ul style="list-style-type: none"> <li>• The circuit links are tested by the faculty / instructor before switching on the power supply.</li> <li>• First Aid Kit is available at the laboratory.</li> <li>• Avoid touching the mains power supply wire with bare hands.</li> <li>• Overcrowding near the lab table is not allowed..</li> <li>• Experiments are carried out in such a manner that no equipment is</li> </ul>

		<p>damaged or lost and no one is injured.</p> <ul style="list-style-type: none"> <li>• Sensitive electrical circuits and electronic parts are handled with caution.</li> <li>• Proper grounding of electrical supply is ensured</li> <li>• All laborites equipped with MC breakers.</li> <li>• In case of emergency, the ambulance service is at hand.</li> </ul>
5	MWE Lab	<ul style="list-style-type: none"> <li>• The circuit links are tested by the faculty / instructor before switching on the power supply.</li> <li>• First Aid Kit is available at the laboratory.</li> <li>• Proper measure will be taken for radiation of the lab equipment.</li> <li>• Avoid touching the mains power supply wire with bare hands.</li> <li>• Overcrowding near the lab table is not allowed..</li> <li>• Experiments are carried out in such a manner that no equipment is damaged or lost and no one is injured.</li> <li>• Sensitive electrical circuits and electronic parts are handled with caution.</li> <li>• Cooling fans are provided for Micro wave oscillators.</li> <li>• Proper grounding of electrical supply is ensured</li> <li>• All laborites equipped with MC breakers.</li> <li>• In case of emergency, the ambulance service is at hand.</li> </ul>

**Table B.6.5: List of safety measures**

- Effective safety measures such as multiple exits and ventilation are provided in all class rooms, laboratories and auditoria.
- Proper stabilization is provided to avoid voltage fluctuations.
- Firefighting equipment such as fire buckets, carbon dioxide cylinders, foams etc. are provided.
- Technical personnel in laboratories are aware of the usage of the equipments.
- Availability of water, in case of emergency, is ensured.
- Equipment manuals are maintained for proper handling of the equipments.
- Display charts for dos and don'ts are available in every lab.

## **DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING**

### **Dos and Don'ts for students to follow in the Lab**

#### **Dos**

1. It is mandatory to wear uniform and ID card to the Lab.
2. It is mandatory to enter your name and number in the log book.
3. Always carry your observation & Record to the Lab.
4. Avoid loose connections.



5. Verify the RPS current/voltage knobs at Maximum/Minimum Positions.
6. Switch ON power supply only after verification of the circuit by the faculty.
7. Note down the reading without errors.
8. Switch off the power supply immediately after completing the experimental work.
9. Return the equipment after completing the experiment to lab technician.
10. Place CRO function generator etc., at their positions before leaving the lab.
11. Maintain discipline.

**Don'ts**

1. Handle the equipment with footwear.
2. Switch ON / OFF the supply and other equipment on your experiment.
3. Operate or Handle the other equipment not related to your experiment.

<b>Criterion 7</b>	<b>Continuous Improvement</b>	<b>50 M</b>
7.1	Actions taken based on the results of evaluation of each of the POs & PSOs	20M
7.2	Academic Audit and Actions Taken thereof during the Period of Assessment	10M
7.3	Improvement in Placement, Higher Studies and Entrepreneurship	10M
7.4	Improvement in the quality of students admitted to the program	10M

<b>Criterion 7</b>	<b>Continuous Improvement</b>	<b>50 M</b>
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### 7.1. Actions taken based on the results of evaluation of each of the POs & PSOs (20)

*(Identify the areas of weaknesses in the program based on the analysis of evaluation of POs & PSOs attainment levels. Measures identified and implemented to improve POs & PSOs attainment levels for the assessment years.)*

To ensure the continuous improvement in the program outcomes, the Electronics and Communication Engineering department identifies the gaps at micro level. The analysis of the POs and PSOs assist to draw the conclusions of weak areas in the program. The effective measures and implementations are based on these gaps, which enhances both the teaching quality and learning experience. The following table data present the observations and proposed plan of actions for a given academic year.

#### POs attainment levels and actions for improvement during CAYm3 (2016-17)

POs	Target Level	Attainment Level	Observations
<b>PO1: Engineering knowledge:</b> Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.			
<b>PO1</b>	<b>2.20</b>	<b>2.28</b>	<ul style="list-style-type: none"> <li>• Target is achieved</li> <li>• This PO attainment can be improved further in these courses C205 [SS], C213 [EMWTL], C305 [AWP].</li> </ul>
<p><b>Action1:</b> Tutorial classes on realization of linear systems for C205, characterization of EM Waves for C213 and antenna arrays for C305 are to be conducted with animations.</p> <p><b>Action 2:</b> For second year courses multiple examples &amp; solutions are to be provided.</p> <p><b>Action3:</b> Improving the problem-solving ability by providing more remedial classes and assignments on the fundamental subjects by subject experts.</p>			
<b>PO2: Problem analysis:</b> Identify, formulate, review research literature, and analyze complex Engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and Engineering sciences.			
<b>PO2</b>	<b>2.20</b>	<b>2.25</b>	<ul style="list-style-type: none"> <li>• Target is achieved</li> <li>• Attainment can be increased for these courses C205 [SS], C310 [MPMC] and C313 [MWE].</li> <li>• Need to improve problem identification and analyzing skills further.</li> </ul>
<b>Action1:</b> Concepts of interfacing peripherals with microprocessor for C310 and S-Matrix			

<p>calculations of microwave components for C313 are to be practiced well with more examples</p> <p><b>Action 2:</b> Tutorial classes are to be conducted for these courses to enhance analyzing ability.</p> <p><b>Action3:</b> Faculty members are to be advised for more interaction with students through questionnaire or analytical videos on the subjects.</p>			
<p><b>PO3: Design/development of solutions:</b> Design solutions for complex Engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.</p>			
<b>PO3</b>	<b>2.20</b>	<b>2.22</b>	<ul style="list-style-type: none"> <li>• Target is achieved</li> <li>• This attainment can be increased further in these courses C205 [SS], C313 [MWE] and C314 [BME]</li> </ul>
<p><b>Action1:</b> More examples to be solved on power density spectrums for C205 and power point presentations on patient monitoring devices for C314.</p> <p><b>Action2:</b> Faculty is advised to focus academic projects in solving the public health and safety issues.</p>			
<p><b>PO4: Conduct investigations of complex problems:</b> Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions</p>			
<b>PO4</b>	<b>2.20</b>	<b>2.03</b>	<ul style="list-style-type: none"> <li>• Target is not achieved</li> <li>• PO attainment is low duet to the courses C214 [AC], C301 [PDC], C302 [LICA] and C304 [DSDIC]</li> </ul>
<p><b>Action 1:</b> More case studies and problems will be discussed for multivibrator concepts of C301, design examples on active filters for C302 and practical sessions on VHDL Programming for C304.</p>			
<p><b>PO5:Modern tool usage:</b> Create, select, and apply appropriate techniques, resources, and modern Engineering and IT tools including prediction and modelling to complex Engineering activities with an understanding of the limitations</p>			
<b>PO5</b>	<b>2.20</b>	<b>1.96</b>	<ul style="list-style-type: none"> <li>• Target is not achieved</li> <li>• Low attainment is noticed in these courses C202 [EDC], C212 [STLD], C214 [AC] and C304 [DSDIC].</li> </ul>
<p><b>Action 1:</b> It is proposed to explain the concepts like FET modelling for C202, Realization of finite state machines for C212 and discrimination methods for AM/FM for C214.</p> <p><b>Action 2:</b> PCB Design workshop is to be arranged in improving the practical application using latest tools.</p>			
<p><b>PO6: The engineer and society:</b> Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional Engineering practice</p>			

<b>PO6</b>	<b>2.0</b>	<b>2.04</b>	<ul style="list-style-type: none"> <li>• Target is achieved</li> <li>• This PO attainment can be increased further in these courses C205 [SS], C304 [DSDIC] and C409 [CMC]</li> </ul>
<p><b>Action 1:</b> Remedial classes on cellular systems and problems in interfacing for C409.</p> <p><b>Action 2:</b> Content beyond the syllabus that deals with legal and safety issues is to be planned through expert lectures.</p> <p><b>Action 3:</b> Awareness program on legal rights will be arranged.</p>			
<b>PO7: Environment and sustainability:</b> Understand the impact of the professional Engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.			
<b>PO7</b>	<b>2.0</b>	<b>2.03</b>	<ul style="list-style-type: none"> <li>• Target is achieved</li> <li>• Attainment can be increased further in these courses C304 [DSDIC] and C405 [RS]</li> </ul>
<p><b>Action 1:</b> Remedial classes are to be arranged for different Radar tracking systems in C405</p> <p><b>Action 2:</b> NSS activities like eco Ganesha will be planned to create environmental awareness.</p>			
<b>PO8: Ethics:</b> Apply ethical principles and commit to professional ethics and responsibilities and norms of the Engineering practice.			
<b>PO8</b>	<b>2.0</b>	<b>1.96</b>	<ul style="list-style-type: none"> <li>• Target is not achieved</li> <li>• This is due to low attainment in these courses C314 [BME], C401 [VLSI] and C403 [DIP].</li> </ul>
<p><b>Action 1:</b> Flipped classroom strategy is to be incorporated for MOS fabrication in C401, extra hours to be conducted for clear understanding in C403.</p> <p><b>Action 2:</b> Faculty members are advised to teach engineering ethics and moral values</p>			
<b>PO9: Individual and team work:</b> Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings			
<b>PO9</b>	<b>2.0</b>	<b>2.13</b>	<ul style="list-style-type: none"> <li>• Target is achieved</li> <li>• Attainment can be increased further in these courses C205 [SS], C401 [VLSI].</li> </ul>
<p><b>Action 1:</b> Remedial classes are to be conducted for these courses.</p> <p><b>Action 2:</b> The students are to be allowed to work in groups through co and extracurricular activities.</p>			
<b>PO10: Communication:</b> Communicate effectively on complex Engineering activities with the Engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.			
<b>PO10</b>	<b>2.0</b>	<b>2.01</b>	<ul style="list-style-type: none"> <li>• Target is achieved</li> <li>• This PO attainment can be increased further in these courses C212 [STLD], C303 [CS], C311</li> </ul>

			[DSP] and C405 [RS].
<p><b>Action 1:</b> Extra classes are to be conducted for solving problems on stability analysis for C303.</p> <p><b>Action 2:</b> It is proposed to get MoU with APSCHE for British Council English Communication skills project.</p> <p><b>Action 3:</b> It is proposed to get MoU with Oxford University Press to conduct Oxford Achiever program.</p>			
<p><b>PO11: Project management and finance:</b> Demonstrate knowledge and understanding of the Engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.</p>			
<b>PO11</b>	<b>2.0</b>	<b>1.99</b>	<ul style="list-style-type: none"> <li>• Target is not achieved</li> <li>• Low attainment is noticed in these courses C212 [STLD], C301 [PDC] and C412 [LPICD]</li> </ul>
<p><b>Action 1:</b> Special classes with STAD activity are proposed for sweep circuits in C301, low power memory techniques in C412.</p> <p><b>Action 2:</b> Students are encouraged to analyze the balance sheet of the organizations, mini and major projects.</p> <p><b>Action 3:</b> Special classes will be organized to understand the principles of financial analysis of projects</p>			
<p><b>PO12: Life-long learning:</b> Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.</p>			
<b>PO12</b>	<b>2.0</b>	<b>2.07</b>	<ul style="list-style-type: none"> <li>• Target is reached</li> <li>• PO attainment can be increased further in these courses C205 [SS], C302 [LICA] and C303 [CS].</li> </ul>
<p><b>Action 1:</b> Remedial classes are to be planned for these courses.</p> <p><b>Action 2:</b> Awareness on latest technologies and trends will be created through seminars and guest lectures.</p>			
<p><b>PSO1:</b> Exploit the concepts of VLSI and embedded systems for implementation of real time applications</p>			
<b>PSO1</b>	<b>2.2</b>	<b>2.22</b>	<ul style="list-style-type: none"> <li>• Target is achieved</li> <li>• This attainment can be increased further in these courses C205 [SS] and C304 [DSDIC].</li> <li>• Knowledge of practical implementation is to be improved</li> </ul>
<p><b>Action 1:</b> Orientation classes are to be arranged for transformation techniques in C205.</p> <p><b>Action 2:</b> More practical sessions are to be planned for lab-associated course like C304.</p>			
<p><b>PSO2:</b> Apply advanced algorithms in signal processing, image processing &amp; communication system to solve complex problems</p>			
<b>PSO2</b>	<b>2.2</b>	<b>2.28</b>	<ul style="list-style-type: none"> <li>• Target is achieved</li> </ul>

			<ul style="list-style-type: none"> <li>• Low attainment is noticed in these courses C202 [EDC], C205 [SS], C212 [STLD].</li> <li>• Application knowledge of signal processing and communications need to improve.</li> </ul>
<p><b>Action1:</b> Remedial classes with animations are to be planned for analysis part of these courses.</p> <p><b>Action2:</b> Expert lectures from industry will be organized on modern Engineering practices.</p>			

**Table B.7.1: Actions for improvements of PO attainments for CAYm3 (2016-17)**

**POs attainment levels and actions for improvement during CAYm2 (2017-18)**

POs	Target Level	Attainment Level	Observations
<p><b>PO1: Engineering Knowledge:</b> Apply the knowledge of mathematics, science, Engineering fundamentals, and an Engineering specialization to the solution of complex Engineering problems.</p>			
PO1	2.30	2.37	<ul style="list-style-type: none"> <li>• Target is achieved</li> <li>• Attainment can be increased further in these courses C205 [SS], C211 [RVSP] and C313 [MWE].</li> <li>• Less solving ability in dealing with numerical subjects</li> </ul>
<p><b>Action 1:</b> Multiple examples on sequential circuits in C205 &amp; stochastic processes in C211 are to be exercised in tutorial classes.</p> <p><b>Action 2:</b> Orientation classes are to be conducted with animations and quizzes for these courses to improve fundamental knowledge.</p> <p><b>Action 3:</b> Additional problems will be exercised through class assignments for these basic subjects.</p> <p><b>Action 4:</b> To create more insights in basic subjects, students are to be encouraged to take NPTEL courses.</p>			
<p><b>PO2: Problem analysis:</b> Identify, formulate, review research literature, and analyze complex Engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and Engineering sciences.</p>			
PO2	2.30	2.33	<ul style="list-style-type: none"> <li>• Target is achieved</li> <li>• Attainment can be increased further in these courses C202 [EDC] and C314 [BME]</li> <li>• Need to improve problem identification and analyzing skill</li> </ul>
<p><b>Action 1:</b> Remedial classes on concepts like bio telemetry for C314 are to be conducted.</p> <p><b>Action 2:</b> Assignments on numerical analysis are to be given for C202.</p> <p><b>Action 3:</b> Seminars will be arranged with industrial experts on contemporary issues.</p>			
<p><b>PO3: Design/development of solutions:</b> Design solutions for complex Engineering problems</p>			

and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.			
<b>PO3</b>	<b>2.30</b>	<b>2.34</b>	<ul style="list-style-type: none"> <li>• Target is achieved</li> <li>• Attainment can be increased further in these courses C205 [SS] and C304 [DSDIC].</li> </ul>
<p><b>Action 1:</b> Remedial classes are to be conducted for these courses.</p> <p><b>Action 2:</b> Mini projects will be planned to improve the design skills.</p> <p><b>Action 3:</b> Analysis based assignments for these subjects are to be given.</p>			
<b>PO4: Conduct investigations of complex problems:</b> Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions			
<b>PO4</b>	<b>2.30</b>	<b>2.31</b>	<ul style="list-style-type: none"> <li>• Target is achieved</li> <li>• Attainment can be increased further in these courses C212 [STLD], C305 [AWP] and C314 [BME]</li> <li>• Lack of proper understanding on research methods</li> </ul>
<p><b>Action 1:</b> Assignments will be planned in sequential circuits for C212.</p> <p><b>Action 2:</b> Students will be encouraged to publish their project work in reputed journals.</p>			
<b>PO5: Modern tool usage:</b> Create, select, and apply appropriate techniques, resources, and modern Engineering and IT tools including prediction and modelling to complex Engineering activities with an understanding of the limitations			
<b>PO5</b>	<b>2.30</b>	<b>2.20</b>	<ul style="list-style-type: none"> <li>• Target is not achieved</li> <li>• Low attainment is noticed in these courses C202 [EDC], C214 [AC], C213 [EMWTL] and C310 [MPMC]</li> </ul>
<p><b>Action 1:</b> Simulation tools will be used to demonstrate FET characteristics for C202 is to be planned and parameter analysis using smith charts are to be practiced in C213.</p> <p><b>Action 2:</b> Additional lab programs are to be incorporated for C310.</p> <p><b>Action 3:</b> Hands on sessions on latest hardware like Rasberry Pi and MSP430 are to be conducted.</p>			
<b>PO6: The engineer and society:</b> Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional Engineering practice			
<b>PO6</b>	<b>2.10</b>	<b>2.13</b>	<ul style="list-style-type: none"> <li>• Target is reached</li> <li>• Attainment can be increased further in these courses C205 [SS] and C211 [RVSP].</li> </ul>
<b>Action 1:</b> Remedial classes for LTI systems and analysis in C205.			



<b>Action 2:</b> Students are to be motivated to participate in social activities.			
<b>PO7: Environment and sustainability:</b> Understand the impact of the professional Engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.			
<b>PO7</b>	<b>2.10</b>	<b>2.11</b>	<ul style="list-style-type: none"> <li>• Target is achieved</li> <li>• Attainment can be increased further in these courses C409 [CMC], C411 [ES] and C412 [LPICD].</li> <li>• Less understanding on technology impact on environment</li> </ul>
<b>Action 1:</b> Tutorial classes will be arranged for embedded systems C411 in real time developments.			
<b>Action 2:</b> Guest lectures and seminars will be organized to create awareness about technology impact on environmental issues			
<b>PO8: Ethics:</b> Apply ethical principles and commit to professional ethics and responsibilities and norms of the Engineering practice.			
<b>PO8</b>	<b>2.10</b>	<b>2.06</b>	<ul style="list-style-type: none"> <li>• Target is not achieved</li> <li>• Low attainment is noticed for these courses C201 [MEFA], C313 [MWE] and C403 [DIP].</li> </ul>
<b>Action 1:</b> More tutorial lectures are to be arranged for these courses.			
<b>Action 2:</b> Students will be asked to write assignments and lab records on their own.			
<b>PO9: Individual and team work:</b> Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings			
<b>PO9</b>	<b>2.10</b>	<b>2.18</b>	<ul style="list-style-type: none"> <li>• Target is achieved</li> <li>• Attainment can be increased further in these courses C406 [OC] and C412 [LPICD].</li> <li>• Students should be given opportunity to work in groups.</li> </ul>
<b>Action 1:</b> Remedial classes are to be arranged for different fibre splicing techniques in C406			
<b>Action 2:</b> Students were encouraged to participate in national level technical events like seminars, expos etc.			
<b>Action 3:</b> Students will be motivated to participate in student chapter activities to exhibit their abilities both as individuals and as team members in a group			
<b>PO10: Communication:</b> Communicate effectively on complex Engineering activities with the Engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.			
<b>PO10</b>	<b>2.10</b>	<b>2.14</b>	<ul style="list-style-type: none"> <li>• Target is achieved</li> <li>• Attainment can be increased further in these</li> </ul>

			courses C211 [RVSP], C214 [AC] and C311 [DSP]
<p><b>Action 1:</b> Proposed to conduct collaborative activity (STAD) for the topic for radio receivers in C214.</p> <p><b>Action 2:</b> Students will be asked to participate in seminars and conferences.</p> <p><b>Action 3:</b> Writing skills are to be improved by conducting essay-writing competitions.</p>			
<p><b>PO11: Project management and finance:</b> Demonstrate knowledge and understanding of the Engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.</p>			
PO11	2.10	2.05	<ul style="list-style-type: none"> <li>• Target is not achieved</li> <li>• Low attainment is noticed in these courses C206 [ET], C215 [ECA LAB], and C412 [LPICD].</li> <li>• Financial analysis is required for projects.</li> </ul>
<p><b>Action 1:</b> Remedial classes on 3-phase induction motors for C206, additional sessions are to be planned for C215 using simulation tools.</p> <p><b>Action 2:</b> Students will be encouraged to organize department associations.</p> <p><b>Action 3:</b> Students are encouraged to do mini projects in latest technologies.</p>			
<p><b>PO12:Life-long learning:</b> Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.</p>			
PO12	2.10	2.17	<ul style="list-style-type: none"> <li>• Target is achieved</li> <li>• Attainment can be increased further in these courses C211 [RVSP], C212 [STLD] and C313 [MWE].</li> <li>• Some students couldn't realize the importance of life-long learning</li> </ul>
<p><b>Action 1:</b> Awareness on latest technologies and trends will be created through seminars and guest lecture.</p>			
<p><b>PSO1:</b> Exploit the concepts of VLSI and embedded systems for implementation of real time applications</p>			
PSO1	2.30	2.37	<ul style="list-style-type: none"> <li>• Target is achieved</li> <li>• Low attainment is noticed in these courses C202 [EDC], C205 [SS] and C212 [STLD].</li> <li>• Requirement of industry according to latest technologies was not fulfilled by the regular courses.</li> </ul>
<p><b>Action 1:</b> Concepts in these courses are to be explained with vignettes to create more insights of the content.</p> <p><b>Action 2:</b> PCB Design workshop is to be arranged to improve the practical application using</p>			

latest tools.			
<b>PSO2:</b> Apply advanced algorithms in signal processing, image processing& communication system to solve complex problems			
<b>PSO2</b>	<b>2.30</b>	<b>2.34</b>	<ul style="list-style-type: none"> <li>• Target is achieved</li> <li>• This attainment can be improved further in these courses C202, C305 [AWP] and C314 [BME]</li> <li>• Students are lacking knowledge in application specific subjects.</li> </ul>
<b>Action 1:</b> Practical demonstration for transistor biasing in C202 is to be explained during lab sessions.			
<b>Action 2:</b> Workshops related are to be organized to enhance the knowledge of students			

**Table B.7.2: Actions for improvements of PO attainments for CAYm2 (2017-18)**

**POs attainment levels and actions for improvement during CAYm1 (2018-19)**

<b>POs</b>	<b>Target Level</b>	<b>Attainment Level</b>	<b>Observations</b>
<b>PO1: Engineering Knowledge:</b> Apply the knowledge of mathematics, science, Engineering fundamentals, and an Engineering specialization to the solution of complex Engineering problems.			
<b>PO1</b>	<b>2.40</b>	<b>2.45</b>	<ul style="list-style-type: none"> <li>• Target is achieved</li> <li>• Attainment can be increased further for these courses C202 [EDC], C205 [SS] and C213 [EMTL].</li> </ul>
<b>Action1:</b> More assignment questions with numerical analysis are to be focused in C205.			
<b>Action2:</b> More tutorial classes are to be conducted for the topics like magnetostatics in course C213 with vignettes for understanding the basic concepts.			
<b>Action3:</b> Remedial classes are to be planned to improve problem solving ability for these courses.			
<b>PO2: Problem analysis:</b> Identify, formulate, review research literature, and analyze complex Engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and Engineering sciences.			
<b>PO2</b>	<b>2.40</b>	<b>2.42</b>	<ul style="list-style-type: none"> <li>• Target is achieved</li> <li>• Attainment can be increased further for these courses C202 [EDC], C203 [DS], C213 [EMTL] and C305 [AWP].</li> <li>• Need to improve the analyzing ability among the students</li> </ul>
<b>Action 1:</b> Some of the topics in C202like transistor biasing will be explained with more examples.			
<b>Action 2:</b> Tutorial classes with more examples are proposed for C213 & C305 to enhance the			

analyzing ability.			
<b>Action 3:</b> Problem identification skills are to be enhanced among the students by motivating them to explore contemporary issues.			
<b>PO3: Design/development of solutions:</b> Design solutions for complex Engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.			
<b>PO3</b>	<b>2.40</b>	<b>2.40</b>	<ul style="list-style-type: none"> <li>• Target is achieved</li> <li>• This PO attainment can be increased further for these courses C202 [EDC], C211 [RVSP] and C305 [AWP].</li> <li>• Design aspects are lagging in the projects</li> <li>• Projects should aim in solving towards public health and safety issues.</li> </ul>
<b>Action 1:</b> Animations and ICT demonstrations are proposed for C202.			
<b>Action 2:</b> Reasoning based assignments for C202, C211, and C305 are proposed to reinforce the design skills.			
<b>Action 3:</b> Academic projects need to address the health and safety solutions for industrial applications.			
<b>Action 4:</b> Virtual labs are to be incorporated for mini projects to enhance design ability.			
<b>PO4: Conduct investigations of complex problems:</b> Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions			
<b>PO4</b>	<b>2.40</b>	<b>2.41</b>	<ul style="list-style-type: none"> <li>• Target is achieved</li> <li>• Attainment can be increased further for these courses C202 [EDC], C213 [EMTL] and C305 [AWP].</li> <li>• Synthesis ability is lacking</li> </ul>
<b>Action 1:</b> Research based case studies are to be included in the assignments for C305.			
<b>Action 2:</b> GATE questions are to be practiced in tutorial classes for C202&C213.			
<b>Action 3:</b> Faculty members are advised to discuss simple and relevant journal papers in classroom to improve research-based knowledge.			
<b>PO5: Modern tool usage:</b> Create, select, and apply appropriate techniques, resources, and modern Engineering and IT tools including prediction and modelling to complex Engineering activities with an understanding of the limitations			
<b>PO5</b>	<b>2.40</b>	<b>2.40</b>	<ul style="list-style-type: none"> <li>• Target is achieved</li> <li>• PO5 attainment can be increased further for these courses C202 [EDC], C209 [ECA] and C305 [AWP].</li> </ul>
<b>Action 1:</b> The analysis of amplifiers in C209 is to be explained virtually in the class room.			

<b>Action 2:</b> Proposed to organize a workshop on latest tools like python programming.			
<b>Action 3:</b> Projects should be inclined towards the expansion of tools or app developments.			
<b>PO6: The engineer and society:</b> Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional Engineering practice			
<b>PO6</b>	<b>2.20</b>	<b>2.20</b>	<ul style="list-style-type: none"> <li>• Target is achieved</li> <li>• Attainment can be increased further for these courses C202 [EDC], C211 [RVSP], C213 [EMTL] and C305 [AWP].</li> <li>• Lack of understanding between the Engineering services with the society</li> </ul>
<b>Action 1:</b> Remedial classes for transmission lines in C213 are to be planned.			
<b>Action 2:</b> NSS activities are to be increased to fill the gap between Engineering education and society			
<b>Action 3:</b> Rubrics for project evaluation must include these elements			
<b>PO7: Environment and sustainability:</b> Understand the impact of the professional Engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.			
<b>PO7</b>	<b>2.20</b>	<b>2.21</b>	<ul style="list-style-type: none"> <li>• Target is achieved</li> <li>• Attainment can be increased further for these courses C209 [ECA], C213 [EMTL], C305 [AWP] and C409 [CMC].</li> </ul>
<b>Action 1:</b> Tutorial classes should be conducted with more examples on power amplifiers in C209.			
<b>Action 2:</b> Expert lectures are planned to improve consciousness on environment and sustainability issues.			
<b>Action 3:</b> Awareness programs like ‘Empowering India through atomic energy’ will be given to create societal responsibility.			
<b>PO8: Ethics:</b> Apply ethical principles and commit to professional ethics and responsibilities and norms of the Engineering practice.			
<b>PO8</b>	<b>2.20</b>	<b>2.27</b>	<ul style="list-style-type: none"> <li>• Target is achieved</li> <li>• Attainment can be increased further for these courses C202 [EDC], C211 [RVSP], C212 [STLD] and C305 [AWP].</li> <li>• Along with technical knowledge, ethical knowledge should be there</li> </ul>
<b>Action 1:</b> Need to identify more example problems on C211 and C212.			
<b>Action 2:</b> Special lectures will be arranged on professional ethics in Engineering and value education			
<b>Action 3:</b> Faculty members are advised to teach Engineering ethics and moral values.			

<b>PO9: Individual and teamwork:</b> Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings			
<b>PO9</b>	<b>2.20</b>	<b>2.22</b>	<ul style="list-style-type: none"> <li>• Target is achieved</li> <li>• Attainment can be increased further for these courses C205 [SS]), C401 [VLSI] and C411 [ES].</li> </ul>
<p><b>Action 1:</b> More practical sessions are to be conducted for C411.</p> <p><b>Action 2:</b> Technical activities under student clubs are to be organized to improve team building and leadership qualities.</p> <p><b>Action 3:</b> Students should be encouraged to participate more in group discussions which incorporate the decision-making ability and work division capability.</p> <p><b>Action 4:</b> More events are organized under professional bodies to present their abilities as team members in a group.</p>			
<b>PO10: Communication:</b> Communicate effectively on complex Engineering activities with the Engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.			
<b>PO10</b>	<b>2.20</b>	<b>2.23</b>	<ul style="list-style-type: none"> <li>• Target is achieved</li> <li>• Attainment can be increased further for these courses C202 [EDC], C205 [SS], C209 [ECA] and C213 [EMTL].</li> <li>• Still presentation skills need to be improved further.</li> </ul>
<p><b>Action 1:</b> Remedial classes are to be planned for these courses.</p> <p><b>Action 2:</b> Students are encouraged to participate in national events in hardware and poster presentations.</p> <p><b>Action 3:</b> Students are motivated to publish their academic project in reputed journals.</p> <p><b>Action 4:</b> Students are asked to give seminars on the topic of their interest.</p>			
<b>PO11: Project management and finance:</b> Demonstrate knowledge and understanding of the Engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.			
<b>PO11</b>	<b>2.20</b>	<b>2.11</b>	<ul style="list-style-type: none"> <li>• Target is not achieved</li> <li>• Low attainment is noticed for C209 [ECA], C305 [AWP] and C412 [LPICD]</li> </ul>
<p><b>Action 1:</b> Additional hours are to be planned to introduce ultra-low power techniques for C412.</p> <p><b>Action 2:</b> Student clubs are to be engaged in organizing department level activities independently.</p> <p><b>Action 3:</b> Importance of financial management will be discussed during the project work</p> <p><b>Action 4:</b> Activities are to be planned under professional bodies like IETE to improve financial management.</p>			

<b>PO12: Life-long learning:</b> Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.			
<b>PO12</b>	<b>2.20</b>	<b>2.27</b>	<ul style="list-style-type: none"> <li>• Target is achieved</li> <li>• Attainment can be increased further for these courses C202 [EDC], C211 [RVSP], C213 [EMTL] and C305 [AWP].</li> <li>• Need to improve the online resources for continuous learning.</li> </ul>
<p><b>Action 1:</b> More number of practice hours is to be planned in these courses.</p> <p><b>Action 2:</b> Enable students to take up video courses like NPTEL, SWAYAM on recent technologies.</p> <p><b>Action 3:</b> Awareness on latest technologies and trends will be planned through seminars and guest lectures.</p>			
<b>PSO1:</b> Exploit the concepts of VLSI and embedded systems for implementation of real time applications.			
<b>PSO1</b>	<b>2.40</b>	<b>2.46</b>	<ul style="list-style-type: none"> <li>• Target is achieved</li> <li>• Low attainment is noticed in these courses C202 [EDC] and C212 [STLD].</li> <li>• Lack of practical knowledge on embedded systems and advanced tools in VLSI.</li> </ul>
<p><b>Action 1:</b> Additional lab sessions are to be planned on circuit design and analysis for C202 &amp; C212 to improve the practical knowledge.</p> <p><b>Action 2:</b> Training related to latest hardware like Arduino and PIC is to be provided.</p>			
<b>PSO2:</b> Apply advanced algorithms in signal processing, image processing & communication system to solve complex problems			
<b>PSO2</b>	<b>2.40</b>	<b>2.45</b>	<ul style="list-style-type: none"> <li>• Target is achieved</li> <li>• Low attainment is noticed in these courses C205 [SS], C213 [EMTL] and C305 [AWP].</li> <li>• Design and synthesis ability need to be improved.</li> </ul>
<p><b>Action 1:</b> Remedial classes are to be planned to improve problem solving ability for these courses.</p> <p><b>Action 2:</b> Faculty members are advised to encourage students to do mini projects in these areas.</p>			

**Table B.7.3: Actions for improvements of PO attainments for CAYm1 (2018-19)**

The below table B.7.1.1 presents the PO attainments for CAYm3 (2016-17), CAYm2 (2017-18) and CAYm1 (2018-19). Initially, for the assessment year 2016-17, a target level of 2.2 is fixed for PO1 to PO5 as these reflects domain knowledge and skills and an another target of 2.0 is fixed for PO6 to PO12 as these reflects attitude and behaviour. Later, the target level for the assessment year 2017-18 is increased to 2.3 for PO1 to PO5 and 2.1 for PO6 to PO12. Finally, the targets for the assessment year 2018-19 further increased to 2.4 for PO1 to PO5 and 2.2 for PO6 to PO12. As most of the POs have reached the attainment levels, the targets are increased progressively.

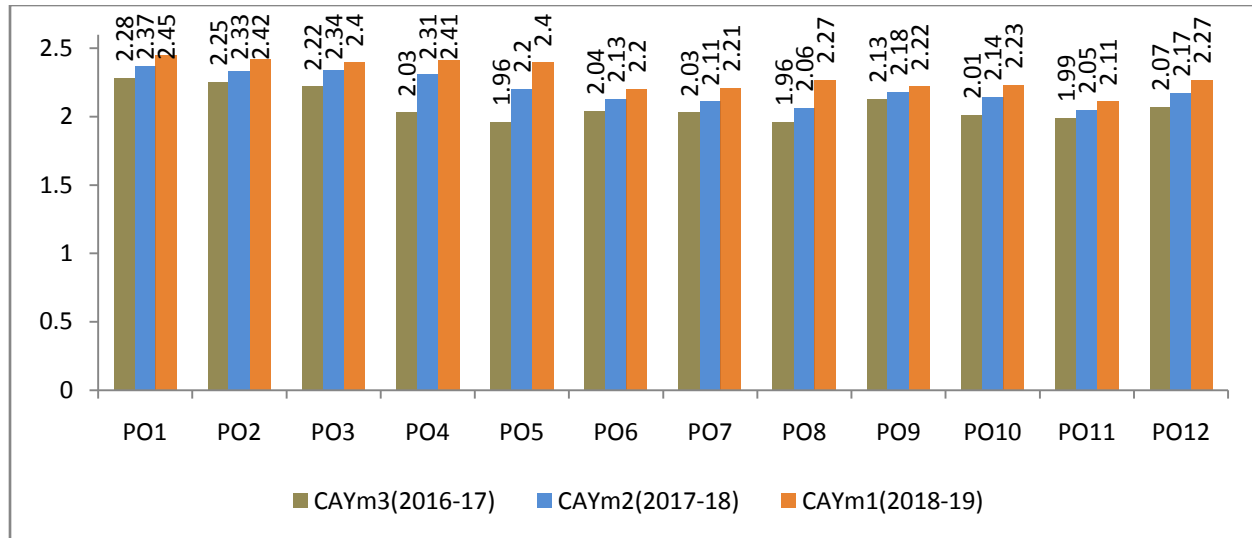
In CAYm3 (2016-17) few POs like PO4, PO5, PO8 & PO11 were not attained. As maximum POs attained the set target levels in CAYm3 (2016-17), the target levels were increased for the next assessment years. The proposed actions made PO4 to attain in CAYm2 (2017-18) and finally all the POs were reached the target level in CAYm1 (2018-19) except PO11. There is a significant improvement in attainment levels for almost all POs with the proposed action plans. The actions that were proposed are identified from the CO gap analysis.

Year	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
<b>CAYm3 (2016-17)</b>	2.28	2.25	2.22	2.03	1.96	2.04	2.03	1.96	2.13	2.01	1.99	2.07
<b>CAYm2 (2017-18)</b>	2.37	2.33	2.34	2.31	2.20	2.13	2.11	2.06	2.18	2.14	2.05	2.17
<b>CAYm1 (2018-19)</b>	2.45	2.42	2.40	2.41	2.40	2.20	2.21	2.27	2.22	2.23	2.11	2.27

**Table B.7.1.1: PO attainments for the CAYm3 (2016-17), CAYm2 (2017-18) and CAYm1 (2018-19)**

The figure B.7.1.1 depicts the continuous improvements in PO attainment levels for CAYm3 (2016-17), CAYm2 (2017-18) and CAYm1 (2018-19) for a given target level as mentioned above.





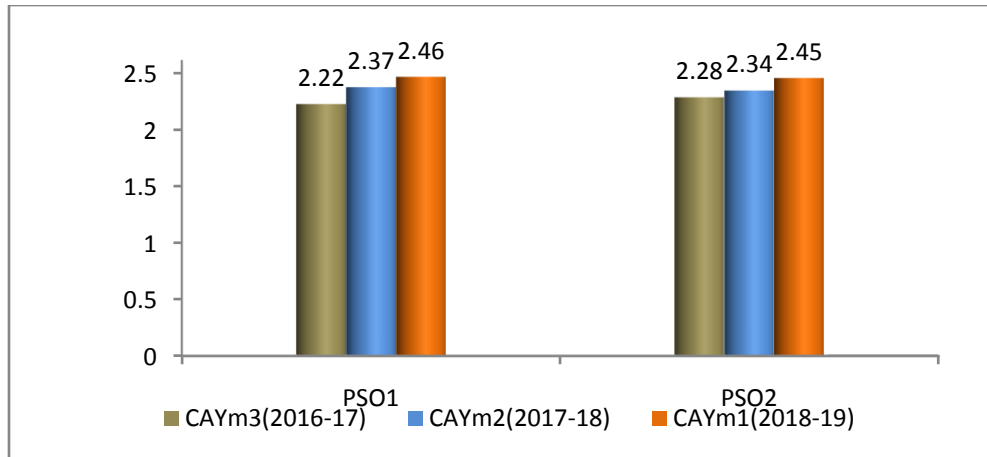
**Figure B.7.1.1: PO attainment levels for the CAYm3 (2016-17), CAYm2 (2017-18) and CAYm1 (2018-19)**

The below table B.7.1.2 presents the PSO attainments for CAYm3 (2016-17), CAYm2 (2017-18) and CAYm1 (2018-19). The PSOs set target levels are 2.2, 2.3 & 2.4 for the assessment years 2016-17, 2017-18, 2018-19 respectively. The PSO attainments are also observed a progressive improvement and reached the respective target levels for all the years, it is mainly due to industry interactions and establishment of additional laboratories.

Year	PSO1	PSO2
<b>CAYm3 (2016-17)</b>	2.22	2.28
<b>CAYm2 (2017-18)</b>	2.37	2.34
<b>CAYm1 (2018-19)</b>	2.46	2.45

**Table B.7.1.2: PSO attainments for the CAYm3 (2016-17), CAYm2 (2017-18) and CAYm1 (2018-19)**

The figure B.7.1.2 depicts the continuous improvements in PSO attainment levels for CAYm3 (2016-17), CAYm2 (2017-18) and CAYm1 (2018-19) for a given target level as mentioned above.



**Figure B.7.1.2: PSO attainment levels for CAYm3 (2016-17), CAYm2 (2017-18), and CAYm1 (2018-19)**

The following measures are proposed for the next assessment year as a part of continuous improvement. Table B.7.1.3 presents the proposed measures for further improvement.

POs	Improvement measures
PO1, PO2, PO3, PO4, PO5	<ul style="list-style-type: none"> <li>• Additional laboratories are proposed to improve the domain engineering knowledge.</li> <li>• Advanced software tools are to be procured to enhance the design and synthesis skills.</li> </ul>
PO6, PO7, PO8, PO9, PO10, PO11, PO12	<ul style="list-style-type: none"> <li>• Societal activities are to be increased for effective communication skills and team work</li> <li>• Academic projects to be focused more on public safety and health.</li> <li>• Frequency of guest lecturers is to be increased on personality development and moral values.</li> </ul>

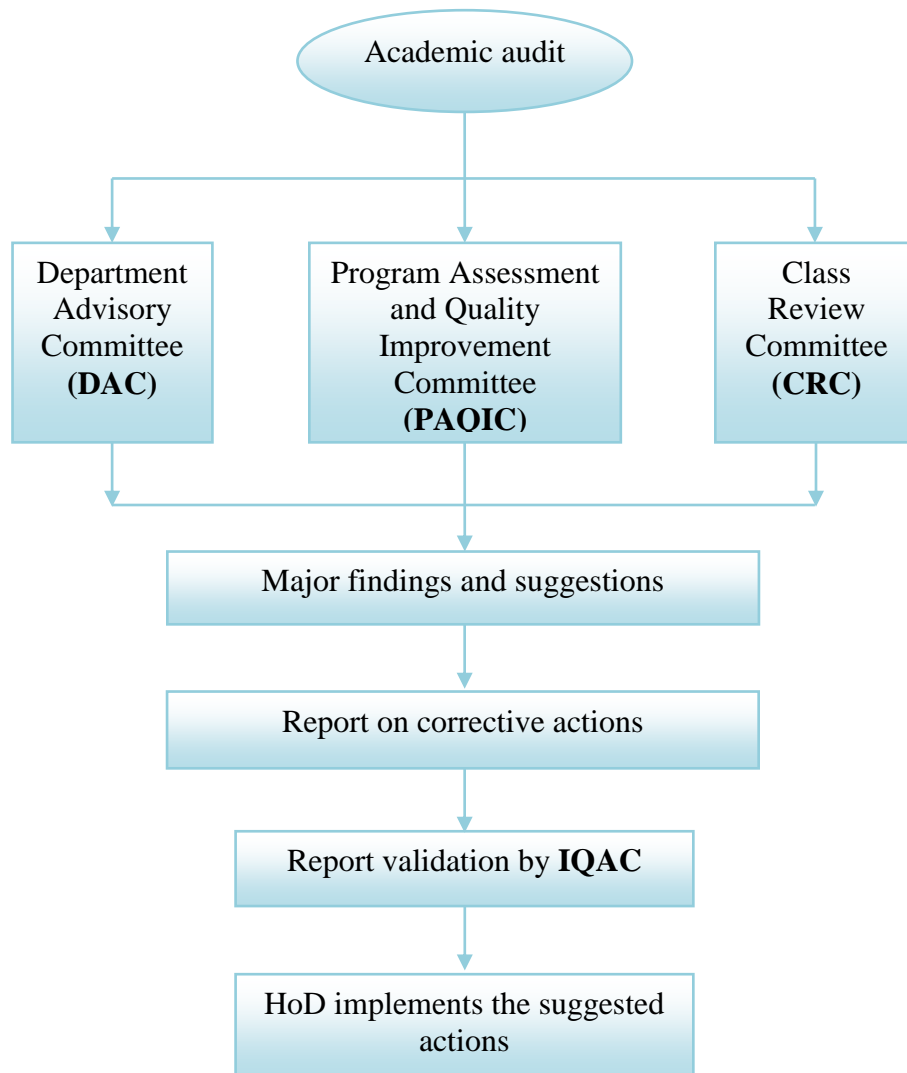
**Table B.7.1.3: Proposed improvement measures for 2019-20**

## 7.2. Academic Audit and Actions Taken thereof during the Period of Assessment (10)

*(Academic Audit system/process and its implementation in relation to Continuous Improvement)*

The academic audit of the department is conducted by Department Advisory Committee (DAC), Program Assessment and Quality Improvement Committee (PAQIC) and Class Review Committee (CRC).

As per the proposed frequency of audit, the Head of the department nominates key persons for the audit. After each audit, the committee submits their suggestions and gaps to the Head of the department and IQAC. Finally, the Head of the department implements the actions recommended by the IQAC.



**Figure B.7.2.1: Process flow of audit committees**

The following table lists out different academic audit committees supervised by IQAC with their responsibilities and audit frequency.

Sl. No	Committees for Academic audit	Responsibilities	Audit frequency
1	<b>Department advisory committee (DAC)</b>	<ul style="list-style-type: none"> <li>• Identification of curriculum gaps by analyzing PO and PSOs attainments.</li> <li>• Checking the R&amp;D activities and research publication quality of the faculty</li> <li>• Monitoring the faculty and students towards attending FDPs, Workshops, Seminars, development activities and research activities Organizing Conferences</li> <li>• Providing guidelines to organize FDPs and conferences.</li> </ul>	Once in a semester
2	<b>Program Assessment and Quality Improvement Committee (PAQIC)</b>	<ul style="list-style-type: none"> <li>• Result analysis of students in internal &amp; external examination.</li> <li>• Identification of slow and fast learners.</li> </ul>	Twice in a semester
		<ul style="list-style-type: none"> <li>• Verification of lab manuals according to the university syllabus.</li> <li>• Laboratory stock and maintenance registers verification.</li> <li>• Checking the lab equipment condition.</li> <li>• Updating the lab software status.</li> </ul>	Yearly twice (semester beginning)
		<ul style="list-style-type: none"> <li>• Verification of quality of mid examination question paper.</li> <li>• Verification of quality of mid examination answers sheets evaluation.</li> </ul>	Twice in a semester
		<ul style="list-style-type: none"> <li>• Collection and analysis of course feedbacks, graduate exit survey, alumni survey, course exit survey from the students.</li> </ul>	Once in a semester
		<ul style="list-style-type: none"> <li>• Analysis of CO attainment, PO and PSO attainments.</li> <li>• Creating OBE awareness through guest lectures and seminars.</li> <li>• Evaluating the implementation of active learning, collaborative learning and project based learning in the classrooms.</li> </ul>	Once in a semester
		<ul style="list-style-type: none"> <li>• Verification of alumni reports.</li> <li>• Suggestions for Students –Industry interaction.</li> <li>• Assessing the student's projects (Mini &amp; Major).</li> </ul>	Once in an year

		<ul style="list-style-type: none"> <li>• Checking the quality improvement of student publications.</li> <li>• Examining the quality of project reports through plagiarism check.</li> </ul>	
3	<b>Class Review Committee (CRC)</b>	<ul style="list-style-type: none"> <li>• Course file verification</li> <li>• Adherence to academic calendar</li> <li>• CRC meetings to verify syllabus status before mid-1 and mid-2.</li> </ul>	Yearly twice (semester beginning)
		<ul style="list-style-type: none"> <li>• Checking the attendance registers to generate the monthly reports.</li> <li>• Monitoring the students with poor attendance.</li> <li>• Inform student parents about less attendance.</li> <li>• Identification of late comers.</li> </ul>	Monthly

**Table B.7.2.1: List of audit committees and responsibilities**

Based on the frequency every audit committee generates a report consisting of the suggestions with corresponding actions. The following table presents actions of audit committee reports for the academic year.

**Actions on audit committee reports for Assessment year CAYm3 (2016-17)**

Sl. No	Committees for Academic audit	Composition	Major findings/ Suggestions	Corrective actions
1	<b>Department Advisory Committee (DAC)</b>	Dr. J. Sudhakar <i>Principal</i> Dr. A. Sessa Rao, <i>Academic Director</i> Dr.Ch. Ramesh babu <i>Head of the Department</i> Dr. Ch. Sumanth Kumar <i>Professor, GITAM</i> Dr. A. Naga Jyothi <i>Professor, VIIT</i> Mr. A. Badrinath <i>DGM, Vizag steel plant</i>	<ul style="list-style-type: none"> <li>• Publications are needed to improve further in reputed journals.</li> <li>• Faculty certification on latest technologies needs to improve.</li> <li>• Need to improve the conference participation.</li> </ul>	<ul style="list-style-type: none"> <li>• Faculty are advised to publish in reputed journals and allowed to take incentives from the management.</li> <li>• Faculty are offered with registration fee waiver by the management in attending the international conferences.</li> </ul>

		Dr. T. S. N. Murthy <i>Assistant professor, JNTUK-UCEV</i> V. Divyavani <i>Alumni(2009admitted), Robert Bosch</i>		
2	<b>Program Assessment and Quality Improvement Committee (PAQIC)</b>	Dr.Ch. Ramesh babu <i>Head of the Department</i> Mrs. T. Sandhya Kumari <i>Project coordinator</i> Mr. P. G. Krishna <i>Department IQAC Coordinator</i> Mrs. S. Malathi <i>Student mentoring coordinator</i> Mrs. B. Manjula <i>Attendance coordinator</i> Mr. K. Sridhar <i>Exam cell coordinator</i>	<ul style="list-style-type: none"> <li>• Satisfactory feedbacks received except for a few subjects</li> <li>• Course survey should be taken immediately after semester end.</li> <li>• Less alumni interaction is observed</li> <li>• More technical activities are required</li> <li>• Quality Improvement of question paper and scheme of valuation</li> <li>• Modification of rubrics for projects</li> <li>• Suggested to maintain diary for project batches</li> <li>• Analyzing the internal and external results</li> </ul>	<ul style="list-style-type: none"> <li>• Counselling sessions and orientation classes.</li> <li>• Course surveys are collected and attainments are calculated.</li> <li>• The concerned faculty has been asked to improve the quality, if guidelines were not followed</li> <li>• Guides were asked to maintain project dairies for their batches.</li> <li>• Weak students are to be provided with remedial classes.</li> </ul>
3	<b>Class Review Committee (CRC)</b>	Dr.Ch. Ramesh babu <i>Head of the Department</i> Mrs. T. Sandhya Kumari <i>Project coordinator</i>	<ul style="list-style-type: none"> <li>• Incomplete syllabus before mid1 exams.</li> <li>• Limit the overwriting in attendance register</li> </ul>	<ul style="list-style-type: none"> <li>• Extra classes will be provided in case of syllabus incompletion</li> <li>• Faculties are informed to</li> </ul>

		Mr. D. Tilak Raju <i>Batch coordinator-2<sup>nd</sup> year</i> Mrs. Ch. Padma vani <i>Batch coordinator-3<sup>rd</sup> year</i> Mr. K. Rajendraprasad <i>Batch coordinator-4<sup>th</sup> year</i> Sakshi singh <i>Student representative-2<sup>nd</sup> year</i> B. Nandini <i>Student representative-3<sup>rd</sup> year</i> S. Latha Sree <i>Student representative-4<sup>th</sup> year</i>	<ul style="list-style-type: none"> <li>• Improvements in CDPs</li> <li>• Increase in late comers.</li> </ul>	minimize the mistakes while writing registers.
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**Table B.7.2.2: Findings and corrective actions for CAYm3 (2016-17)**

**Actions on audit committee reports for Assessment year CAYm2 (2017-18)**

Sl. No	Committees for Academic audit	Composition	Major findings/ Suggestions	Corrective actions
1	<b>Department Advisory Committee (DAC)</b>	Dr. J. Sudhakar <i>Principal</i> Dr. A. Sessa Rao, <i>Academic Director</i> Dr.Ch. Ramesh babu <i>Head of the Department</i> Dr. Ch. Sumanth Kumar <i>Professor, GITAM</i> Dr. A. Naga Jyothi <i>Professor, VIIT</i> Mr. A. Badrinath <i>DGM, Vizag steel plant</i>	<ul style="list-style-type: none"> <li>• Funded projects need to increase</li> <li>• Need to improve the conference participation.</li> <li>• Activities are to be increased to meet the curriculum gaps.</li> </ul>	<ul style="list-style-type: none"> <li>• Faculty are advised to apply for DST projects.</li> <li>• Student seminars are planned during NAVITAS.</li> <li>• Faculty are offered with registration fee waiver by the management in attending the international conferences.</li> </ul>

		Dr. T. S. N. Murthy <i>Assistant professor, JNTUK-UCEV</i> V. Divyavani <i>Alumni(2009admitted), Robert Bosch</i>		
2	<b>Program Assessment and Quality Improvement Committee (PAQIC)</b>	Dr.Ch. Ramesh babu <i>Head of the Department</i> Mrs. T. Sandhya Kumari <i>Project coordinator</i> Mr. P. G. Krishna <i>Department IQAC Coordinator</i> Mrs. S. Malathi <i>Student mentoring coordinator</i> Mrs. B. Manjula <i>Attendance coordinator</i> Mr. S. T. Prasad <i>Examcell coordinator</i>	<ul style="list-style-type: none"> <li>• Inclusion of additional experiments beyond the syllabus</li> <li>• Servicing of lab equipment frequency to be increased Enhancement of lab manuals and lab records.</li> <li>• No special assignments for weak students</li> <li>• Identify inactive and slow learners</li> <li>• Documentation of student achievements</li> <li>• Innovative Teaching-learning methods should be adapted in terms of OBE</li> <li>• Maintain revised Bloom's taxonomy action verbs in mid question paper.</li> </ul>	<ul style="list-style-type: none"> <li>• Lab In-charges are asked to include additional experiments or programs</li> <li>• Maintenance of equipment or purchasing of equipment list should be made by lab in-charges</li> <li>• Lab faculties are instructed to review and modify the manuals content</li> <li>• Special care for slow learners</li> <li>• GATE classes, latest MOOCs, symposiums organized for fast learners</li> <li>• Circular is issued to all faculty members to strictly adhere to Blooms taxonomy in Questions preparing for Assignments and Mid examinations</li> <li>• Dynamic classroom activities are to be incorporated in tutorial sessions.</li> </ul>
3	<b>Class Review Committee (CRC)</b>	Dr.Ch. Ramesh babu <i>Head of the Department</i> Mrs. T. Sandhya Kumari	<ul style="list-style-type: none"> <li>• Delay in producing the course files</li> <li>• Improvements in CDPs</li> </ul>	<ul style="list-style-type: none"> <li>• For a proper cause, time will be extended</li> <li>• Re-audit will be there for every</li> </ul>



		<i>Project coordinator</i> Mr. D. Tilak Raju <i>Batch coordinator-2<sup>nd</sup> year</i> Mrs. Ch. Padma vani <i>Batch coordinator-3<sup>rd</sup> year</i> Mr. K. Rajendraprasad <i>Batch coordinator-4<sup>th</sup> year</i> K. R. Krishna Tulasi <i>Student representative-2<sup>nd</sup> year</i> Sakshisingh <i>Student representative-3<sup>rd</sup> year</i> B. Nandini <i>Student representative-4<sup>th</sup> year</i>	<ul style="list-style-type: none"> <li>• Increase in late comers.</li> <li>• Expected list of detained students</li> <li>• Student publications are to be improved</li> </ul>	re submission <ul style="list-style-type: none"> <li>• Counselling of late comer students by the batch coordinator/class in-charge</li> <li>• Communicate parents for less attendance through counsellor</li> <li>• Instructions were given to publish their project work in good journals.</li> </ul>
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**Table B.7.2.3: Findings and corrective actions for CAYm2 (2017-18)**

**Actions on audit committee reports for Assessment year CAYm1 (2018-19)**

Sl. No	Committees for Academic audit	Composition	Major findings/ Suggestions	Corrective actions
1	<b>Department Advisory Committee (DAC)</b>	Dr. J. Sudhakar <i>Principal</i> Dr. A. Sessa Rao, <i>Academic Director</i> Dr.Ch. Ramesh babu <i>Head of the Department</i> Dr. Ch. Sumanth Kumar <i>Professor, GITAM</i> Dr. A. Naga Jyothi <i>Professor, VIIT</i> Mr. A. Badrinath <i>DGM, Vizag steel plant</i>	<ul style="list-style-type: none"> <li>• Publications are needed to improve further in reputed journals.</li> <li>• Suggested to organize a national conference.</li> <li>• Faculty certification on latest technologies needs to improve.</li> <li>• Student publications are to be increased.</li> <li>• Encourage students to take</li> </ul>	<ul style="list-style-type: none"> <li>• Faculty are advised to publish in reputed journals and allowed to take incentives from the management.</li> <li>• Faculty are announced incentives for outstanding performance in NPTEL courses on AI, ML and DS courses.</li> <li>• Students are announced with cash awards for successful completion in online courses.</li> </ul>

		Dr. T. S. N. Murthy <i>Assistant professor, JNTUK-UCEV</i> V. Divyavani <i>Alumni(2009admitted), Robert Bosch</i>	up NPTEL courses on latest technologies.	
2	<b>Program Assessment and Quality Improvement Committee (PAQIC)</b>	Dr.Ch. Ramesh babu <i>Head of the Department</i> Mrs. T. Sandhya Kumari <i>Project coordinator</i> Mr. P. G. Krishna <i>Department IQAC Coordinator</i> Mrs. S. Malathi <i>Student mentoring coordinator</i> Mrs. B. Manjula <i>Attendance coordinator</i> Mr. N. V. Chaitanya <i>Examcell coordinator</i>	<ul style="list-style-type: none"> <li>• Conduct faculty wise seminars on OBE</li> <li>• Active learning strategies are to be incorporated</li> <li>• Mistakes in CO-PO mapping</li> <li>• PO attainment scale up strategy</li> <li>• Student technical activity need to be increased.</li> </ul>	<ul style="list-style-type: none"> <li>• Corrections were made accordingly in CO-PO table.</li> <li>• Flipped classroom strategy was implemented.</li> <li>• Action plans for low PO attainments.</li> </ul>
3	<b>Class Review Committee (CRC)</b>	Dr.Ch. Ramesh babu <i>Head of the Department</i> Mrs. T. Sandhya Kumari <i>Project coordinator</i> Mr .D. Tilak Raju <i>Batch coordinator-2<sup>nd</sup> year</i> Mrs. Ch. Padma vani <i>Batch coordinator-3<sup>rd</sup> year</i> Mr. K. Rajendraprasad <i>Batch coordinator-4<sup>th</sup> year</i> D. Vinnesha <i>Student representative-2<sup>nd</sup> year</i>	<ul style="list-style-type: none"> <li>• Less pass percentage is observed for SS and STLD.</li> <li>• Incomplete syllabus before mid1 exams.</li> <li>• Limit the overwriting in attendance register</li> <li>• More lab practice hours to be provided for lab courses</li> </ul>	<ul style="list-style-type: none"> <li>• Extra teaching hours are planned</li> <li>• Faculties are informed to minimize the mistakes while writing registers.</li> <li>• Lab is open to all students even after the regular timings and students utilizing this facility.</li> </ul>

		K. R. Krishna Tulasi <i>Student representative-3<sup>rd</sup> year</i> Sakshi singh <i>Student representative-4<sup>th</sup> year</i>		
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**Table B.7.2.4: Findings and corrective actions for CAYm1 (2018-19)**

The corrective actions proposed by the committees lead to certain improvements which are presented in the table B.7.2.5.

Year	Improvements
2018-19	<ul style="list-style-type: none"> <li>• Student publication in journals is increased.</li> <li>• Senior faculty members presented seminars on OBE.</li> <li>• National conference was planned to organize.</li> <li>• A technical activity like VISTA2K18 was organized.</li> <li>• Established NPTEL local chapter.</li> </ul>
2017-18	<ul style="list-style-type: none"> <li>• Dynamic classroom activities, collaborative learning activities are incorporated.</li> <li>• Enhancement in the quality of teaching is observed.</li> <li>• Questions in mid examinations covered all the portion of syllabus.</li> <li>• Project diaries were given for each batch and verified by respective guide.</li> <li>• Established the other laboratories like Embedded &amp; IoT and advanced VLSI design.</li> </ul>
2016-17	<ul style="list-style-type: none"> <li>• In of additional programs on MATLAB and Mentor graphics were added to labs.</li> <li>• Followed the Bloom's taxonomy in the questions for mid examination.</li> <li>• In time completion of syllabus and course files.</li> <li>• Improved the results of weak students</li> </ul>

**Table B.7.2.5: Audit committee improvements**

### 7.3. Improvement in Placement, Higher Studies and Entrepreneurship (10)

*Assessment is based on improvement in:*

- *Placement: number, quality placement, core industry, pay packages etc.*
- *Higher studies: performance in GATE, GRE, GMAT, CAT etc., and admissions in premier institutions.*
- *Entrepreneurs.*

#### A. Improvement in Placement numbers, quality, core hiring industry and pay packages (5)

The placement data of the program observes a progressive growth in terms of offered packages. Campus recruitment training helps every student in adapting the latest skills demanded by the industry. The following data tables represent the number of placements for a given academic year. Table B.7.3.1 presents the placements, higher studies and entrepreneur data and it is observed an average placement of 84.33% for the three academic years. Table B.7.3.2 provides the quality of placements with an average salary package of 2.1 LPA for the academic year 2018-19, 2.5 & 2.3 LPA for academic year 2017-18 and academic year 2016-17 respectively. Table B.7.3.3 provides placement data for the academic year 2018-19 observed 80% of placements with a maximum package of 3.5 LPA. Table B.7.3.4 provide placement data for the academic year 2017-18 observed 84% of placements with a maximum package of 4.0 LPA. Table B.7.3.5 provides placement data for the academic year 2016-17 observed 89% of placements with a maximum package of 3.2 LPA. The following table summarizes the placement data along with the number of students admitted to higher studies and entrepreneur data.

Item	CAYm1 (2018-19)	CAYm2 (2017-18)	CAYm3 (2016-17)
Total No. of final year students (N)	184	172	152
No. of students placed in Companies or Government Sector (X)	144	137	127
No. of students admitted to higher studies with valid qualifying scores (GATE or equivalent State or National Level Tests, GRE, GMAT etc) (Y)	4	6	7
No. of students turned entrepreneurs in Engineering / Technology (Z)	0	2	1

$X+Y+Z =$	148	145	135
Placement Index : $(X+Y+Z)/N$	0.80	0.84	0.89
Average placement in percentage = $(P1 + P2 + P3)/3 * 100$	84.33		

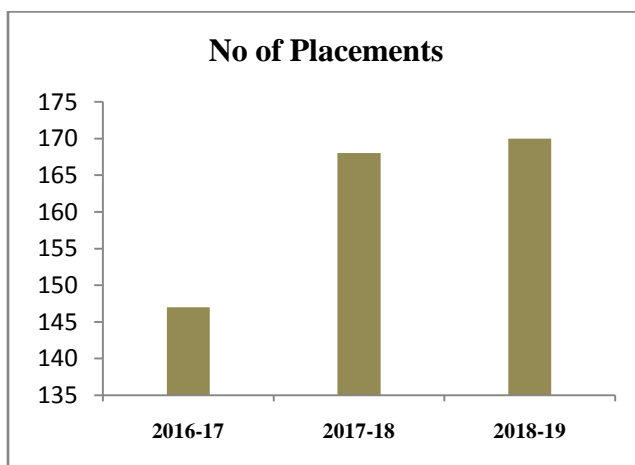
**Table B.7.3.1: Placement, higher education and entrepreneurs details**

The placement analysis is depicted in the following table with minimum and maximum salaries offered. It is noticed that the average salary offered for the academic year 2019-20 shows that improvement in the quality of placements. It is observed from table B.7.3.2, that there is an improvement in number of placements and number of students placed.

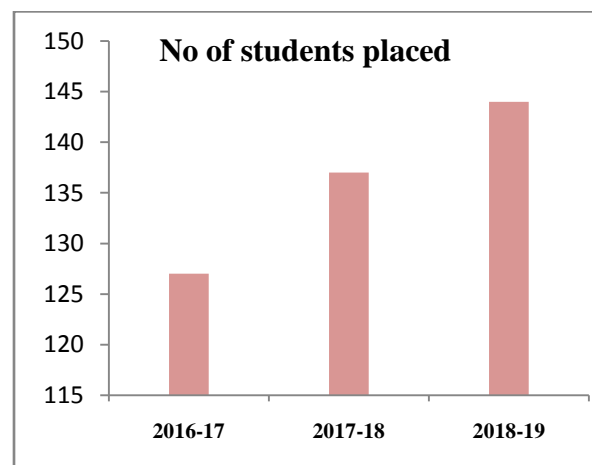
Year	No of Placements	No of students placed	Maximum Salary (LPA)	Minimum Salary (LPA)
<b>CAYm3 (2016-17)</b>	147	127	3.2	1.0
<b>CAYm2 (2017-18)</b>	168	137	4.0	1.2
<b>CAYm1 (2018-19)</b>	170	144	3.5	1.0

**Table B.7.3.2: Placement details**

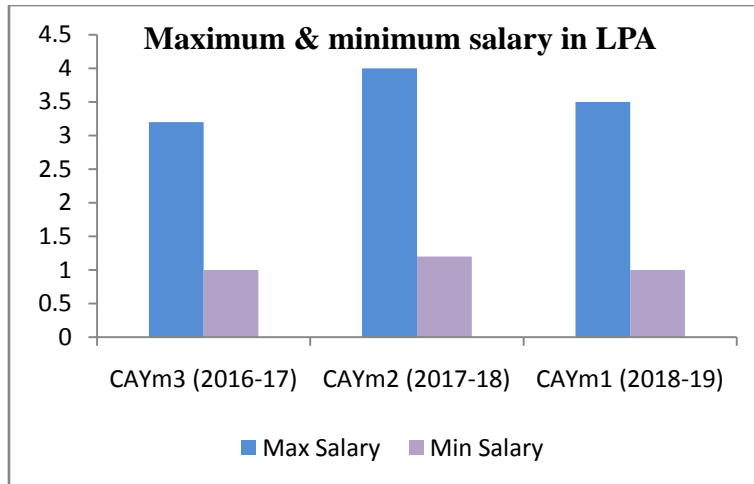
Figure B.7.3.1 shows the improvement in the number of placements for the academic years 2016-17, 2017-18 and 2018-19. Figure B.7.3.2 shows the improvement in the number of students placed for the academic years 2016-17, 2017-18 and 2018-19. Figure B.7.3.3 shows the improvement in the maximum and minimum salaries offered in campus placements for the academic years 2016-17, 2017-18 and 2018-19.



**Figure B.7.3.1: Improvement in number of placements**



**Figure B.7.3.2: Improvement in number of students placed**



**Figure B.7.3.3: Maximum and minimum salary packages**

This year notices the remarkable placements with MNCs like Capgemini, Infosys, Wipro, TCS and other companies. The following table lists the number of placements and salary offered for the academic year 2018-19.

Sl. No	Name of the company	No of placements	Salary offered (LPA)
1	CAPGEMINI	14	3.5
2	HCL	1	3.5
3	INFOSYS	4	3.5
4	TCS	3	3.5
5	WIPRO	2	3.5
6	TECH MAHINADRA	1	3.3
7	QSPIDERS/JSPIDERS	4	3.2
8	REDCARPET	1	3.2
9	NET2SOURCE	1	3.0
10	PATHFRONT	13	3.0
11	HCL (BPO)	1	2.6
12	MPHASIS	2	2.6
13	IBEON INFOTECH	14	2.4
14	GLENWOOD SYSTEMS	2	2.1
15	MOURI TECH	1	2.1
16	SILICON LAB	1	2.0
17	VEE TECHNOLOGIES	2	1.8
18	THINKSYNQ	62	1.6
19	I PROCESS	21	1.5

20	ASTRAZENECA	1	1.5
21	GOWTHAM SCHOOL	1	1.5
22	IMERIT TECHNOLOGIES	1	1.5
23	MIRACLE	1	1.5
24	TECHMBPS	15	1.5
25	SUNRISE HIGH SCHOOL	1	1.0

**Table B.7.3.3: Placement data for the year 2018-19**

MNC companies like Capgemini, Infosys, IBM and others offered placements with good packages. It is noticed an increase in number of placements during this year. The following table lists the number of placements for the 2017-18.

Sl. No	Name of the company	No of placements	Salary offered (LPA)
1	MPHASIS	1	4.0
2	IBM	1	3.6
3	TCS	5	3.6
4	ACCENTURE	1	3.5
5	ANKUR LAMPS AND LIGHTING PRIVATE LIMITED	2	3.5
6	MOURITECH	1	3.5
7	IBM	10	3.2
8	INFOSYS	10	3.2
9	VEE TECHNOLOGIES	10	3.2
10	CAMPGEMINI	20	3.1
11	COGNIZANT(CTS)	1	3.1
12	FACE	12	2.6
13	THINKTEL SOLUTIONS INDIA PVT LTD	21	2.5
14	AMAZON	1	2.4
15	ASAP	1	2.4
16	CONDUENT	1	2.2
17	MICROMAX	12	2.0
18	VDART SOFTWARE SERVICES	2	2.0
19	KARVY	4	1.9
20	SUTHERLAND	39	1.8
21	LABTECH INNOVATIONS	1	1.8
22	TECH MAHINDRA	3	1.7
23	AIRASIA INDIA LTD	1	1.5

24	CONCENTRIX	1	1.5
25	DAKSH CONCENTRIX	1	1.5
26	GLOBAL LOGIC TECHNOLOGIES	1	1.5
27	RINL VIZAG STEEL PLANT	1	1.5
28	VISTEON TECHNICAL SERVICES AND LTD	1	1.5
29	ARIHANT MAXSELL TECHNOLOGIES	1	1.4
30	HYOSEONG ELECTRIC CO., LTD	1	1.3
31	CPGC PRIVATE LIMITED	1	1.2

**Table B.7.3.4: Placement data for the year 2017-18**

Many prestigious companies like Tech Mahindra, Capgemini, HCL, Wipro and many MNCs conducted campus drive with good packages during this year. The following table lists the number of placements for the academic year 2016-17.

Sl. No	Name of the company	No of placements	Salary offered (LPA)
1	TECH MAHINDRA	32	3.25
2	CAPGEMINI	16	3
3	GENPACT	3	2.4
4	CONCENTRIX	1	2.4
5	EXPERIS IT	1	2.1
6	DELL CAMPASSADOR	1	2
7	HCL	50	2
8	POLARIS	2	2
9	SOFTCELL TECHNOLOGIES LIMITED	1	2
10	SUTHERLAND	25	2
11	WIRPO	1	2
12	HGS	9	1.73
13	SRIVARI ENTERPRISES	5	1.08

**Table B.7.3.5: Placement data for the year 2016-17**



**B. Improvement in Higher Studies admissions for pursuing PhD in premier institutions (3)**

The students of ECE department are always prepared for higher studies by conducting GATE classes and motivational guidance towards entrepreneur development through guest lectures. The following table present the details regarding higher studies for the CAYm3 (2016-17), CAYm2 (2017-18) and CAYm1 (2018-19).

Sl. No	Year	Registration number	Name	Higher studies admission details (M.S /M.Tech/ MBA/PhD)
1	CAYm3 (2016-17)	13NM1A04A1	Sukanyasalapu	Electrical and computer engineering (M.S), University of Windsor
2		14NM5A0413	Kondapu Santhu Sravani	VLSI (M.Tech), BITS
3		13NM1A04B8	Tokachichu Ysaswini	VLSISD (M.Tech) ,BITS
4		13NM1A0412	B. Yoga Nandini Aparna	MBA, Jaipur National University
5		13NM1A0455	Kotra Sandhya Rani	VLSI Design & Embedded Systems (M.Tech), GVP
6		14NM5A0403	Balireddy Urmila	VLSI ,BITS
7		14NM5A0418	Putta Kavya	VLSI & ES (M.Tech), GVP
8	CAYm2 (2017-18)	14NM1A0416	Bonda Madhuri	VLSI & ES (M.Tech), GVP
9		14NM1A0491	Rajeshwari Sai Aishwarya Puppala	Computer science (M.S), University of Missouri Kansas city
10		14NM1A04A4	S. Varaha Sharvani	MBA, AU
11		14NM1A04B7	ManaswiniVedula	Computer science (M.S), University of Missouri Kansas city
12		14NM1A04C8	Dasari Lakshmi Priyanka	MBA, NSRIT
13	14NM1A04H0	J. V. Naga Sasi Moulika	MBA, AU	
14	CAYm1 (2018-19)	15NM1A0416	Bugatha Leela	VLSI & ES (M.Tech), VIET
15		15NM1A0435	Gollavilli Revathi	Communication and signal processing (M.Tech), GVP
16		15NM1A0453	Kanuri Mamatha	MBA, NIST
17		15NM1A0494	P.Madhu Mounika	VLSI & ES (M.Tech), GVP

**Table B.7.3.6: Higher studies details for the CAYm3 (2016-17), CAYm2 (2017-18) and CAYm1 (2018-19)**

### C. Improvement in number of Entrepreneurs (2)

The following table present the details regarding entrepreneurship for the CAYm3 (2016-17), CAYm2 (2017-18) and CAYm1 (2018-19).

Sl. No	Year	Registration number	Name	Entrepreneur details
1	CAYm3 (2016-17)	13NM1A0427	D. Dhanalakshmi	Sunrise, Pre school
2	CAYm2 (2017-18)	14NM1A0485	Pentakota mounika	Dance school
3		14NM1A04H3	Y. Sahithi	First toes, Pre school

**Table B.7.3.7: Entrepreneurs details for the CAYm3 (2016-17), CAYm2 (2017-18) and CAYm1 (2018-19)**

### 7.4. Improvement in the quality of students admitted to the program (10)

*(Assessment is based on improvement in terms of ranks/score in qualifying state level/national level entrances tests, percentage marks in Physics, Chemistry and Mathematics in 12<sup>th</sup> Standard and percentage marks of the lateral entry students.)*

The following table B.7.4 depicts the quality of students admitted into the ECE program. The EAMCET and ECET qualified students joined the program with a good academic merit in 12<sup>th</sup> standard /intermediate marks. The opening & closing ranks along with the average percentage is mentioned in the table.

Item	Particulars	CAY (2019-20)	CAYm1 (2018-19)	CAYm2 (2017-18)	CAYm3 (2016-17)
<b>Andhra Pradesh Engineering and Medical Common Entrance Test-EAMCET</b>	No. of Students admitted	153	162	171	165
	Opening Score/Rank	29602	16975	11617	13992
	Closing Score/Rank	125667	129723	136864	124182
<b>Andhra Pradesh Engineering Common</b>	No. of Students admitted	18	36	32	29

<b>Entrance Test-ECET</b>	Opening Score/Rank	305	212	146	56
	Closing Score/Rank	5852	3489	4671	5590
<b>Average CBSE/Any other Board Result of admitted students (Physics, Chemistry &amp; Mathematics)</b>		93.12	91.37	91.23	91.92

**Table B.7.4: Quality of students admitted to the program**

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<b>Criterion 8</b>	<b>First Year Academics</b>	<b>50 M</b>
8.1	First Year Student Faculty Ratio (FYSFR)	5M
8.2	Qualification of Faculty Teaching First Year Common Courses	5M
8.3	First Year Academic Performance	10M
8.4	Attainment of Course Outcomes of First Year Courses	10M
8.5	Attainment of Program Outcomes for first year courses	20M

<b>Criterion 8</b>	<b>First Year Academics</b>	<b>50M</b>
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### 8.1. First Year Student Faculty Ratio (FYSFR) (5)

Data for first year courses to calculate the FYSFR

Year	Number of students (approved intake strength) N	Number of faculty members (considering fractional load) F	FYSFR(N/F)	Assessment = $(5 \times 20) / \text{FYSFR}$ (Limited to Max. 5)
CAYm2 (2017-18)	660	43	15	5
CAYm1 (2018-19)	660	43	15	5
CAY (2019-20)	660	41	16	5
<b>Average</b>			<b>15</b>	<b>5</b>

**Table B.8.1: First Year Student Faculty Ratio**

\*Note: If FYSFR is greater than 25, then assessment equal to zero.

### 8.2. Qualification of Faculty Teaching First Year Common Courses (5)

(Assessment of qualification =  $(5x + 3y) / \text{RF}$ ,  $x$  = Number of Regular Faculty with Ph.D.,  $y$  = Number of Regular Faculty with Post-graduate qualification  $\text{RF}$  = Number of faculty members required as per SFR of 20:1, Faculty definition as defined in 5.1)

Year	X (Number of Regular Faculty with Ph.D.)	Y (Number of Regular Faculty with PG Qualification)	RF (Number of Faculty Members required as per SFR of 20:1)	(Assessment of faculty qualification) $(5x + 3y) / \text{RF}$
CAYm2 (2017-18)	10	43	33	5.00
CAYm1 (2018-19)	14	42	33	5.00
CAY (2019-20)	10	42	33	5.00
<b>Average assessment</b>	<b>5.0</b>			

**Table B.8.2: Faculty Qualifications**

### 8.3 First Year Academic Performance (10)

*(Academic Performance = ((Mean of 1st Year Grade Point Average of all successful Students on a 10 point scale) or (Mean of the percentage of marks in First Year of all successful students/10)) x (number of successful students/number of students appeared in the examination) Successful students are those who are permitted to proceed to the second year.)*

The curriculum for first year for all branches of engineering is followed as per the syllabus designed by the affiliating University JNTUK, Kakinada. Each course coordinator along with the respective faculty members discusses the aspects of the course curriculum and defines course objectives and outcomes in accordance with the University Regulations. Consequently, the Course Delivery Plan is prepared, approved and followed. This process is continuously monitored to achieve better academic performance from the faculty as well as students.

We have proved our strength in the domain of studies which is shown in our academic track record. Speaking of our strengths in 1<sup>st</sup>B.Tech education, we have been the toppers among the JNTUK affiliated colleges five times out of eight batches admitted so far. The other three times we stood in 3rd, 4th & 5th positions.

The Year wise academic performance of First-Year students is given below

Academic Performance	2019-20	2018-19	2017-18
Mean of CGPA of all successful students (X)	7.73	7.52	7.72
Total number of successful students (Y)	162.00	170.00	163.00
Total number of students appeared in the examination (Z)	162.00	171.00	165.00
API=X*(Y/Z)	7.72	7.47	7.63
<b>Average API</b>	<b>7.61</b>		

**Table B.8.3: Year wise academic performance**

### 8.4. Attainment of Course Outcomes of First Year Courses (10)

#### 8.4.1. Describe the assessment processes used to gather data upon which the evaluation of course outcomes of first year is based (5)

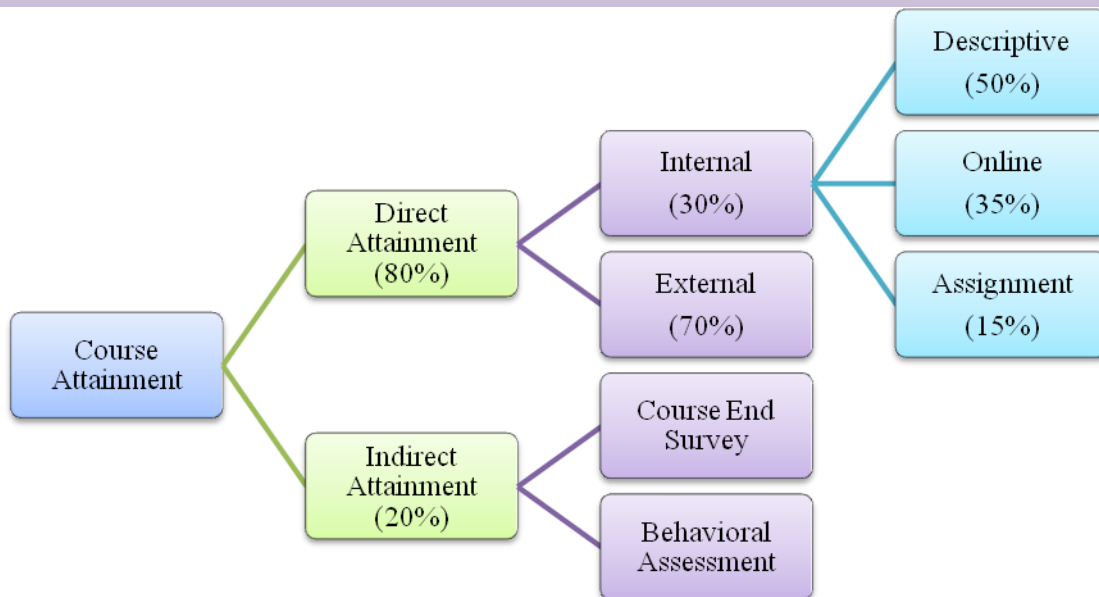
*(Examples of data collection processes may include, but are not limited to, specific exam questions, laboratory tests, internally developed assessment exams, oral exams assignments, presentations, tutorial sheets etc.)*

Course Outcomes are narrower statements that describe and define what students are expected to know and be able to do at the end of each course. They are the measurable parameters which evaluate each student's performance for each course. They cater to the knowledge, skills and behavior that students acquire in their journey/graduation through the course. Semester-wise assessment is done through one or more methods, identifying, collecting and preparing data to assess the performance of the Course Outcomes (COs). The methods are classified into two types: Direct methods and Indirect methods.

#### A. List of assessment processes (1)

**Direct methods:** This method reflect knowledge and skill levels of students through assessment tools such as class tests, mid exams, assignments, semester exams, seminars, laboratory assignments and examinations. These methods offer understanding about what students know and/or can do and provide evidence of levels of students' learning.

**Indirect methods:** This method includes course end survey and faculty assess the student's behavior. These components are utilized to gather further awareness about students' learning abilities and disabilities. Figure 8.4.1a and the Table 8.4.1a represent different methods of the assessment process which reflect attainment levels of the course outcomes, weightage factors and frequency of the assessment cycle.



**Figure B 8.4.1.a: Course attainment process with their weightages**

**B. The relevance of assessment tools used (4)****(i) CO Assessment Process for Theory Courses**

The Internal assessment of theory courses consists of two mid examinations and two online quiz examinations which are conducted as per the calendar released by JNTUK. For every mid examination, three assignments will be given.


Type of Assessment	Course Assessment and Evaluation Method	Assessment Frequency	Description	Weightage for Assessment	Weightage for CO Attainment
Direct Assessment	Internal Mid Examination	Twice in a Semester	<ul style="list-style-type: none"> <li>The internal assessment of the theory course is based on the two mid exams conducted each semester according to the academic calendar set by the University.</li> <li>Each theory course examination should be set for a maximum of 15 marks in descriptive pattern.</li> <li>The respective faculty prepares question paper as per the course outcomes for the relevant course by following the Blooms taxonomy and forwards the same to the Examination Cell.</li> <li>Student performance is assessed in the mid exams according to the scheme of evaluation and key prepared by the respective course teacher.</li> </ul>	30%	80%
	Online Quiz	Twice in a semester	<ul style="list-style-type: none"> <li>The online quiz for the theory courses is conducted along with the descriptive mid examination each semester by the University.</li> <li>The online quiz examination consists of 20 objective questions for a maximum of 10 marks.</li> <li>Quiz marks are recorded for assessing the attainment of COs</li> </ul>		
	Assignments	Six in a	<ul style="list-style-type: none"> <li>Assignment is a metric used to assess students'</li> </ul>		



		semester (3 per each mid)	<p>analytical and problem-solving abilities.</p> <ul style="list-style-type: none"> <li>• Assignment questions are prepared for each topic/unit in the course.</li> <li>• Course related tasks are assigned to each student.</li> <li>• Marks are assigned depending on their performance &amp; innovation in solving/deriving the problems.</li> <li>• The assignment works submitted by students are assessed towards CO attainment.</li> </ul>		
	Semester End Examination	Once in a semester	<ul style="list-style-type: none"> <li>• At the end of each semester, external examination is conducted for a maximum of 70 marks by the University.</li> <li>• End examination is set in descriptive pattern generally satisfying the all course outcomes.</li> </ul>	70%	
Indirect Assessment	Course Exit Survey	End of Semester	<ul style="list-style-type: none"> <li>• On completion of each semester, feedback is obtained from the students for the courses they have attended.</li> <li>• Recorded for assessing the attainment of COs</li> </ul>		20%
	Behavioral Assessment	Throughout the Semester	<ul style="list-style-type: none"> <li>• Each student is assessed based on participation and performance in Technical, Social Events &amp; Extra-curricular activities</li> </ul>		

**Table B 8.4.1.a: Assessment tools for the calculation of course outcomes**

## Sample Mid - I Question Paper

 **VIGNAN'S INSTITUTE OF ENGINEERING FOR WOMEN**  
(Kapujaggarajupeta, Duvvada, Visakhapatnam-530 049)  
(I- B.Tech I Sem, Regulations: R16)

**SET-1**

**Mid Term Examination-I**  
(I- B.Tech I Sem, Regulations: R16)

Course Name: **APPLIED PHYSICS** Max Time: **1 ½ Hrs.**  
Branches: **CSE& IT** Max Marks: **15**  
Faculty: **Dr. Chandra Sekhar Beera** Date: **25.10.2016**


**CO: Course Outcome no. (1-6), LEVEL: Revised Bloom's Taxonomy level no. (1-6)**

Answer All Questions **3x5=15 M**

CO	LEVEL	Q.No	QUESTIONS	
CO1	1a: K2	01	a) Distinguish between Interference and Diffraction.	2M
	1b: K3		b) Demonstrate the construction and principle of Michelson's Interferometer. In what circumstances is the compensating plate is essential.	3M
CO2	2a: K2	02	a) Discuss in detail Fraunhofer diffraction due to double slits.	3M
	2b: K3		b) A telescope of an objective of diameter 3 meters, calculate the smallest angular separation of two stars which can be resolved by the mean wavelength of light 6000 Å.	2M
CO3	3a: K2	03	a) Discuss the various methods of pumping mechanisms in LASERS.	3M
	3b: K3		b) Explain the importance of Optical cavity resonator in a LASER.	2M

\* K1 (R): Remembering, K2 (U): Understanding, K3 (P): Applying, \* K4 (A): Analyzing, K5 (E): Evaluating, K6 (C): Creating.

## Sample Assignment

 **VIGNAN'S INSTITUTE OF ENGINEERING FOR WOMEN**  
(Kapujaggarajupeta, Duvvada, Visakhapatnam-530 049)  
**Assignment-I**  
(I- B.Tech I Sem, Regulation: R16)

Course Name: **APPLIED PHYSICS** 13/10/2016  
Branch: **ECE, CSE, IT**

**CO: Course Outcome no. (1-6), LEVEL: Revised Bloom's Taxonomy level no. (1-6)**

Answer All Questions

CO	Level	Unit	Q.No	Questions	
CO1	K1	1	01	Examine the construction and principle of Michelson's Interferometer. In what circumstances is the compensating plate is essential.	5M
CO2	K3	2	02	Discuss in detail Fraunhofer diffraction due to double slits.	5M
CO3	K3	3	03	With a neat diagram, discuss the construction and working of Ruby LASER.	5M

\* K1 (R): Remembering, K2 (U): Understanding, K3 (P): Applying,  
\* K4 (A): Analyzing, K5 (E): Evaluating, K6 (C): Creating.

## Behavioral Assessment

Students after entering into a professional program have to undergo a lot of qualitative change in terms of their behavior. During their four year stay at the institution this aspect has been taken seriously as a part of students' internal assessment. Strictly adhering to the curriculum prescribed by the University at the first-year level, the department of B S & H simultaneously follows a system of continuous assessment of the student by measuring and estimating their behavioral aspects in order to improve their attitude, values and behavior with respect to Program Outcomes. These aspects consist of

1. Social responsibility (PO 6)
2. Environmental consciousness (PO 7)
3. Ethical values (PO 8)
4. Team work (PO 9)
5. Communication Skills (PO 10)
6. Leadership skills (PO11)

Some activities are arranged to measure these aspects in students throughout the first year course work. They are:

- Interactive sessions by renowned personalities in the fields of social work, literature, movies, arts and industry.
- Social service activities such as conducting health camps, blood camps, eye-checkup camps; visits to near-by villages for service; visits to orphanages and under privileged places to offer the helping hand by kind and cash;
- Clean & Green activities consisting of Swatch Bharat; Plantation programs; promoting eco-friendly measures in religious and social occasions; Beach cleaning activity
- Sending students to industries and making them aware of their role as engineer
- Organizing picnics to promote harmonious social culture and togetherness
- Celebration of important days of national significance by involving the student teams right from the planning stage to execution stage in conducting those events
  - Celebrating all the religious and cultural festivals
  - Through Language Club essay writing competitions, poster presentations, group discussions and debates to improve their social awareness, expression capacities and confidence levels.

- Constant mentoring and counseling through Class Coordinator and Counselor system in sorting out their emotional and academic issues.
- Encouraging the students to actively participate in games & sports inside and outside the college to boost up their physical fitness and morale.

#### Rubric for Assessment of Behavioral Aspects

	<b>Low – (1)</b>	<b>Moderate – (2)</b>	<b>High – (3)</b>
<b>Social Responsibility</b>	No active participation	Able to participate but poor performance	Very active participation and performance
<b>Environmental Consciousness</b>	Low awareness levels	Adequate level of awareness	Well informed and putting into practice
<b>Ethical Values</b>	Ethical concerns are missing	Flexible attitude towards ethical values	Full appreciation of ethical values and following them
<b>Team Work</b>	Uneven role assignment and limited awareness about responsibilities	Fair distribution of workload and respect towards the team	Clearly defined roles & increased level of clarity, cooperation and respect
<b>Communication Skills</b>	Inadequate	adequate	Very effective
<b>Leadership Traits</b>	Passive	sufficient	Proactive and active listener

**Table B.8.4.1.b: Rubric for behavioral assessment**

Based on the level of *participation and performance* in the above-mentioned year long activities students will be assessed. Lowly scored students will be identified.

#### **Corrective and Transformation Measures:**

- Bringing them to the front in the next activity;
- Motivating them;
- Inspiring them;
- Taking personal interest in them and encouraging them to see others and read literature;
- Empathizing with their social & economic concerns and slowly changing their focus towards positivity
- Changing group composition within the section and mixing with other sections and branches

(ii) CO Assessment Process for Laboratory Courses

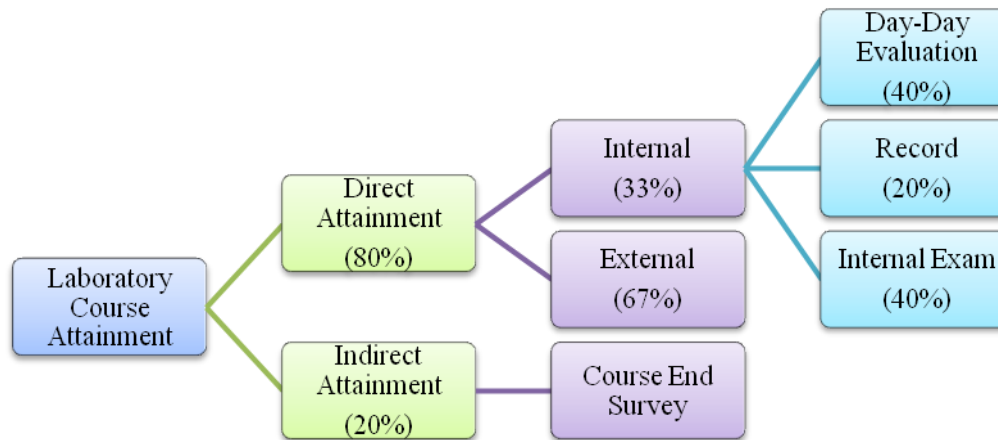


Fig. B 8.4.1b: CO assessment process for Laboratory with their weightages

Type of Assessment	Course Assessment and Evaluation Method	Description	Weightage for Assessment	Weightage for CO Attainment
Direct Assessment	Internal	<ul style="list-style-type: none"> <li>Lab Assignment/Experiment is a qualitative performance assessment tool designed to assess students' practical knowledge and problem-solving skills.</li> <li>Internal assessment of students for laboratory courses is based on continuous evaluation of laboratory experiment work done by the students, their record work and performance in</li> </ul>	33%	80%

		<p>the internal examination.</p> <ul style="list-style-type: none"> <li>• Internal examinations are conducted by the respective faculty members.</li> <li>• Each laboratory course shall have a maximum of 25 internal marks.</li> <li>• The marks distribution for the laboratory courses is as follows <ul style="list-style-type: none"> <li>○ Continuous Assessment (10)</li> <li>○ Record (5)</li> <li>○ Internal Exam (10)</li> </ul> </li> </ul>		
	External	<ul style="list-style-type: none"> <li>• End Semester practical examinations are the metric to assess the course outcomes.</li> <li>• External examination is conducted for a maximum of 50 marks by the University.</li> </ul>	67%	
Indirect Assessment	Course Exit Survey	<ul style="list-style-type: none"> <li>• On completion of each semester, feedback is obtained from the students for the courses they have attended.</li> <li>• Recorded for assessing the attainment of COs</li> </ul>		20%

**Table B.8.4.1.c: CO assessment process for Laboratory**

### Laboratory Continuous Assessment

A Continuous assessment for laboratory courses is done to enable a measurable rate of progress and learning for students throughout the course period. Regular monitoring facilitates scope for improvement and remedial action in assessing the performance of the students.

**Assessment for Science Laboratory**

Attendance	Experiment Procedure	Result	Handling / Safety	Record Submission
2	2	2	2	2

**Assessment for Language laboratory**

Attendance	Activity	LSRW Skills	Body Language	Activity Record
2	2	2	2	2

**The Relevance of Assessment Tools Used:**

- The assessment tools evaluate the student's knowledge and ability to apply their skills through continuous assessment process such as internal examinations, end semester examinations, presentations, assignments, tutorials etc. These tools reflect the levels of student learning. The weightage given for various assessment tools used for the attainment of Course Outcomes is shown in Table 8.4.1a & 8.4.1b
- The CO attainment level is measured based on internal assessment and external examination conducted by the University. It is a form of measure of direct attainment. The University conducts two internal exams for each course in a semester.
- In each exam, the percentage of students achieving a set target is calculated for the covered COs. After two tests, the average of these percentages is calculated to determine the attainment level. The guidelines for deciding the attainment levels are as follows:
  - Attainment Level 1: 60% of students' scores more than the target level.
  - Attainment Level 2: 70% of students' scores more than the target level.
  - Attainment Level 3: 80% of students' scores more than the target level.
- According to the weightage given by the University, 33% of the internal attainment and 67% of the external attainment is considered to be the course attainment through marks.
- Individual faculty will conduct the course end survey on the course outcomes at the end of every semester.
- Hence, 80% of the attainment level obtained through marks and 20% of the attainment level obtained through end survey, feedback, is considered to be the total Course Attainment

**8.4.2. Record the attainment of the course outcomes of all first-year courses (5)**

*(The attainment levels shall be set considering average performance levels in the institution level examination or any higher value set as target for the assessment years. Attainment level is to be measured in terms of student performance in internal assessments with respect the COs of a subject plus the performance in the institution level examination)*

The course outcome attainments for 2016-17, 2017-18 and 2018-19 are given below

**CAYm3: 2016-17**

Course Code	Course Name	Direct Attainment (DA) (80%)	Indirect Attainment (IA) (20%)	Course Attainment (DA+IA)
C101	English-I	2.00	0.56	2.56
C102	Mathematics-1	1.84	0.56	2.40
C103	Applied Physics	1.76	0.53	2.29
C104	Computer Programming	2.12	0.56	2.68
C105	Mathematics-II	1.92	0.52	2.44
C106	Engineering Drawing	1.84	0.54	2.38
C107	English Communications Skills Lab-I	2.40	0.56	2.96
C108	Applied Physics Lab	2.40	0.55	2.95
C109	Computer Programming lab	2.40	0.57	2.97
C110	English -II	2.04	0.54	2.58
C111	Mathematics -III	2.12	0.53	2.65
C112	Applied Chemistry	1.88	0.51	2.39
C113	Environmental Studies	2.40	0.54	2.94
C114	OOPS THROUGH C++	2.28	0.56	2.84
C115	Engineering Mechanics	1.88	0.54	2.42
C116	English Communications Skills Lab-II	2.40	0.55	2.95
C117	Applied Chemistry Lab	2.40	0.56	2.96
C118	OOPS THROUGH C++ LAB	2.40	0.57	2.97

**Table B 8.4.2a: Course Outcome attainments for CAYm3 (2016-17)**



## CAYm2: 2017-18

Course Code	Course Name	Direct Attainment (DA) (80%)	Indirect Attainment (IA) (20%)	Course Attainment (DA+IA)
C101	English-I	2.12	0.57	2.69
C102	Mathematics-1	2.08	0.55	2.63
C103	Applied Physics	2.12	0.57	2.69
C104	Computer Programming	2.16	0.60	2.76
C105	Mathematics-II	1.92	0.56	2.48
C106	Engineering Drawing	2.28	0.58	2.86
C107	English Communications Skills Lab-I	2.40	0.57	2.97
C108	Applied Physics Lab	2.40	0.57	2.97
C109	Computer Programming lab	2.40	0.57	2.97
C110	English -II	2.32	0.53	2.85
C111	Mathematics -III	2.32	0.59	2.91
C112	Applied Chemistry	2.04	0.56	2.60
C113	Environmental Studies	2.36	0.59	2.95
C114	OOPS THROUGH C++	2.28	0.58	2.86
C115	Engineering Mechanics	2.24	0.59	2.83
C116	English Communications Skills Lab-II	2.40	0.59	2.99
C117	Applied Chemistry Lab	2.40	0.56	2.96
C118	OOPS THROUGH C++ LAB	2.40	0.59	2.99

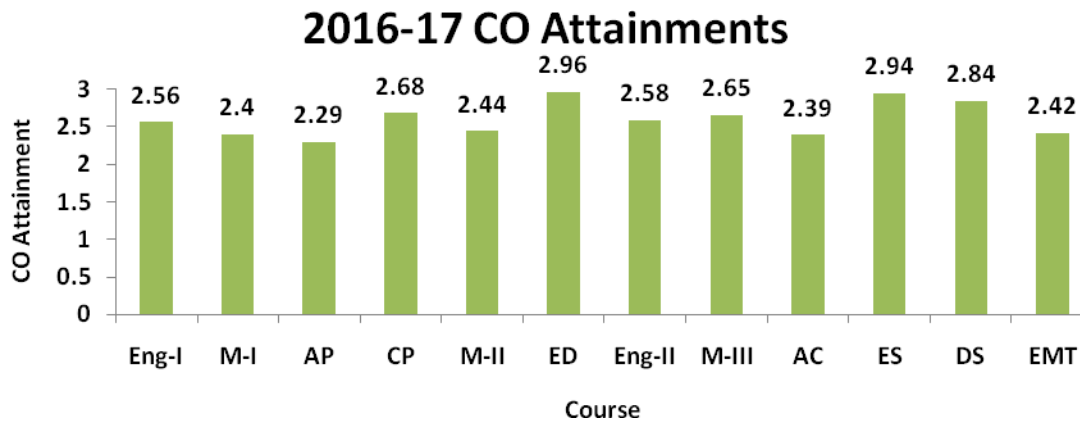
Table B.8.4.2.b: Course Outcome attainments for CAYm2 (2017-18)

## CAYm1: 2018-19

Course Code	Course Name	Direct Attainment (DA) (80%)	Indirect Attainment (IA) (20%)	Course Attainment (DA+IA)
C101	English-I	2.36	0.58	2.94
C102	Mathematics-1	2.16	0.56	2.72
C103	Applied Physics	2.04	0.54	2.58
C104	Computer Programming	2.08	0.57	2.65
C105	Mathematics-II	2.36	0.58	2.94
C106	Engineering Drawing	2.40	0.57	2.97
C107	English Communications Skills Lab-I	2.40	0.59	2.99
C108	Applied Physics Lab	2.40	0.57	2.97
C109	Computer Programming lab	2.40	0.55	2.95
C110	English -II	2.40	0.56	2.96
C111	Mathematics -III	2.40	0.55	2.95
C112	Applied Chemistry	2.04	0.56	2.60
C113	Environmental Studies	2.40	0.59	2.99
C114	OOPS through C++	2.32	0.59	2.91
C115	Engineering Mechanics	2.20	0.56	2.76
C116	English Communications Skills Lab-II	2.40	0.58	2.98
C117	Applied Chemistry Lab	2.40	0.57	2.97
C118	OOPS THROUGH C++ LAB	2.40	0.57	2.97

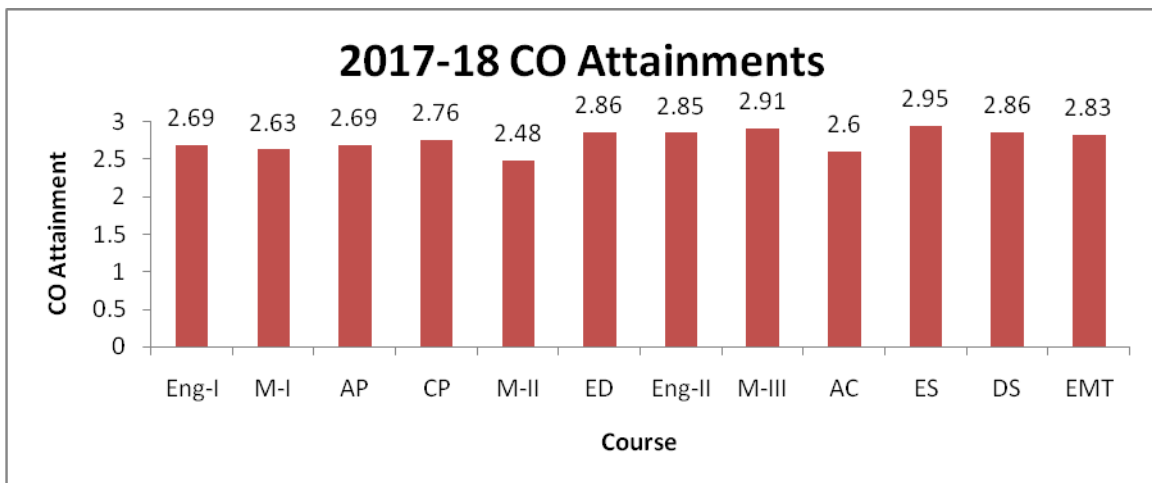
Table B.8.4.2.c: Course Outcome attainments for CAYm1 (2018-19)

The graphical representation of CO attainments for each course is presented below for the academic years 2016-17, 2017-18 and 2018-19 admitted batches.



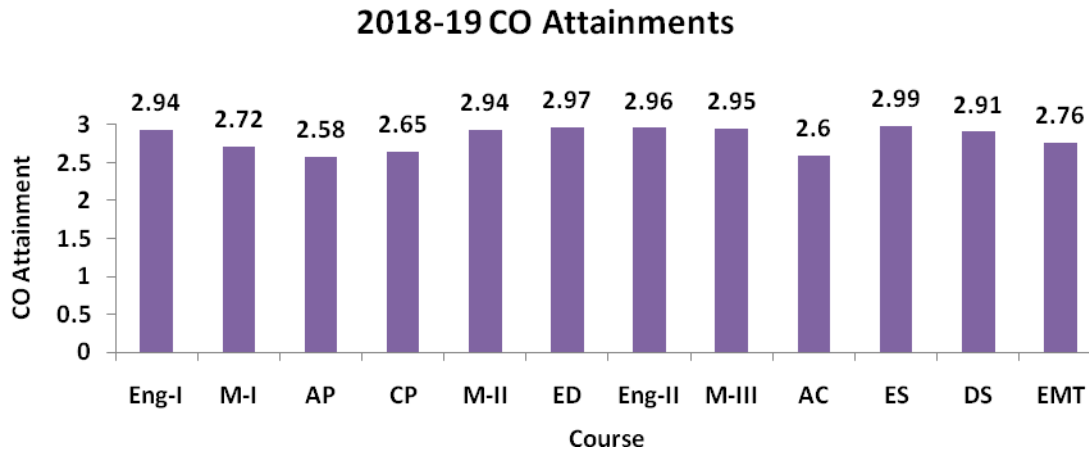
**Figure B.8.4.2.a:** Graphical representation of attainment levels of various courses during the academic year 2016 - 17

**Observation:** During 2016-17 academic year the attainment for the courses Mathematics-I, Applied Physics, Mathematics-III, and Engineering Mechanics was comparatively low. This may be due to lack of conceptual knowledge and grounding in Mathematics, Physics and Chemistry.



**Figure B. 8.4.2.b:** Graphical representation of attainment levels of various courses during the academic year 2017 – 18

**Observation:** During 2017-18 academic year, all the course attainments are above 2.4.



**Figure B 8.4.2.c:** Graphical representation of attainment levels of various courses during the academic year 2018 - 19

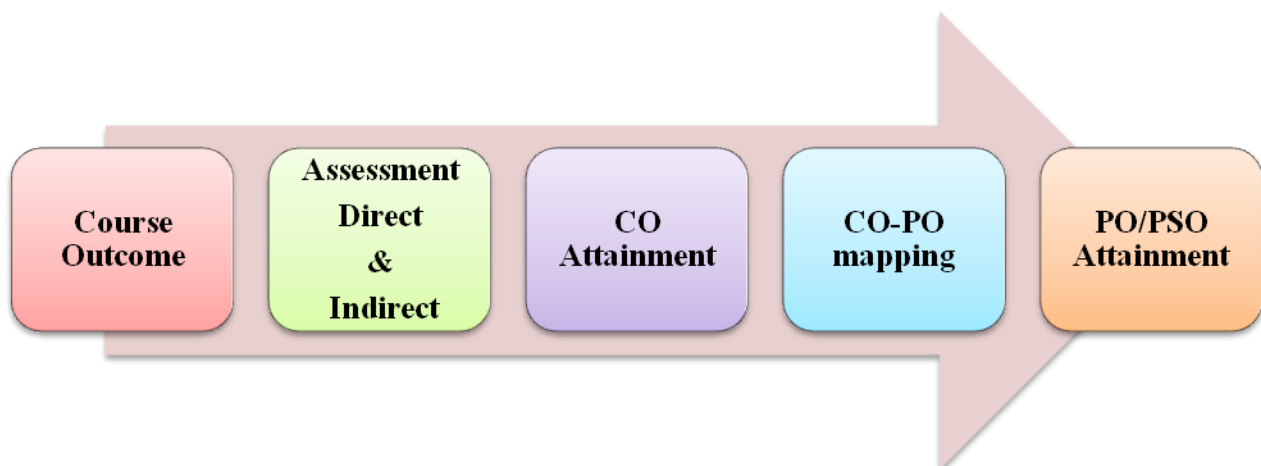
**Observation:** During 2018-19 academic year all the course attainments are above 2.4.

## 8.5. Attainment of Program Outcomes for first year courses (20)

### 8.5.1. Indicate results of evaluation of each relevant PO and/or PSO if applicable (15)

*(Describe the assessment processes that demonstrate the degree to which the Program Outcomes and Program Specific Outcomes are attained through first year courses and document the attainment levels. Also include information on assessment processes used to gather the data upon which the evaluation of each Program Outcome is based indicating the frequency with which these processes are carried out)*

The process for calculating PO/PSO attainment for all first-year courses is presented below



**Figure B.8.5.1a:** PO/PSO attainment process

- The Program Outcomes (POs)/Program Specific Outcomes (PSOs) are features that graduates can do after completing their program. At the end of each program, a PO / PSO assessment is done from the CO attainment of all curriculum components.
- For every Course, there are number of outcomes to be achieved at the end of the course.
- For each course, attainment level of all course outcomes is arrived at rigorously based on student performance in the internal and external examinations.
- All COs i.e., [CO<sub>1</sub>, CO<sub>2</sub> ...CO<sub>6</sub>] are mapped to all POs i.e. [PO<sub>1</sub>, PO<sub>2</sub> ...PO<sub>12</sub>] specified in a given course by correlating with the attainment levels (3, 2, 1) obtained in CO-PO mapping.
- A mapping matrix is prepared for every course and establishes a correlation between the course outcomes and program outcomes.
- After doing the CO-PO Mapping, the Course-PO attainment values are calculated using,  
$$\text{Course-PO attainment} = \frac{(\text{Course-PO mapping}) * (\text{Course attainment})}{3}$$
- The average of all these attainments with respect to individual POs is calculated. This gives the direct PO attainment.

**CAYm3: 2016-2017**

Course Code	Course Name	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C101	English-I	-	-	-	-	-	1.99	1.99	1.99	1.99	2.56	2.13	2.56
C102	Mathematics- I	2.40	2.40	2.40	2.40	-	2.40	2.00	2.00	-	-	2.0	2.40
C103	Applied Physics	2.29	2.04	2.29	2.29	-	2.29	2.10	2.10	-	-	-	2.04
C104	C Programming	2.38	2.38	2.24	2.24	2.24	-	-	-	2.24	-	-	2.24
C105	Mathematics -II	2.30	2.17	2.11	2.11	2.03	-	2.44	2.44	-	-	2.11	2.28
C106	Engineering Drawing	2.12	1.99	1.99	1.99	-	1.99	2.38	2.38	2.38	-	2.38	2.38
C107	English Communication Skills Lab	-	-	-	-	-	1.97	1.97	1.97	2.96	2.96	1.97	2.96
C108	Applied Physics Lab	2.95	2.45	2.29	2.29	2.29	1.97	1.97	1.97	1.97	1.97	-	1.97
C109	IT Workshop	2.31	2.48	2.97	-	2.31	-	-	-	2.31	-	-	2.97
C110	English -II	-	-	-	-	-	2.15	2.01	2.15	2.01	2.01	2.15	2.58
C111	Mathematics-III	2.65	2.65	2.65	2.06	-	2.06	2.06	2.06	-	-	2.06	2.65
C112	Applied Chemistry	2.39	2.39	1.99	1.99	-	1.99	1.99	1.99	-	-	-	1.99
C113	Environmental Studies	-	-	2.45	-	-	1.96	2.21	2.21	2.21	-	2.29	2.29
C114	Data Structures	2.84	2.08	2.05	2.21	-	-	-	-	2.13	-	-	-
C115	EMT	2.42	2.42	2.42	2.42	1.61	2.02	-	-	-	-	-	-
C116	English Communication Skills Lab -II	-	-	-	-	-	1.97	1.97	1.97	2.95	2.95	1.97	2.95
C117	Applied Chemistry Lab	2.63	2.30	-	2.46	2.46	-	1.97	-	1.97	1.97	-	1.97
C118	Computer Programming Lab	2.97	2.64	2.31	2.31	2.31	-	-	2.31	2.31	-	-	-
<b>Direct Attainment</b>		<b>2.51</b>	<b>2.34</b>	<b>2.32</b>	<b>2.23</b>	<b>2.18</b>	<b>2.06</b>	<b>2.08</b>	<b>2.12</b>	<b>2.29</b>	<b>2.40</b>	<b>2.12</b>	<b>2.42</b>

**Table B. 8.5.1.a: Program Outcome attainment for CAYm3 (2016 – 17)**

**CAYm2: 2017-2018**

Course Code	Course Name	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C101	English -I	-	-	-	-	-	2.09	2.09	2.09	2.09	2.69	2.24	2.69
C102	Mathematics-1	2.63	2.63	2.63	2.63	-	2.63	2.19	2.19	-	-	2.19	2.63
C103	Applied Physics	2.69	2.39	2.69	2.69	-	2.69	2.47	2.47	-	-	-	2.39
C104	Computer Programming	2.45	2.45	2.30	2.30	2.30	-	-	-	2.30	-	-	2.30
C105	Mathematics-II	2.34	2.20	2.15	2.07	2.07	-	2.48	2.48	-	-	2.15	2.20
C106	Engineering Drawing	2.54	2.39	2.39	2.39	-	2.39	2.86	2.86	2.86	-	2.86	2.86
C107	English Communications Skills Lab-I	-	-	-	-	-	1.98	1.98	1.98	2.97	2.97	1.98	2.97
C108	Applied Physics Lab	2.97	2.48	2.31	2.31	2.31	1.98	1.98	1.98	1.98	1.98	-	1.98
C109	EWS & ITWS Lab	2.31	2.47	2.97	-	2.31	-	-	-	2.31	-	-	1.97
C110	English-II	-	-	-	-	-	2.38	2.22	2.38	2.22	2.38	2.38	2.85
C111	Mathematics-III	2.91	2.91	2.91	2.36	-	2.26	2.26	2.26	-	-	2.26	2.91
C112	Applied Chemistry	2.60	2.60	2.17	2.17	-	2.17	2.17	2.17	-	-	-	2.17
C113	Environmental Studies	-	-	2.46	-	-	1.97	2.21	2.21	2.21	-	2.29	2.29
C114	Data Structures	2.86	2.10	2.06	2.22	-	-	-	-	2.14	-	-	-
C115	Electrical & Mechanical Technology	2.83	2.83	2.83	2.83	1.88	2.36	-	-	-	-	-	-
C116	English Communications Skills Lab-II	-	-	-	-	-	1.99	1.99	1.99	2.99	2.99	1.99	2.99
C117	Applied Chemistry Lab	2.63	2.30	-	2.47	2.47	-	1.97	-	1.97	1.97	-	1.97
C118	Computer Programming Lab	2.99	2.66	2.33	2.33	2.33	-	-	2.33	2.53			
<b>Direct Attainment</b>		<b>2.67</b>	<b>2.49</b>	<b>2.48</b>	<b>2.40</b>	<b>2.24</b>	<b>2.24</b>	<b>2.22</b>	<b>2.226</b>	<b>2.38</b>	<b>2.50</b>	<b>2.26</b>	<b>2.48</b>

**Table B.8.5.1.b: Program Outcome attainment for CAYm2 (2017 – 18)**

**CAYm1: 2018-2019**

Course Code	Course Name	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C101	English I	-	-	-	-	-	2.29	2.29	2.29	2.29	2.94	2.45	2.94
C102	Mathematics-I	2.72	2.72	2.72	2.72	-	2.72	2.27	2.27	-	-	2.27	2.72
C103	Applied Physics	2.58	2.29	2.58	2.58	-	2.58	2.37	2.37	-	-	-	2.29
C104	Computer Programming	2.36	2.36	2.21	2.21	2.21	-	-	-	2.21	-	-	2.21
C105	Mathematics-II	2.78	2.61	2.55	2.55	2.45	-	2.94	2.94	-	-	2.55	2.74
C106	Engineering Drawing	2.64	2.48	2.48	2.48	-	2.48	2.97	2.97	2.97	-	2.97	2.97
C107	English –Communication Skills Lab I	-	-	-	-	-	1.99	1.99	1.99	2.99	2.99	1.99	2.99
C108	Applied Physics Lab	2.97	2.48	2.31	2.31	2.31	1.98	1.98	1.98	1.98	1.92	-	1.98
C109	Engineering Work Shop & IT Work Shop	2.29	2.46	2.95	-	2.29	-	-	-	2.29	-	-	2.95
C110	English II	-	-	-	-	-	2.47	2.30	2.47	2.03	2.47	2.47	2.96
C111	Mathematics-III	2.95	2.95	2.95	2.29	-	2.29	2.29	2.29	-	-	2.29	2.95
C112	Applied Chemistry	2.60	2.60	2.17	2.17	-	2.17	2.17	2.17	-	-	-	2.17
C113	Environmental Studies	-	-	2.49	-	-	1.99	2.24	2.24	2.24	-	2.33	2.33
C114	Data Structures	2.91	2.13	2.10	2.26	-	-	-	-	2.18	-	-	-
C115	Electrical & Mechanical Technology	2.76	2.76	2.76	2.76	1.84	2.30	-	-	-	-	-	-
C116	English –Comm. Skills Lab II	-	-	-	-	-	1.99	1.99	1.99	2.98	2.98	1.99	2.98
C117	Applied Chemistry LAB	2.64	2.31	-	2.48	2.48	-	1.98	-	1.98	1.98	-	1.98
C118	Computer Programming Lab	2.97	2.64	2.31	2.31	2.31	-	-	2.31	2.31	-	-	-
<b>Direct Attainment</b>		<b>2.71</b>	<b>2.52</b>	<b>2.51</b>	<b>2.43</b>	<b>2.27</b>	<b>2.27</b>	<b>2.29</b>	<b>2.33</b>	<b>2.37</b>	<b>2.55</b>	<b>2.37</b>	<b>2.61</b>

**Table B.8.5.1.c: Program Outcome attainment for CAYm1 (2018 – 19)**



**PSO ATTAINMENTS****CAYm3: 2016-17**

<b>Code</b>	<b>Subject</b>	<b>PSO1</b>	<b>PSO2</b>
<b>C101</b>	English I	-	-
<b>C102</b>	Mathematics-I	-	2.00
<b>C103</b>	Applied Physics	1.53	1.72
<b>C104</b>	Computer Programming	1.78	2.50
<b>C105</b>	Mathematics-II	-	2.30
<b>C106</b>	Engineering Drawing	-	-
<b>C107</b>	English –Communication Skills Lab I	-	-
<b>C108</b>	Applied Physics Lab	1.97	1.97
<b>C109</b>	Engineering Work Shop & IT Work Shop	-	-
<b>C110</b>	English II	-	-
<b>C111</b>	Mathematics-III	-	2.36
<b>C112</b>	Applied Chemistry	1.85	-
<b>C113</b>	Environmental Studies	-	-
<b>C114</b>	Data Structures	1.89	2.65
<b>C115</b>	Electrical & Mechanical Technology	2.15	2.28
<b>C116</b>	English –Comm. Skills Lab II	-	-
<b>C117</b>	Applied Chemistry LAB	2.63	1.97
<b>C118</b>	Computer Programming Lab	2.31	2.64
<b>Average</b>		<b>2.01375</b>	<b>2.239</b>

**Table B.8.5.1.d: Program Specific Outcome attainment for CAYm3 (2016 – 17)**

**CAYm2: 2017-18**

<b>Code</b>	<b>Subject</b>	<b>PSO1</b>	<b>PSO2</b>
<b>C101</b>	English I	-	-
<b>C102</b>	Mathematics-I	-	2.19
<b>C103</b>	Applied Physics	1.79	2.02
<b>C104</b>	Computer Programming	1.84	2.57
<b>C105</b>	Mathematics-II	-	2.34
<b>C106</b>	Engineering Drawing	-	-
<b>C107</b>	English –Communication Skills Lab I	-	-
<b>C108</b>	Applied Physics Lab	1.98	1.98
<b>C109</b>	Engineering Work Shop & IT Work Shop	-	-
<b>C110</b>	English II	-	-
<b>C111</b>	Mathematics-III	-	2.59
<b>C112</b>	Applied Chemistry	2.02	-
<b>C113</b>	Environmental Studies	-	-
<b>C114</b>	Data Structures	1.91	2.7
<b>C115</b>	Electrical & Mechanical Technology	2.51	2.67
<b>C116</b>	English –Comm. Skills Lab II	-	-
<b>C117</b>	Applied Chemistry LAB	2.63	1.97
<b>C118</b>	Computer Programming Lab	2.32	2.66
<b>Average</b>		<b>2.125</b>	<b>2.369</b>

**Table B.8.5.1.e: Program Specific Outcome attainment for CAYm2 (2017 – 18)**

**CAYm1: 2018-19**

Code	Subject	PSO1	PSO2
C101	English I	-	-
C102	Mathematics-I	-	2.27
C103	Applied Physics	1.72	1.94
C104	Computer Programming	1.77	2.47
C105	Mathematics-II	-	2.78
C106	Engineering Drawing	-	-
C107	English –Communication Skills Lab I	-	-
C108	Applied Physics Lab	1.98	1.98
C109	Engineering Work Shop & IT Work Shop	-	-
C110	English II	-	-
C111	Mathematics-III	-	2.62
C112	Applied Chemistry	2.02	-
C113	Environmental Studies	-	-
C114	Data Structures	1.94	2.72
C115	Electrical & Mechanical Technology	2.45	2.61
C116	English –Comm. Skills Lab II	-	-
C117	Applied Chemistry LAB	2.64	1.98
C118	Computer Programming Lab	2.31	2.64
<b>Average</b>		<b>2.10375</b>	<b>2.401</b>

**Table B.8.5.1.f: Program Specific Outcome attainment for CAYm1 (2018 – 19)****8.5.2 Actions taken based on the results of evaluation of relevant POs and PSOs (5)**

*(The attainment levels by direct (student performance) are to be presented through Program level Course-PO matrix as indicated)*

*PO Attainment Levels and Actions for improvement – CAYm1 only – Mention for relevant POs*

- ✓ Regular analysis of the results of internal assessment examination of all subjects is done and concerned teachers are guided to take necessary corrective action.
- ✓ Remedial classes are conducted for the academic progress of slow learners.
- ✓ PO-wise actions recommended to bridge the identified gap between target and attainment levels are as follows

POs	Target Level	Attainment Level	Observations
<b>PO 1: Engineering Knowledge:</b> Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.			
<b>PO-1</b>	2.40	2.71	<ul style="list-style-type: none"> <li>• Target is achieved.</li> <li>• Attainment can be increased further for course C104 [CP].</li> </ul>
<b>Action :</b> 1. Proposed to conduct awareness program on “Importance of C-Programming to solve complex Engineering problems”. 2. One week foundation course on pointers, structures and type def in C104 [CP] is to be conducted.			
<b>PO 2: Problem Analysis:</b> Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.			
<b>PO-2</b>	2.40	2.52	<ul style="list-style-type: none"> <li>•Target is achieved.</li> <li>• Attainment can be increased further for courses C104 [CP], C114 [DS].</li> <li>•Rising conceptual discomfort in seeing the link among basic science concepts and engineering.</li> </ul>
<b>Action :</b> 1. Tutorial classes will be planned with more examples in concepts like Stacks, Quees , Shorting techniques, Trees and graphs in C114. 2. Bridge course and Foundation courses to be conducted to plug the gap existing between intermediate mathematics and Engineering Mathematics. 3. Tutorial classes with more examples are proposed for C104 to enhance the analyzing ability.			
<b>PO3: Design Development of solutions:</b> Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.			
<b>PO-3</b>	2.40	2.51	<ul style="list-style-type: none"> <li>• Target is not achieved.</li> <li>• Attainment can be increased further for courses C104 [CP], C112 [AC] and C114 [DS].</li> <li>• Design aspects are lagging in laboratory experiments.</li> </ul>
<b>Action :</b> 1. As this is related to designed part which is absent in the curriculum, exposure to virtual labs is planned. During library hours students are encouraged to utilize online resources for enhancing their design visualization capacities. 2. Animation demonstrations construction and working of secondary batteries are proposed for C112. 3. Reasoning based assignments for C104 and C114 are proposed to reinforce to design skills.			
<b>PO 4: Conduct investigations of complex problems:</b> Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.			

<b>PO-4</b>	2.40	2.48	<ul style="list-style-type: none"> <li>• Target is achieved.</li> <li>• Attainment can be increased further for courses C104 [CP], C112 [AC] and C114 [DS].</li> <li>• Insufficient data reading abilities.</li> </ul>
<b>Action :</b>			
<ol style="list-style-type: none"> <li>1. Application oriented problems are to be included in the assignments for C105 and C111 to enhance their problem-solving skills.</li> <li>2. Additional tutorial classes for C104 and C114 to be conducted to solve complex problems using C with Data Structures.</li> <li>3. Students are encouraged to analyze and interpret the data related contemporary issues C112.</li> </ol>			
<b>PO 5: Modern tool usage:</b> Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.			
<b>PO-5</b>	2.40	2.27	<ul style="list-style-type: none"> <li>• Target is not achieved.</li> <li>• Attainment can be increased further for courses C104 [CP] and C115 [EMT].</li> <li>• Limited awareness about application techniques in dealing with problems of complex engineering data.</li> </ul>
<b>Action :</b>			
<ol style="list-style-type: none"> <li>1. Building awareness about modeling and simulation packages through virtual lab visits.</li> <li>2. Additional tutorial Classes with senior faculty to be conducted for C104 to know more about advancement in Programming tools.</li> </ol>			
<b>PO 6: The Engineer and Society:</b> Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.			
<b>PO-6</b>	2.20	2.27	<ul style="list-style-type: none"> <li>• Target is achieved.</li> <li>• Attainment can be increased further for courses C112 [AC] and C113 [ES].</li> <li>• Inadequate understanding of the role of engineer.</li> </ul>
<b>Action:</b>			
<ol style="list-style-type: none"> <li>1. Orientation programme by industry experts in the first two weeks of induction.</li> <li>2. Encourage students to participate in NSS activities to fill the gap between Engineering education and society.</li> </ol>			
<b>PO 7: Environment and Sustainability:</b> Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.			
<b>PO-7</b>	2.20	2.29	<ul style="list-style-type: none"> <li>• Target is achieved.</li> <li>• Attainment can be increased further for courses C112 [AC].</li> <li>• Improvement is desired in environmental consciousness</li> </ul>
<b>Action :</b>			
<ol style="list-style-type: none"> <li>1. Involving students in yearlong activities such as plantation, eco-friendly practices and champagnes for reducing carbon emissions.</li> <li>2. Expert lectures are planned to improve consciousness on environment and sustainability issues.</li> <li>3. Tutorial classes should be conducted with more examples for non conventional energy sources and carbon emission in C112.</li> </ol>			

<b>PO 8: Ethics:</b> Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.			
<b>PO-8</b>	2.20	2.33	<ul style="list-style-type: none"> <li>• Target is achieved.</li> <li>• Attainment can be increased further for courses C112 [AC] and C113 [ES].</li> <li>• Insufficient understanding of role of ethics in engineering.</li> </ul>
<b>Action :</b>			
<ol style="list-style-type: none"> <li>1. Organize guest lecture on “Professional Ethics” by motivational speakers.</li> <li>2. Teachers leading the students by example in matters of sincerity punctuality and commitment to duty.</li> </ol>			
<b>PO 9: Individual and Team work:</b> Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.			
<b>PO-9</b>	2.20	2.39	<ul style="list-style-type: none"> <li>• Target is achieved.</li> <li>• Attainment can be increased further for courses C114 [DS].</li> <li>• Students need to be more team oriented.</li> </ul>
<b>Action :</b>			
<ol style="list-style-type: none"> <li>1. Students are motivated to organize more events through “English Language Club”.</li> <li>2. Students are encouraged to involve in organizing events and competitions on Independence day, women’s day and Republic day .</li> <li>3. Group discussions will be arranged for C104 in developing simple applications using C programming.</li> </ol>			
<b>PO 10: Communication:</b> Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.			
<b>PO-10</b>	2.20	2.55	<ul style="list-style-type: none"> <li>• Target is achieved.</li> <li>• Improvement is desired in exhibiting effective communication and language skills</li> </ul>
<b>Action :</b>			
<ol style="list-style-type: none"> <li>1. Involving students in language club activities</li> <li>2. Organizing interactive seminars on personal development by in-house and outside experts.</li> <li>3. Plan to Organize British Council and Oxford Achievers Programmes for language enhancement.</li> </ol>			
<b>PO 11: Project management and Finance:</b> Demonstrate knowledge and understanding of the engineering and management principles and apply these to one’s own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.			
<b>PO-11</b>	2.20	2.37	<ul style="list-style-type: none"> <li>• Target is achieved.</li> <li>• Insufficient leadership characteristics.</li> </ul>
<b>Action :</b>			
<ol style="list-style-type: none"> <li>1. An awareness program is to be conducted on financial and Project management.</li> <li>2. Involving Class representatives and their classmates in monitoring conduct of class.</li> <li>3. Students are to be motivated to take active role in technical, sports and cultural activities.</li> </ol>			
<b>PO 12: Life-long Learning:</b> Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.			
<b>PO-12</b>	2.20	2.61	<ul style="list-style-type: none"> <li>• Target is achieved.</li> <li>• Attainment can be increased further for courses C112 [AC].</li> </ul>

**Action :**

1. Enable students to take up online courses like NPTEL, SWAYAM on recent technologies.
2. Students are encouraged to attend national level competitive exams.
3. Motivate the students to make use of web sources.

**Table B.8.5.2.a: PO attainment levels and action taken for CAYm1 (2018 – 19)****PSOs Attainment Levels and Actions for Improvement****CAYm1 (2018-2019)**

PSOs	Target Level	Attainment Level	Observations
<b>PSO 1:</b> Exploit the concepts of VLSI and Embedded Systems for the implementation of Real Time Applications			
<b>PSO-1</b>	2.40	2.10	<ul style="list-style-type: none"> <li>• Target is not achieved.</li> <li>• Attainment can be increased further.</li> </ul>
<b>Action:</b> Proposed to conduct awareness program on real time applications of VLSI.			
<b>PSO 2:</b> Apply advanced algorithms in Signal processing, Image Processing and Communication Systems to solve complex problems.			
<b>PSO-2</b>	2.40	2.30	<ul style="list-style-type: none"> <li>• Target is achieved.</li> <li>• Attainment can be increased further.</li> </ul>
<b>Action:</b> Proposed to conduct Workshop on basics of MATLAB and PSPICE.			

**Table B.8.5.2.b: PSO attainment levels and action taken for CAYm1 (2018 – 19)**

<b>Criterion 9</b>	<b>Student Support Systems</b>	<b>50</b>
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### **9.1 Mentoring system to help at individual level (5)**

*Type of mentoring: Professional guidance/career advancement/course work specific/laboratory specific/allround development. Number of faculty mentors: Number of students per mentor: Frequency of meeting: (The institution may report the details of the mentoring system that has been developed for the students for various purposes and also state the efficacy of such system)*

#### **9.1.1 Student Mentoring System**

Vignan's Institute of Engineering For Women Strongly believes that Student Mentoring system plays a vital role in empowering the women student's at individual level. Unless a student is ready to learn, whatever may be the intelligence quotient of the student/efficiency of the teacher; learning cannot takes place accurately. In this context, VIEW has an efficient student mentoring system of allotting 20 students to every faculty to address not only the academic/curricular issues but also other issues like economic issues, teenage problems, emotional problems and psychological issues. Number of faculty mentors at VIEW are **107** in total among the programs CSE(34), ECE (34), EEE(29) and IT(11).

#### **9.1.2 Objectives of the Student Mentoring System:**

The objectives of the Mentoring System at 'VIEW' are:

- A. To monitor and enhance the student's regularity & discipline
- B. To monitor and enhance the students's academic/curricular performance.
- C. To counsel the students and provide confidence to improve their quality of life by addressing their issues such as:
  - Economic Issues
  - Teenage Issues
  - Health Issues
  - Emotional Issues
  - Psychological Issues
- D. To engage the parents in the continual improvement of their ward's performance.
- E. To encourage student's participation in co-curricular & extra-curricular activities with a balanced academic performance.
- F. To guide the students towards campus recruitment, higher education, research & entrepreneurship.



### 9.1.3 Process of Mentoring at VIEW:

Process of Mentoring student's at VIEW was developed to **achieve** the **objectives** of the Student Mentoring system in the following attributes:

#### A. Regularity & Discipline

- Once in a week, every faculty/mentor will informally meet their allotted student's/mentee's for counselling and making a note of their status in the respective Student Mentoring Book.
- During the counselling, if the student was observed to be performing good they will be appreciated. If the student was observed to be non-attentive/non-performer/irregular, the exact reasons/issues will be identified by the mentor and will be given with enough counselling/support in resolving/addressing the concerned issues.

#### B. Academic/Curricular Performance:

- In the first stage at the beginning of every semester, the faculty/mentor will address the allotted students regarding the details of academics in the semester and evaluation procedure in line with the respective PO's, PEO's, Mission, Vision at program and institute level.
- The detailed performance evaluation/results for every assessment will be noted down in the respective student mentoring book.
- If the student/mentee performance is good then she will be recommended for Merit Scholarship else she will be guided and tutored to improve her performance.

#### C. Other Issues to increase confidence of Student/Mentee to improve their quality of life:

- Economic Issues: During the counselling process, if any student/mentee was observed to be suffering financial crisis impacting their performance will be recommended for various opportunities such as MEAN Scholarships.
- Teenage Issues: During the counselling process, if any student/mentee was observed to be having issues like adolescence, including social media, body image, substance use and sleep will be counselled accordingly in resolving issues at mentor level and even if the issues still persists the student/mentee will be directed to grievance and redressal cell for further counselling through Program Coordinator.

- **Health Issues:** During the counselling process, if any student/mentee was observed to be having any health problem disturbing their performance will be inspected with Health Club with concerned parent consent. Where if the issue deserves a doctorsconsultation, the primary consultation will be borned by the institution and further recommendations will be handed over to the parent.
- **Emotional Issues:** During the counselling process, if any student/mentee was observed to be having emotional issues chronic discipline problems, is truant often, temper trantrums, lack of empathy/compassion, bullying others, causing damage to others properties, having conflicts with parents and authority figures will be counselled accordingly. Even if the issue continues to persist, student/mentee will taken for further counselling with Program Coordinator.
- **Psychological Issues:** During the counselling process, if any student/mentee was observed to be suffering from psychological issues like depression, stress, anxiety, eating disorders, self injury, bipolar disorder and phychotic will be counselled for the resolution. Even if the issues continues to persist the student/mentee will be recommended to a psychologist consultation through program coordinator and parents.

**D. Engaging Parents for continual improvement:** The attendance, performance report and the counselling remarks will be constantly shared with parents daily, monthly and whenever it is necessary. A daily SMS for regularity, monthly attendance report, performance and counselling whenever it is necessary will be shared with the parents.

**E. Co-curricular & Extra-curricular Activities:** During the counselling process, a student/mentee observed to be keen or excelling in any co-curricular or extra-curricular will be given proper guidance towards a balanced learning to maintain better performance in academics and the concerned activity as well. Such student/mentee will be forwarded to the respective clubs for her participation and further guidance in national & international level.

**F. Campus recruitment, higher education, research & entrepreneurship:** During the counselling process, the faculty/mentor will understand the goal of the students regarding her career and guide her towards achieving her goals by recommending her active participation towards Trainings, Seminars, Conferences, Workshops, Publications, Projects, etc., At every stage, the student/mentee will be monitored and report will be maintained cumulatively to motivate them for a better career opportunity.

### 9.1.4. Efficacy of the Mentoring system:

Students will be able to:

- Improve their attendance percentage leading to low detention rates.
- Students who perform badly in initial tests can improve due to the assignments given, question paper solving and effective guidance.
- Register better academic performance.
- Lead a quality learning life with confidence.
- Succeed in Campus Placements and career building.

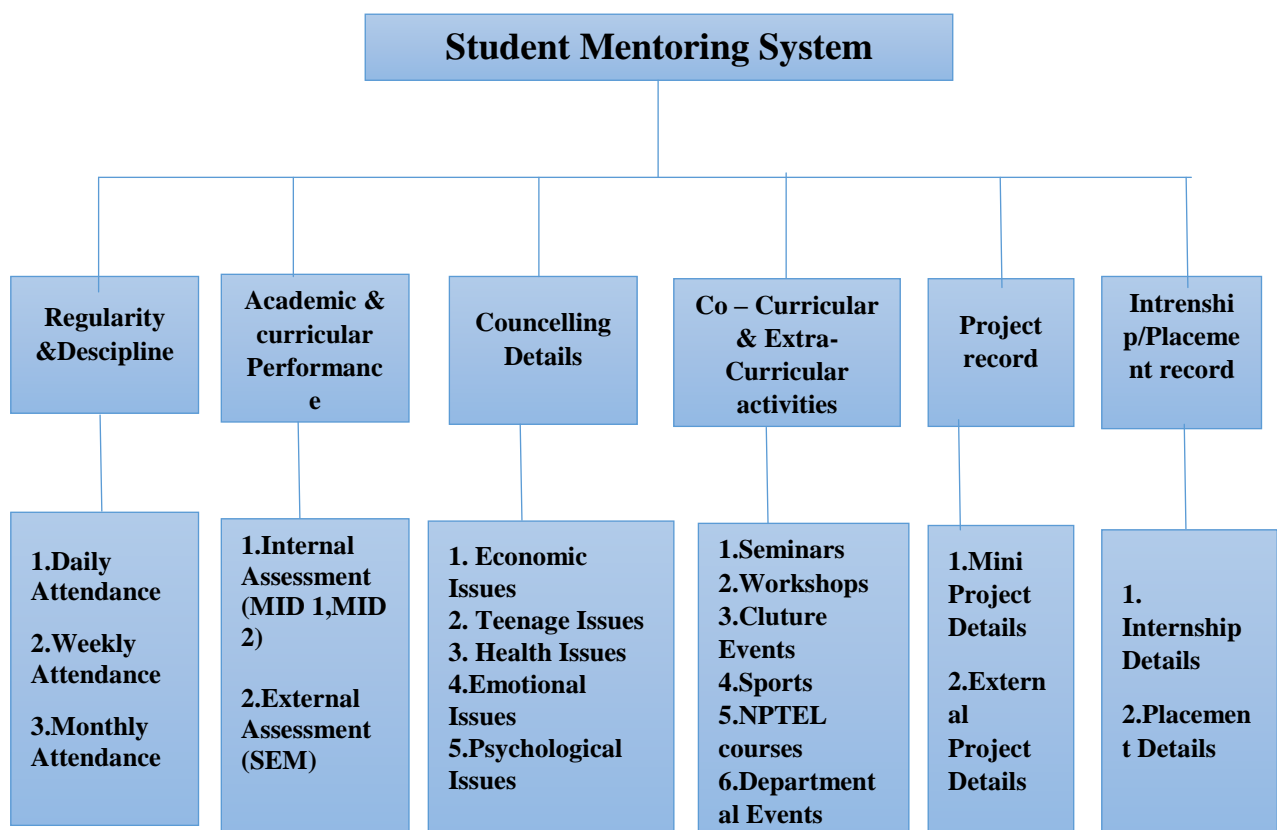


Figure B.9.1.1: Flow chart of Student Mentoring System

**Impact through Counselling on Special Issues:**

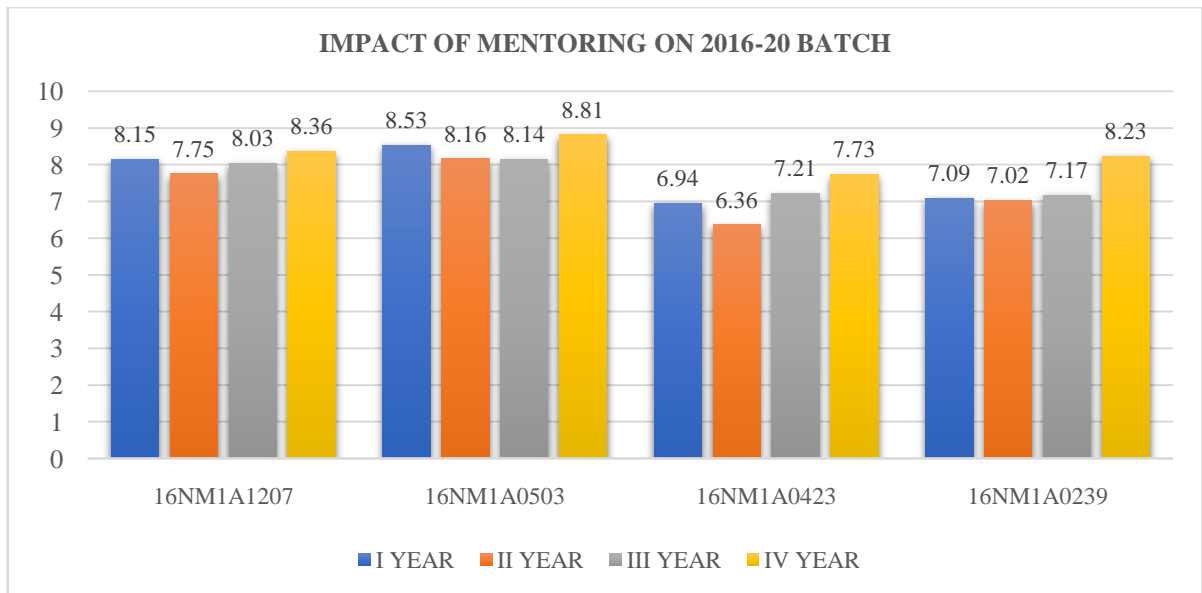
S No	Name of student	Nature of Problem	Status of student (Issue)	Counselling or Support given	Efficacy
1	15NM1A0218 G.NagaPuspa	Academic/ Curricular Performance	Backlogs problem	1.Organising extra classes 2.Remedial and tutorial classes held for preparing remedial exams.	Cleared all the active backlogs
2	16NM1A05G7 M.Keerthi	Regularity &Discipline	Irregularity problem	1. Asking about the reason of irregularity. 2. Motivated to attend regularly by explaining the value of education.	Regularity Improved
3	15NM1A1205 A. Lalithasridiya	Psychological Issues	Depression problem	1. Knowing the reason and motivated the student by showing the motivational and spiritual videos. 2. Daily interacted with student to know the status of her.	Student participated and interacted actively.
4	17NM1A0562 JobaKumariPree thi	Economic Issues	Financial problem	1. Asking about the reason and motivated the student to study well in order to get institute provide mean and merit scholarship.	Student received mean scholarship provided by the institute.
5	16NM1A0275 R.JHANSI	Teenage Issues	Love failure	1. Knowing the reason and guide the student to choose the right path and also said about the importance of parents and how they are struggling about her.	Student choose the correct path and focused on studies.

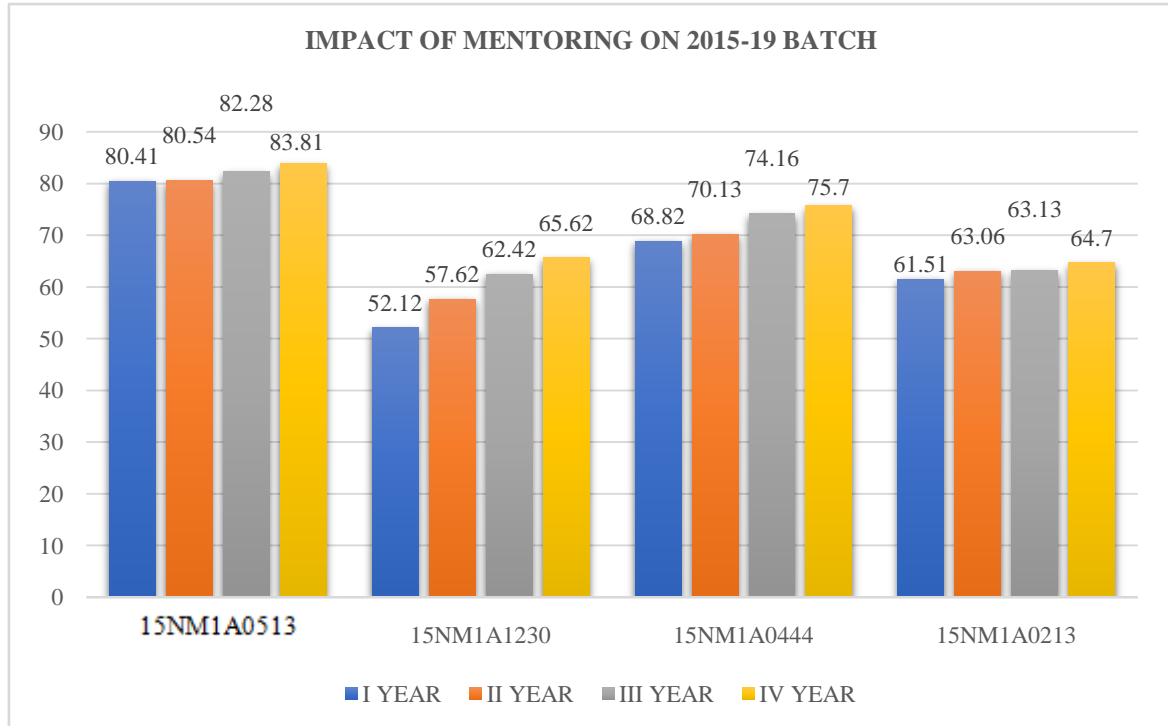
6	16NM1A1228 K.Bhargavi	Academic/ Curricular Performance	Dropping the college due to unable to understand the concepts	1. Knowing the reason and suggested easy ways to understand the concepts through online videos and also provided study materials to prepare the exams. 2. Assisted good knowledgeable students also.	The student continued in the college and cleared all the subjects.
7	16NM1A05G8 P. Tanmay	Health Issues	Irregularity problem due to health issues	1. Asked about the reason and suggested to submit the medical certificate and also informed about important of attendance to write exams.	She submitted medical certificate and tried to come regularly.
8	17NM1A0593 L.Trisha	Psychological Issues	Behaviour problem	1. Knowing the reason and explained about the importance of behaviour and human ethics through youtube videos.	She changed her attitude and interacted with classmates nicely.

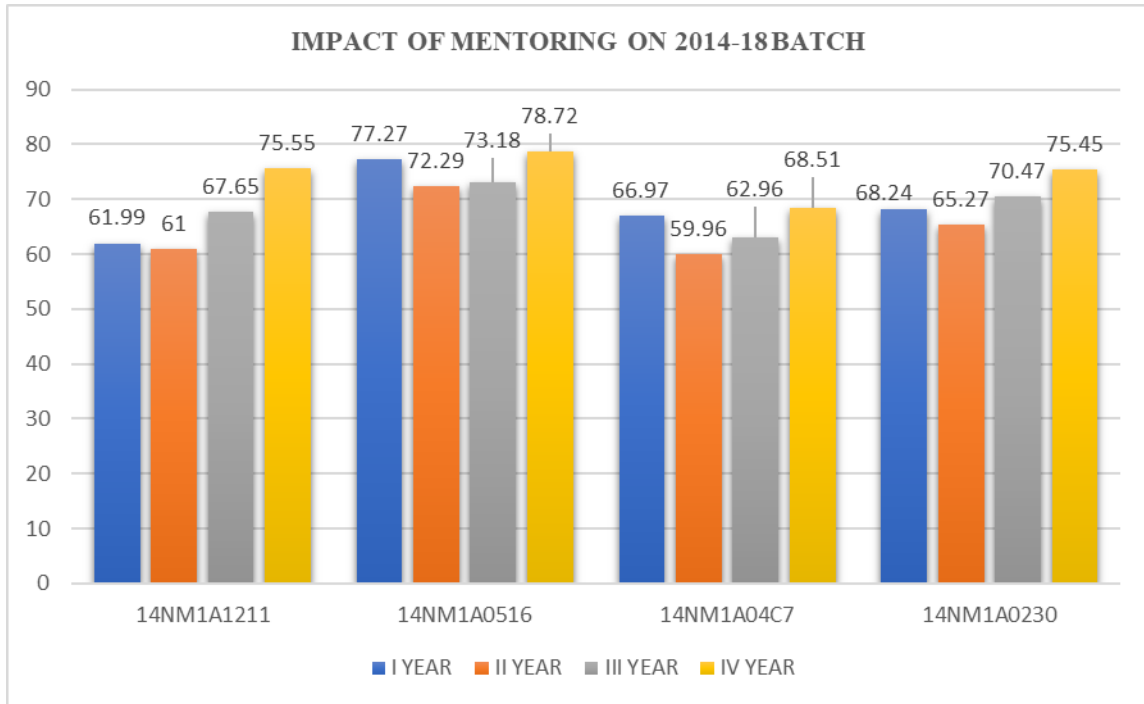
**Table B.9.1.1: Impact through Counselling on Special Issues:**

**9.1.5. Impact through counselling on Academic Performance:-**

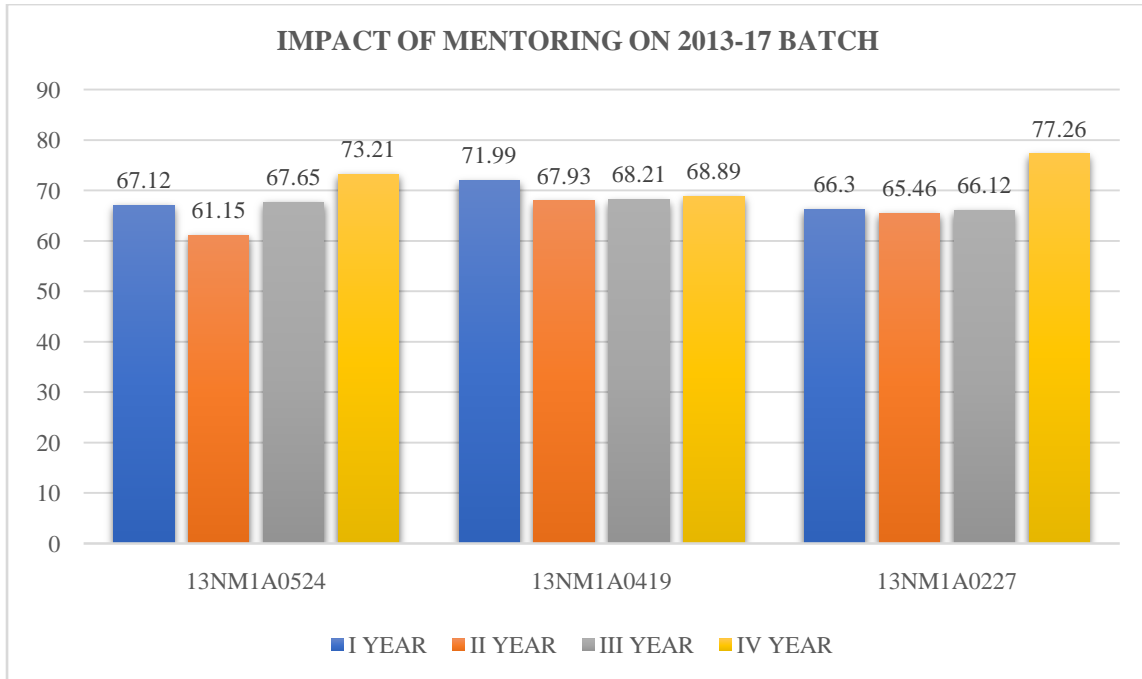
The Academic/Curricular performance of the Student's/Mentee's was good upto their First academic year. Later in the second year their academic performance was fall down due to not able to clarify their doubts intime with inferority complex. In order to improve their academic performance, proper mentoring and guidance was provided with the help of student mentoring system by respective mentor. So that, it was observed student's/mentee's performance was improved in the further academic years.











The institute initiated Merit scholarship to encourage and appreciate the students/mentees academic performance. The merit scholarship is recommended to students/mentees who secured highest aggregates in their academic years at institute rank wise and departmental rank wise.

**Table 9.1.2. List of selected students to merit scholarship**

S.No	Academic year	Number of Selected students to Merit scholarship			
		CSE	ECE	EEE	IT
1	2017-18	3	6	5	6
2	2018-19	6	9	5	4

**Table 9.1.3. List of selected students to pragati scholarship scheme**

S.No	Academic year	Number of Selected students to pragati scholarship scheme			
		CSE	ECE	EEE	IT
1	2019-2020	22	7	3	1

#### 9.1.6. Impact through counselling on Economic Issues

The faculty/mentor not only observes performance of the student/mentee in academic perspective but also observes their financial background and its impact on their academics. So, the faculty/Mentor suggests such an identified students for various scholarships and the college initiated mean scholarships. The list of selected students to mean scholarship for academic year 2018-2019.

**Table 9.1.4. List of selected students to mean scholarship**

S.No	Academic year	Number of Selected students to Mean scholarship			
		CSE	ECE	EEE	IT
1	2017-18	14	25	17	8
2	2018-19	32	15	20	4



**VIGNAN'S INSTITUTE OF ENGINEERING FOR WOMEN**

(Approved by AICTE, New Delhi & Affiliated to JNTUK)

**Kapujaggarajupeta, VSEZ (Post) Visakhapatnam – 530 049**

**Phone: 9133300357, 8886066339**

**Email: viewvizag@yahoo.com**

**STUDENT DETAILS: -**

**Student Name** :  
**Date of birth** :  
**Year of Admission** :  
**Registered no** :  
**Branch** : **Photo**  
**Section** :  
**Father/ Guardian** :  
**Mother** :  
**Student mobile no** :  
**Parent mobile no** :  
**Occupation** :  
**E mail Id** :  
**Permanent address** :

**Present address** : **Hostler/Day Scholar** **Availing Bus Facility: Yes/No**

**Education Details**

S.No	Education	Board	School	CGPA/%
1	X			
2	XII/Inter/			
3	Diploma			

**Admission Details**

Quota : Convenor/Mgmt EAMCET/ECET Rank :

Category : SC/ST/BC/OC Sub Category :

**ATTENDANCE DETAILS****I B.Tech. I Semester**

Date of commencement of Semester:

S. No	As on	Conducted hours (Cumulative)	Attended hours (Cumulative)	Attendance (%)	Remarks
1					
2					
3					
4					
5					
6					
7					

**ACADEMIC PERFORMANCE**

S. No	Subject	Mid – 1	Mid – 2	Internal	End exam	Month/year of passing
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
<b>CGPA</b>						
<b>No. of Backlogs in Current Semester:</b>						
<b>Total No. of Active Backlogs:</b>						



**DETAILS OF CO-CURRICULAR / EXTRA CURRICULAR ACTIVITIES**

<b>Date(s)</b>	<b>Year/Sem</b>	<b>Event Details</b>	<b>Participation Details</b>	<b>Awards (If Any)</b>

*\*Event Details includes Name of the Event, Organized By & In Association with*

**Project Record**

<b>S.No</b>	<b>Year/Sem</b>	<b>Title</b>	<b>Guide Name</b>	<b>Remarks</b>

**Internship/Placement Record**

<b>S.No</b>	<b>Year/Sem</b>	<b>Intern/Placement</b>	<b>Organization</b>	<b>Stipend/Pay</b>	<b>Duration</b>



## 9.2. Feedback analysis and reward /corrective measures taken (10)

*Feedback collected for all courses: YES/NO; Apacific the feedback collection process; Average percentage of students who participate; Specify the feedback analysis process; Basis of reward/ corrective measures, if any; Indices used for measuring quality of teaching & learning and summary of the index values for all courses/teachers; Number of corrective actions taken.*

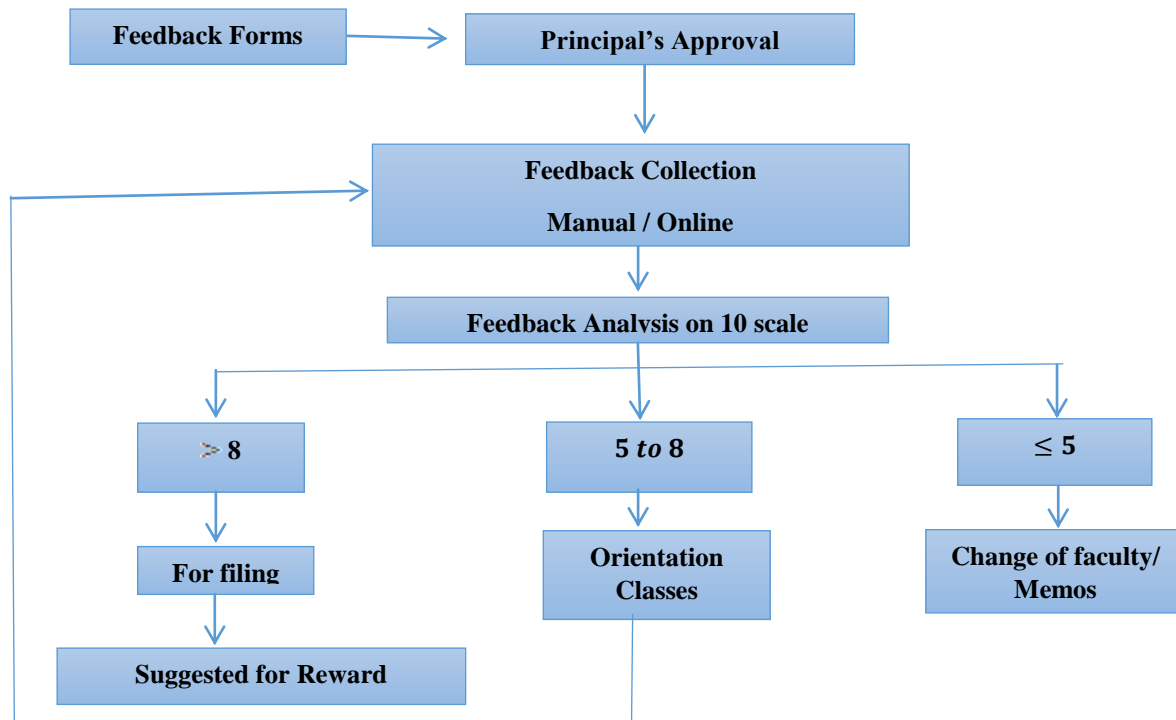
In VIEW, sampling technique is the methodology used for the feedback collection on teaching learning process. A feedback form illustrated in figure B.9.2.2 resembles the format of collection of feedback.

Feedback collection, analysis and evaluation at our institute is as follows:

- Step-1** Collection of feedback forms for all the subjects from the students based on parameters specified in the questionnaire.
- Step-2** Estimation of average for all the parameters and calculation of cumulative otherwise called threshold.
- Step-3** After the recommendations of Priincipal, the threshold value will be finalized. The normal value setup at present is 8
- Step-4** If the threshold exceeds 8, it will be considered as good. If it is less, the faculty performance is considered as average or below average.
- Step-5** If the faculty receives good performance, he will be rewarded with monitory benefits (additional increment). If he/she receives average or below-average performance, he/she gets counselling and allows them to get correct their performances.

Figure B.9.2.1 illustrates the flowchart implemented for the corrective actions taken against the feedback analysis.





**Figure B.9.2.1: Flowchart for feedback analysis process**

### 9.2.1. Feedback collection process

Feedback is collected against the format shown in figure 9.2.2 once in a semester before Mid-I assessment from the students having attendance greater than 75% at the time of collecting feedback.

**Percentage of students participating:** 90% (Approximately)

**Specify the feedback analysis process:** The feedback is collected on 10 Parameters on a 10 point scale as shown below.

**VIGNAN'S INSTITUTE OF ENGINEERING FOR WOMEN:: VISAKHAPATNAM**  
STUDENT FEEDBACK - CSE -C

(25)

Class: II B. Tech (2018 Admitted Batch) - II Sem Academic Year: 2019-20 Date:

S. No	SE MML	JP IR	ADS GS	CO RP	FLAT RS	PPL RRy
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						

\* Rating should be given in Yes/No

Overall Opinion

Subjects	
SE	Software Engineering
JP	Java Programming
ADS	Advanced Data Structures
CO	Computer Organization
FLAT	Formal Languages & Automata Theory
PPL	Principles of Programming Language

SE	Excellent	Very Good	Fair	Poor
JP	Excellent	Very Good	Fair	Poor
ADS	Excellent	Very Good	Fair	Poor
CO	Excellent	Very Good	Fair	Poor
FLAT	Excellent	Very Good	Fair	Poor
PPL	Excellent	Very Good	Fair	Poor

Comments if any \_\_\_\_\_

Name of the Faculty	
MML	Mrs.M.Mamatha Laxmi
IR	Mr.I.Raju
GS	Mrs.G.Sandhya
RP	Mrs.R.Pravallika
RS	Mrs.Rahimunnisa Shaik
RRy	Ms.Rita Roy

Figure B.9.2.2. Student Feedback Form

### 9.2.1 Methodology followed for the analysis of Feedback on Teaching-Learning Process

Acquired feedback will be analyzed based on 4 points using the following methodology. Where Excellent (A), Very good (B), Fair (C), Poor (D)

**Table B.9.2.1: Sample analysis of feedback on Teaching-Learning Process**

S.No	Name of the faculty	Designation	subject	Grades				Total strength	A+B+C+D	Over all index (10)
				A	B	C	D			
1	XXXXX	Asst.Prof	XXX	42	12	0	0	54	54	9.56

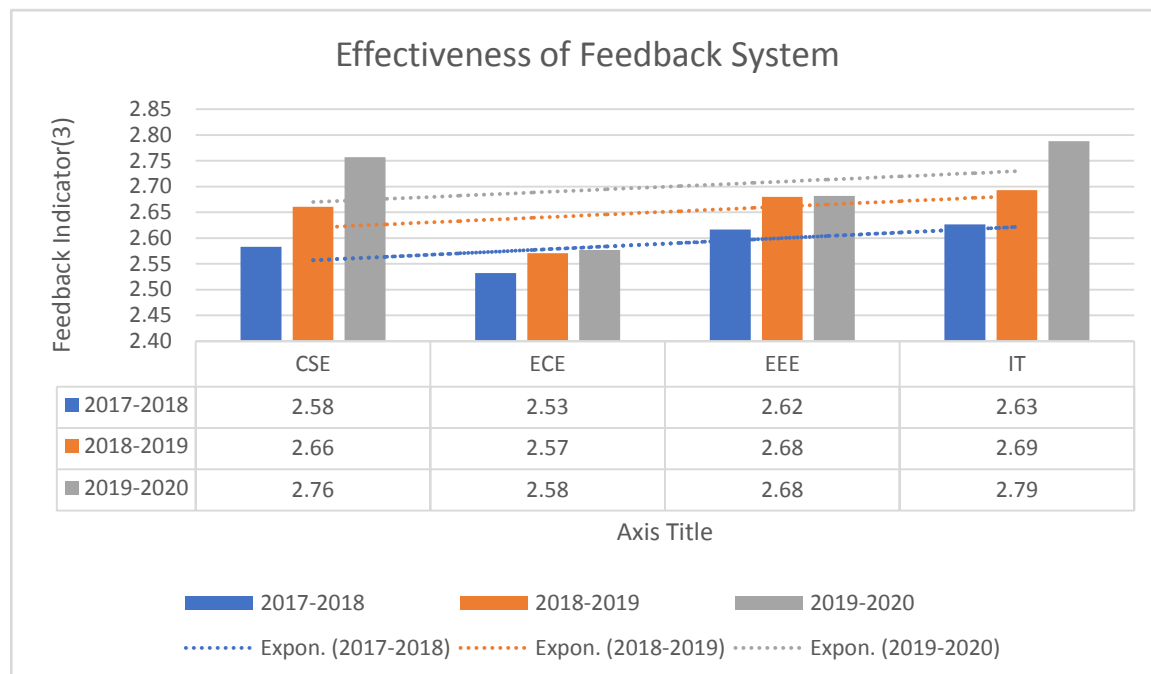
10% Overall Index Scale: A = 10, B = 8, C = 4, D = 0

$$\text{Calculation: } \frac{(A \times 10) + ((B \times 8) + (C \times 4))}{\text{Total strength}}$$

### 9.2.2 Effectiveness of Methodology being followed for analysis of feedback

Effectiveness of the methodology being followed was illustrated based on feedback indicator. Feedback indicator is value of average feedbacks employed by the faculty in a department over a batch of students during their entire academics. This feedback indicator was evaluated for the CAY, CAYm1, CAYm2 for all the programs and illustrated in the figure B.9.2.3.

From the figure B.9.2.3, there is a gradual improvement in the Teaching-Learning Process among all the programs for the last three academic years consistently with the methodology implemented for the analysis of feedback.



**Figure B.9.2.3: Effectiveness of Feedback System**

### 9.2.3. Corrective actions taken and it's efficacy of the Feedback analysis:

In the process of feedback analysis to improve the teacher learning process, a unique process was developed. After the evaluation of feedbacks, faculty who received below 8 will be listed out for further evaluation either through a orientation class or recommended to attend FDP's etc,. Faculty recommended for orientations class will be listed out and sent for principal's office further actions. A record of corrective actions taken were maintained cumulatively for all the three batches. Through principal's office a notification will be issued regarding the orientations to be delivered for the improvement of teaching learning process. A committee will be constituted including Principal along with two program specific internal faculty members and one program specific external member with similar expertise. The recommendations of the committee will be constituted and will given to faculty undergoing orientation will be given a specific time to improve his skills for a better teaching learning process. After the specified time, the faculty will be analysed against the feedback during his delivery in the same class and will be assessed based on the feedback taken again. Further improvements or guidelines will be forwarded to principal office accordingly. A list of such record of corrective actions taken were detailed below in table B.9.2.2 for reference.

**Table B. 9.2.2. Record of corrective actions taken based on feedback:**

<b>Academic Year 2019-20</b>								
<b>S N o</b>	<b>Prog ram</b>	<b>Date</b>	<b>Faculty</b>	<b>Topic</b>	<b>Corrective Actions</b>	<b>Feedback (10)</b>		<b>Commen ts</b>
						<b>Before</b>	<b>After</b>	
1	ECE	09.07.19	Mrs.B.M anjula	Pulse code Modulation	Try to finish off the core concept in first 35 Mins	7.52 III-I (DC)	8.57	Very Good
2	CSE	05.07.19	Mrs.M. Mamatha Laxmi	File system Implemen tations	Each topic should be clear so that students will understand better. Submit lecture notes.	7.81 II-II (SE)	8.87	Average.
<b>Academic Year 2018-19</b>								
<b>S N o</b>	<b>Prog ram</b>	<b>Date</b>	<b>Faculty</b>	<b>Topic</b>	<b>Corrective Actions</b>	<b>Feedback (10)</b>		<b>Commen ts</b>
						<b>Before</b>	<b>After</b>	
4	CSE	4.7.18	Mrs.D.K amal Kumari	Micro operations	Technical Knowledge is poor Prepare lecture notes well in advance Be serious in the class.	7.67 IV-I (CAO)	8.12	Good Repeat Demo
<b>Academic Year 2017-18</b>								
<b>S N o</b>	<b>Prog ram</b>	<b>Date</b>	<b>Faculty</b>	<b>Topic</b>	<b>Corrective Actions</b>	<b>Feedback (10)</b>		<b>Commen ts</b>
						<b>Before</b>	<b>After</b>	
1	EEE	07.09.17	Mr.K.Va msi	Hydro Thermal Schedulin g	Registered Ph.D, Read different text books	6.65 IV-I	8.45	Very Good
2	EEE	07.09.17	Mr.B.Raj esh	Classificti on of Transmiss ion lines	Registered for Ph.D. Attend teaching learning workshops	6.6 III-I	8.24	Good Repeat Orientatio n
3	ECE	05.07.17	Mr.K.V. Ramana Rao	VHDL Program Sructure	More preparation is required	7.38 III-I (DICA )	8.09	Good
4	ECE	05.07.17	Mr.K.Sri dhar	Bridge Rectifier	Registered for Ph.D	7.99 II-I (EDC)	8.87	Very Good
5	ECE	05.07.17	Mr.B.Sri nivasa Rao	Fouries series	Registered for Ph.D (Preferbly in IITS)	6.87 II-I (SS)	8.79	Very Good
6	IT	24.06.17	Mr.Ch.R amasuri A Naidu	Variables	Advised to go a bit slow improve hand writing. Registered for Ph.D	7.1 IV-II (HCI)	8.94	Very Good
7	BS& H	22.08.17	Dr.R.S.S. Srikanth Vemuri	Galvanic cells	Read more books. Listen audio lectures. More practices is required	7.46 I-II (AC)	8.72	Very Good

### 9.3. Feedback on facilities (5)

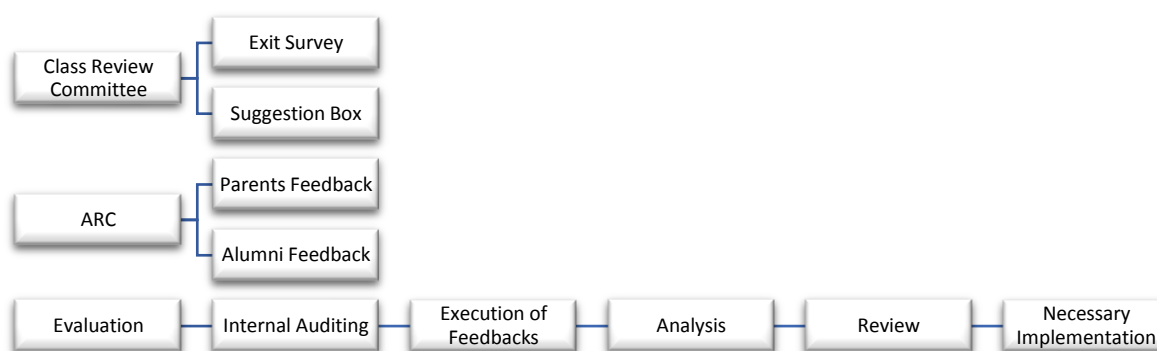
*Assessment is based on student feedback collection, analysis and corrective action taken.*

#### 9.3.1 Feedback Collection Process:

The class review committee/amenities committee in the department looks after the facilities. Student feedback is collected on facilities every semester through class review committee meetings. Feedback on facilities will be collected from the following:

- a. Student Feedback Form
- b. Parent Feedback Form
- c. Suggestion box
- d. JNTUK FFC recommendations on facilities

The minutes of the meeting are thoroughly analyzed at the department level and any corrective actions to be initiated are reported to the management and the facilities will be provided wherever possible. Institute centrally takes the feedback on facilities once in every semester through Exit feedbacks and Alumni feedbacks (batch wise with sampling numbers), Parents feedback (online and offline modes) and corrective measures are taken wherever necessary. The maintenance logbooks are provided in the department for continuous monitoring of amenities. A suggestion box is placed in the department to get the opinion on the functioning, maintenance of the facilities and documented for further actions. The details of the approval letters and the summary of meetings/discussions are presented in Annexures.



**Figure B.9.3.1: Flow chart showing the collection and evaluation of feedback on facilities**

### 9.3.2 Analysis of Feedback on Facilities:

Assessment is based on student feedback collection, analysis and corrective action taken.

Overall rating on the facilities available in the department/institution in parameter wise given in the below Table. The feedback collected will be cumulatively taken on a scale of 5.

**Table B.9.3.1. Student feedback rating on parameters:**

S.No	Parameters	Rating (5 Point scale)		
		2017-18	2018-19	2019-20
1	Classroom ambience	4	3.8	4.2
2	Lab & Computing facilities	3.7	4	4.2
3	Hygiene in canteen	3.5	4	4.4
4	Training & Placement cell	4	3.7	4.5
5	Library facility (E-resources & Digital library)	3.8	4	4.3
6	Transparency in examination & Evaluation	4.3	4.4	4.6
7	Functioning of grievance cell	4	4.2	4.4
8	Hostel & Transport facility	4.2	4	4.3
9	Sports facilities	3.9	4	4.2
10	Medical facilities	3.8	4.2	4.4
11	Means & Merit Scholarship provided by VIGNAN	4.4	4.5	4.8
12	Overall rating about facilities at VIEW college	4.2	4.1	4.4
<b>Average</b>		<b>3.98</b>	<b>4.08</b>	<b>4.39</b>

**Table B.9.3.2:Parent feedback rating on parameters:**

S.No	Parameter	Rating (5 Point scale)		
		2017-18	2018-19	2019-20
1	Teaching & Learning Process	4.2	3.8	4.4
2	Counselling/Mentoring System	4	4.2	4.5
3	Campus Recruitment Training & Placements	4.3	4	4.5
4	Scholarship provided by VIGNAN	4.5	4.5	4.7
5	Student discipline	4.2	4.2	4.4
6	Overall Personality development of your ward	4.3	4.4	4.6
7	Laboratory facilities	4.2	4.2	4.4
8	Library facility	4.2	4.4	4.5
9	Sports facilities	3.9	4	4.2
10	Transport facility	3.8	4.2	4.4
11	Canteen & Hostel facility	4.4	4.5	4.8
12	Co curricular & Extra Curricular Activities	4.2	4.1	4.4
13	Grievance and redressal cell	4.5	4.5	4.5
14	Medical facilities	4	4.2	4.4
15	Overall rating of VIEW	4.2	4.3	4.4
<b>Average</b>		<b>4.19</b>	<b>4.23</b>	<b>4.47</b>

### 9.3.3. Corrective Actions Taken:

As per the key identifications from the parameters in above tables, a recommendations list will be prepared and will be presented in the governing body meetings. As per the guidelines given from the minutes, correction actions will be taken and for last three year academic years were listed below in table B.9.3.3.

**Table B.9.3.3: List of corrective actions taken against recommendations**

S.No	Recommendations	Corrective Actions Taken		
		2017-18	2018-19	2019-20
1	Hostel Facilities	Yes	Upgraded	Upgraded
2	Library Facilities	Yes	Upgraded	Upgraded
3	Medical Facilities	Yes	Upgraded	Upgraded
4	Transport Facilites	Yes	Upgraded	Upgraded
5	Fire & Safety	Floor wise	All exposed areas	Upgraded
6	Canteen Facilities like Xerox, stationary, etc arranged in a spacious canteen	Institute Level	Upgraded	Upgraded
7	LCD projectors and computer systems are fixed in every classroom	Limited to program wise	Limited to section wise	Yes
8	Focusing lights are arranged at the top of the board to clear visibility to the students.	Limited	Yes	Yes
9	Quality equipment and computing facilities increased in the department.	Yes	Upgraded	Upgraded
10	Active functioning of the grievance cell to look after the issues of students.	Yes	Yes	Yes
11	Increased the kits for the in-door and out-door games/sports.	Yes	Upgraded	Upgraded
12	Management providing Means & Merit scholarships to encourage the students	Limited	Yes	Yes
13	Wifi & Internet Facilities	Yes	Upgraded	Upgraded



**Figure B.9.3.2: Some Facilities upgraded in the last three academic years with illustrations**

## Student and parent Feedback forms on facilities are as follows:



### VIGNAN'S INSTITUTE OF ENGINEERING FOR WOMEN

(Approved by AICTE & Affiliated to JNT University, Kakinada) Estd. 2008  
 ISO 9001:2015, ISO 14001:2015, OHSAS 18001:2007 Certified Institution  
 Kapujaggarajupeta, VSEZ (Post), Visakhapatnam-530 049, Andhra Pradesh, India  
 Phone : 9133300357, 8886066339 :: Fax : 0891-2010485  
 Email : viewvizag@yahoo.com, viewprincipal@gmail.com website : www.vignanview.org

#### STUDENT'S FEEDBACK ON FACILITIES

Name :

Branch:

Regd. No:

Admitted Year:

Please rate the Institute as per the criteria given below. Mark a tick '√' in the appropriate cell:

(Note: Excellent-5; Very Good-4; Good-3; Satisfactory-2; Poor-1)

S.No	Question	Rating				
		5	4	3	2	1
1	Classroom ambience	5	4	3	2	1
2	Lab & Computing facilities	5	4	3	2	1
3	Hygiene in canteen	5	4	3	2	1
4	Training & Placement cell	5	4	3	2	1
5	Library facility (E-resources & Digital library)	5	4	3	2	1
6	Transparency in examination & Evaluation	5	4	3	2	1
7	Functioning of grievance cell	5	4	3	2	1
8	Hostel & Transport facility	5	4	3	2	1
9	Sports facilities	5	4	3	2	1
10	Medical facilities	5	4	3	2	1
11	Means & Merit Scholarship provided by VIGNAN	5	4	3	2	1
12	Overall rating about facilities at VIEW college	5	4	3	2	1

Additional Comments: .....

Approved.

PRINCIPAL  
 Vignan's Institute of  
 Engineering for Women  
 K.J.Peta, VSEZ (P.O.),  
 Visakhapatnam-49.




**VIGNAN'S INSTITUTE OF ENGINEERING FOR WOMEN**

(Approved by AICTE &amp; Affiliated to JNT University, Kakinada) Estd. 2008

ISO 9001:2015, ISO 14001:2015, OHSAS 18001:2007 Certified Institution

Kapujaggarajupeta, VSEZ (Post), Visakhapatnam-530 049, Andhra Pradesh, India

Phone : 9133300357, 8886066339 :: Fax : 0891-2010485

Email : viewvizag@yahoo.com, viewprincipal@gmail.com website : www.vignanview.org

**PARENTS' SURVEY FORM ON FACILITIES**
**Name of the Parent:**
**Name of the student:**
**Program:**
**Regd. No. of the student:**

Please rate the Institute as per the criteria given below. Mark a tick '√' in the appropriate cell:

(Note: Excellent-5; Very Good-4; Good-3; Satisfactory-2; Poor-1)

S.No	Question	Rating				
		5	4	3	2	1
1	Teaching & Learning Process	5	4	3	2	1
2	Counseling/Mentoring System	5	4	3	2	1
3	Campus Recruitment Training & Placements	5	4	3	2	1
4	Scholarship provided by VIGNAN	5	4	3	2	1
5	Student discipline	5	4	3	2	1
6	Overall Personality development of your ward	5	4	3	2	1
7	Laboratory facilities	5	4	3	2	1
8	Library facility	5	4	3	2	1
9	Sports facilities	5	4	3	2	1
10	Transport facility	5	4	3	2	1
11	Canteen & Hostel facility	5	4	3	2	1
12	Co curricular & Extra Curricular Activities	5	4	3	2	1
13	Grievance and redressal cell	5	4	3	2	1
14	Medical facilities	5	4	3	2	1
15	Overall rating of VIEW	5	4	3	2	1

Please give your valuable suggestions for improvement of the college.

 .....  
 .....

**Date:**
**Signature:**

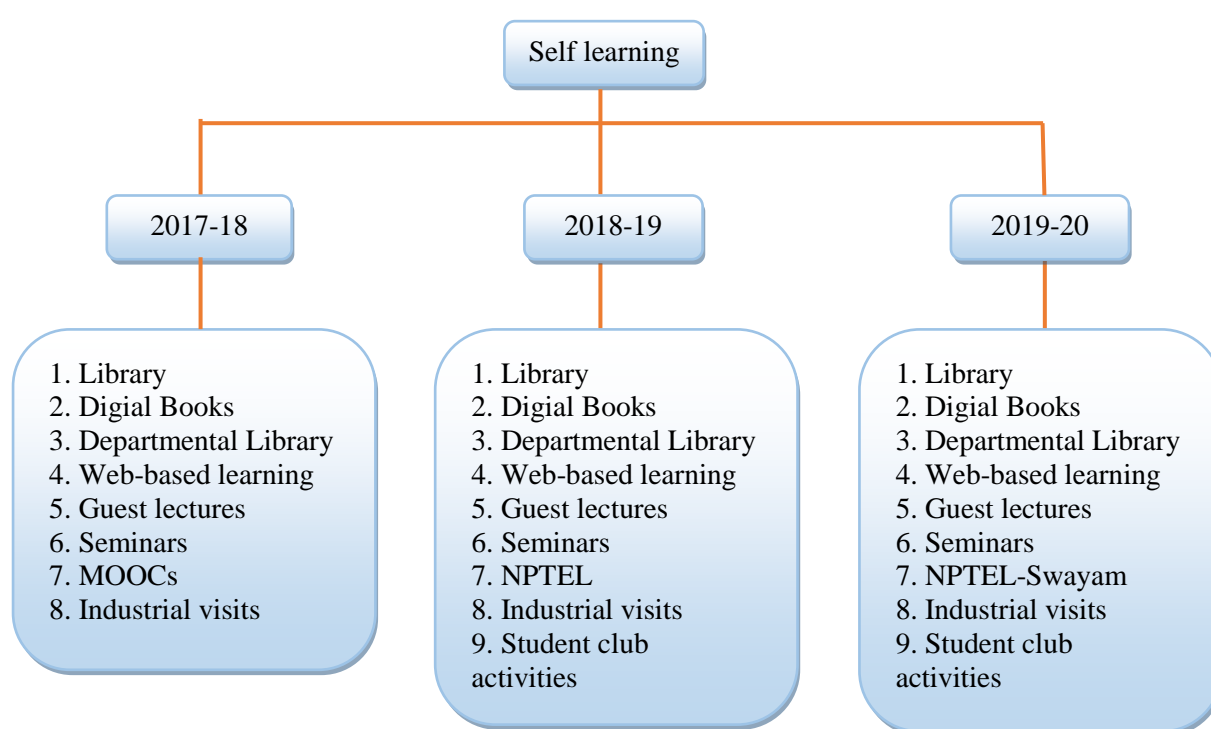
 Approved!  
 PRINCIPAL  
 Vignan's Institute of  
 Engineering for Women  
 K.J.Peta, VSEZ (P.O.),  
 Visakhapatnam-49.

## 9.4: Self-Learning

(The institution needs to specify the facilities, materials and scope for self-learning / learning beyond syllabus, Webinars, Podcast, MOOCs, etc. and evaluate their effectiveness)

### 9.4.1. Scope For Self-Learning

Self-Learning at Vignan's Institute of Engineering For Women was one of the unique ecosystems with diversified learning for women students. The details of the self-learning for the student's of our institution were clearly explained and illustration in the figure B.9.4.1 for the last three academic years.



**Figure B.9.4.1. Illustration chart for the scope of self learning**

Self-Learning method is an individualized method of learning collecting information, processing it, and retaining it without the need for another individual to teach it.

**Table B.9.4.1: Details of Self Learning Processes**

S. No	Self – Learning process	Description
1	Library	Several books provided in each department.
2	Digital Library	<ul style="list-style-type: none"> <li>• Availability of NPTEL videos.</li> <li>• Sufficient systems with multimedia facilities.</li> <li>• Institutional membership, Internet facility like swayam, etc.</li> </ul>
3	Departmental Library	Availability of course material, departmental library

		books,PPTs.
4	Web-based learning	Video lectures through internet
5	Professional bodies / other association and club activities	professional association memberships,departmental associations
6.	Seminars & workshops	Seminars given by the students
7	Assignments	Assignment books and weightage of marks for assignments/Quizzes/seminars
8	Industrial visits	Students Industrial visits
9	Guest lectures	List of Guest lectures organized
10	MOOCs	MOOCs data

#### 9.4.B. Detailed list of Self – Learning facilities:

Various self learning facilities available at VIEW were listed below in detail:

##### a) Central Library

The Vignan Vahini Library has a huge collection of 27784 books with 5676 titles on various subjects including technical, humanities, managerial and reference Books covering biographies, dictionaries, yearbooks etc. The library subscribes 108 national and international print journals and 5230 e-journals, and holds over 1018 project reports. The Learning materials, Previous Question Papers, Project Reports of all departments are made available.

- The Library is open for all users from 7.30 am to 5.30 pm. The library hours are extended on the basis of need during examinations.
- Regular class time tables of all branches allot one session contains one hour in a week for library study. Each student have a library card using which that she can lend 5 books for 15 days nearly 30 members utilizes same title of book per year.
- The use of library by students is generally more during examination period.
- During examination period students spends more time in library.
- Digital Library is also available to the students with free internet Access

**Table B.9.4.2: Detailed list of vignana vahini library**

S. No	Course	Dept.	No. of Titles	No of Volumes	Effective Utilization		
					2017-18	2018-19	2019-20
1	UG	EEE	767	3681	<b>80682</b>	<b>86276</b>	<b>78241 (Covid Impact)</b>
2		ECE	829	4088			
3		CSE	853	4144			
4		IT	813	3312			
5		MECH	676	2915			
11	PG	MBA	731	5027			
12		ECE	92	226			

13		EEE	59	138			
14		CSE	74	180			
15		ME	36	98			
16	BS&H	Total Books	318	2762			
17	General	Books	428	1213			
18	Others	National Journals / International Journal & Magazines	108	108	<b>Effectively utilized 100% of the sources for developing projects or materials.</b>		
19		News Papers	35	35	<b>100%</b>		
20		Faculty Publications	184	184	<b>100%</b>		
<b>Total</b>			<b>5963</b>	<b>28692</b>	<b>Improvement of utilization was observed over a period of last three academic years.</b>		



**Figure B.9.4.2 Vignana vahini library**

#### **b) Digital Library**

- The institution provides facilities like a digital library which has a seating capacity of 175 students at a time, who can access E-journals of J-Gate Science and Technology, NOBLE INFOTECH has 188 E-Journals & E-Books, DELNET has 400 E-journals in Engineering & Technology of E-Journals & E-Books, IEEE E-journals provides magazines and 35 newspapers students can utilize these sources during the leisure hours.
- The Digital Library has 15 computers and several E-Resource of e-journals, e-books, video lectures (like NPTEL), audio lectures of various publisher are made available in the Digital Library for effective teaching learning process.

**Table B.9.4.2: Digital Library**

<b>Availability of Digital Library Contents: Yes</b> <b>Following digital contents are made available</b>		
<b>Content</b>	<b>Accessibility</b>	
<b>NPTEL Video Lecture</b>	Access Provided to NPTEL Video Lecture Content	YES, through local Server
<b>National Digital Library of India (NDL) IIT Kharagpur</b>	Membership to NDL Digital Library of India	YES
<b>Availability over Intranet /Internet</b>	YES	
<b>No. of users per day:</b>	25 - 35 Per Day	

**c) Departmental Library**

- The departmental library comprises books of all engineering subjects of various publications, GATE books, and competitive examination books that are accessible to all students.

**d) Professional bodies / other association and club activities**

- All departments are associated with professional memberships such as the Institution of Engineers and departmental associations.

**e) Seminars & workshops**

- Every department has organized seminars, workshops, technical events such as Tech Fest to enhance communication skills in students.
- Students give excellent seminars in front of all the students once in a week about their own interesting topics to enhance their presenting and communication skills. These seminar classes help the students for their campus interviews to place them in better position.

**f) Assignments**

- All departments maintain assignment books for each and every subject for all students in order to give weightage for evaluating marks.
- Online assignments have been given through REFERENCE GLOBE, whatsapp, google meet to all students to improvise subjective knowledge during the COVID-19 lockdown period.

**g) Industrial visits**

- Departmental industrial visits have been organized such as ISRO, OBELL BELLOWS, etc. to understand the practical implementation of the subject.



Figure 9.4.3. Illustration sample for Industrial Visits (Source: ECE ISRO visit)

#### h) Web-Based Learning and Certification Courses

- Students of all departments were given the opportunity to participate in online classes such as MOOCs, NPTEL, and Webinars, etc.
- Department level faculty's are encouraged to the students to the web based certification courses like NPTEL, UDEMY, Google digital garage, UDACITY and CISCO.
- Students those who got extramural ranking in the course they are awarded with price money as a token of appreciation based on the R&D policy.

**Table B.9.4.3: Effective Utilization of Web-Based Learning and Certification Courses**

Period	SNo	Department	Cert. Course	No of students
2019-20	1	ECE	NPTEL-Swayam	334
	2	IT	NPTEL-Swayam	16
	3	EEE	NPTEL-Swayam	02
	4	CSE	NPTEL-Swayam	99
	5		Sololearn	11
	6		Vision	2
	7		Alison	3
	8		Udacity	3
	9	Wheebox	13	
2018-19	1	IT	NPTEL	02
	2	CSE	NPTEL	24
	3		CISCO	76
	4		Texas measurements	23
	5		Wheebox	11
	6		Solo learn	7
	7		Udemy	7
	8		Data Camp	2
	9		Net CAD	2
	10		Udacity	3
	11		Coursera	2



Figure B.9.4.4: Sample Certification Courses as effective utilization

- MOOCs online program will be conducted by the University of JNTUK to gain the knowledge to the students. These MOOCs classes helps the students to select their written examination during the campus time nearly 141 students get placed by the utilization of these lectures.

Table B.9.4.4: List of MOOC's Web-Based program

Year	S. No	Name of The Cordinator	Branch	Year & Sem	Date	Name of The Subject	Name of The Expert
2018-19	1	Mrs.B.M.Pushpa Latha	EEE	IV-I	27-06-2018	Energy Audit and Management	Dr.P.Suresh Babu
		Mr.K.Kushal Kumar					
	2	S.Kalyani	CSE/ IT	II-I	27-06-2018	Statistics Using R Programming	Tcs Consultants
		I.Raju					
3	A.V. Pradeep	MECH	III-I	27-06-2018	Metal Cutting Machine Tools	Prof. G. L. Samuel, IIT Madras	
4	G.Lakshman	ECE	II-I	27-06-2018	Signals And Systems	Dr. K .V.Srinivas, IIT BHU	
T.Sandya Kumari							
2017-18	5	P.Praveen Kumar	CSE/ IT	II-II	20-11-2017	Java Programming	TCS Consultants, Hyderabad
		Ch.RamaSuri Appala Naidu					
	6	A.V. Pradeep	MECH	II-II	20-11-2017	Design Of Machine Members-1	Ch. Viswanath, IIT Hyderabad
	7	G.Lakshman	ECE	II-II	20-11-2017	Analog Communications	K.V.Srinivas, IIT Varanasi
T.Sandya Kumari							
8	G.Lakshman	ECE	III-II	20-11-2017	Microwave	J.SriHariRao,	

	T.Sandya Kumari				Engineering	NITW(Rtd)
9	Mrs.B.M.Pushpa Latha	EEE	II-II	20-11-2017	Electrical Machines - II	Pradeepkumar Yemula, IIT Hyderabad
	Mr.K.Kushal Kumar					
10	P.Praveen Kumar	CSE/ IT	II-II	18-11-2017	Java Programming	TCS Consultants, Hyderabad
	Ch.RamaSuri Appala Naidu					
11	Mrs.B.M.Pushpa Latha	EEE	II-II	18-11-2017	Electrical Machines - II	Pradeepkumar Yemula, IIT Hyderabad
	Mr.K.Kushal Kumar					
12	G.Lakshman	ECE	II-II	18-11-2017	Analog Communications	K. V. Srinivas, IIT Varanasi
	T.SandyaKumari					
13	A.V. Pradeep	MECH	II-II	18-11-2017	Design Of Machine Members-1	Ch. Viswanath, IIT Hyderabad
14	G.Lakshman	ECE	III-II	18-11-2017	Microwave Engineering	J. Sri HariRao, NITW(Rtd)
	T.Sandya Kumari					
15	I. Raju	CSE	IV-I	20-06-2017	Hadoop& Big Data	KiranKopparapu , Chicago State University
	P.Praveen Kumar					
16	Mrs.B.M.Pushpa Latha	EEE	II-I	20-06-2017	Electrical Machines-I	Pradeep Yamula, IIT Hyderabad
	Mr.K.Kushal Kumar					
17	S.Kalyani	CSE/ IT	II-I	20-06-2017	Python Programming	RajkumarMulge , TCS Consultant
	I.Raju					
18	A.V. Pradeep	MECH	IV-I	20-06-2017	Finite Elements Method	ViswanathCh, IIT Hyderabad
19	P.Praveen Kumar	CSE/ IT	II-I	17-07-2017	Python Programming	TCS Consultants
	Ch.RamaSuri Appala Naidu					
20	Mrs.B.M.Pushpa Latha	EEE	II-I	17-07-2017	Electrical Machines-I	Pradeep Yamula, IIT Hyderabad
	Mr.K.Kushal Kumar					
21	P.Praveen Kumar	CSE/ IT	IV-I	17-07-2017	Hadoop& Big Data	KiranKopparapu , Chicago State University
	Ch.RamaSuri Appala Naidu					



## Material for Learning Beyond syllabus

### i. Coaching's for competitive exams

- Institution provides coaching for GATE, aptitude, reasoning and workable training were given as per the prescribed timetable which makes the students attain effectively for their carrier growth.
- Mock interviews, aptitude test and group discussions are conducted periodically to evaluate performance of the students.
- Worksheets have been design on each topic and circulated to the student's to improve their practice exercise.


### ii. Associations






- Every year Institution level fests are organised in the campus where so any events are conducted like PPTs, poser presentations, rangolis, project expos events are conducted to evaluate their presentation and communication skills.
- In order to provide more exposure to the students towards recent trends emerging technologies and to facilitate better interaction all the departments formed an associations in every year. The main aim of associations is to make sure the students become highly competitive and to acknowledge the inherent talents of the students in both technical and cultural fields.




### iii. Student clubs

- Institution establishes so many student clubs in every year under those clubs many activities were performed in order to exhibit their skills like singing, dancing, mehandi etc. Every year blood donation camp was organised under health club.

2019-20			
Club	TECHKRITHI CLUB-2K19		
Event name	Google It	Idea Presentation	Debugging
Student Committee	A. Gantayath, V. Harshini Chowdary	M. Samyuktha, S. Kavitha	M. Venkata Satya Bhavani, V. Keerthi

<p><b>Demonstration</b></p>			
<p><b>Outcome</b></p>	<p>Students who actively participated in this club have achieved successful placements through knowledge gained in coding skills.</p>		
<p align="center"><b>Club SANSKRITHI CLUB-2K19</b></p>			
<p><b>Event Name</b></p>	<p>Braid a Card</p>	<p>Artsy Lens</p>	<p>Painting</p>
<p><b>Student Committee</b></p>	<p>B. Siva Sai Naga Lalitha, Y. Haritha</p>	<p>B.Niharika, P Tanmay</p>	<p>Sravya S, Y. Haritha</p>
<p><b>Demonstration</b></p>			
<p><b>Outcome</b></p>	<p>Students acquired unique skills of different fine arts through this skills which helped them stand unique and enhanced their resumes for the campus interviews.</p>		
<p align="center"><b>Club Name ACADEMIC CLUB</b></p>			
<p><b>Event Name</b></p>	<p><b>Electronics club</b></p>		<p><b>Coding club</b></p>
<p><b>Student Committee</b></p>	<p>Ch.Parimala, M.Sushmitha, Roopa Sri</p>		<p>B. Chandana Anooha Manogna</p>
<p><b>Demonstration</b></p>			
<p><b>Outcome</b></p>	<p>Students unique coding skills with competitive spirit which helped them clearing technical interviews and screening tests.</p>		

Club Name	ACTIVITY CLUB		
Event Name	Personality development club		Cultural club
Student Committee	K.L.Ahari, Vandana Pratyusha		K.Ushasri M.Jahnavi, P.Meenakshi Deepika
Demonstration			 
Outcome	Students participated and headed these clubs were very effective in their personality management. Students with health and psychological issues were recommended to these clubs and found change in their personal upon active participations.		
Club name	ECO-CLUB		
Event name	Plantation		Go Green
Student Committee	A. Alekhya, K.Pavani		G. Uma, T. Sreeja
Demonstration			
Outcome	Students participated were grown very familiar with the responsibility towards environment and it's sustainability which helped them stand unique in personal interviews.		
Club name	SHRISTI CLUB		
Event name	Children welfare	Model expo	Mean stack
Student Committee	B. Vardhini, A. Vishnu Priya	K. Geethika, P. Sahithi	P. Venkata Tanusha, R. Niharika Kumari

<b>Demonstration</b>			
<b>Outcome</b>	Students who actively participated in this club gained product developed knowledge which helped them to develop unique projects.		
<b>Club name</b>	<b>RYTHMS CLUB</b>		
<b>Event name</b>	Queen of IT		Dance
<b>Student Committee</b>	P. Sirisha, T. Sreeja		A. Alekhya, G. Keerthi
<b>Demonstration</b>			
<b>Outcome</b>	Students actively participated in this club have gained self confidence and helped them to improve special skill towards fine arts.		
<b>Club name</b>	<b>HEALTH CLUB</b>		
<b>Event name</b>	Blood donation	Eco rally	Eco ganesha with medicinal seeds
<b>Student Committee</b>	Beesetty Joshna	Anantapalli Sai Vaishnavi	Simhadri Laharika
<b>Demonstration</b>			
<b>Outcome</b>	Students actively participated in this club have gained a unique skill which impacted many other students to aware of health hazards and safety measures.		
<b>Club name</b>	<b>SPORTS CLUB</b>		
<b>Event name</b>	Kho-Kho		
<b>Student Committee</b>	G Anusha,K.Poorna,S.Tulasi		

Demonstration			
Outcome	Students who actively participated in this club enriched their sports skills which helped them stay fit and improved their stamina.		
<b>Club name</b>	<b>TECHRITZ</b>		
Event name	Technical quiz	AI workshop	Model expo
Student Committee	Y. Punyavathi Sridevi Priyadarshini K	V. Sai Sowjanya D. Vandana Sri	R. Sowmya B. Bhanu Priyanka
Demonstration			
Outcome	Students who actively participated in this club have gained special skills in product development and won many prizes in different national level competitions.		

2018-19			
<b>Club name</b>	<b>TECHKRITHI CLUB-2K18</b>		
Event name	Science Quiz	Story Writing	Words In Words
Student Committee	B. Harshavarshini, G. Hima Bindu	A. S S Subramanyaeswari, K. Ravali	B. Kusumanjali, Y. Renuka

Demonstration			
Outcome	Students who actively participated in this club have achieved successful placements through knowledge gained in coding skills.		
<b>Club name</b>	<b>SAMSKRITHI CLUB-2K18</b>		
Event name	Flash Mob	Essay writing	Movie Promotion
Student Committee	S. Malhotra, P. Veena Madhuri	D. Amrita Varma, D. Uma Maheswari	A. Dhineesha, N. Venkata Sravani
Demonstration			
Outcome	Students acquired unique skills of different fine arts through this skills which helped them stand unique and enhanced their resumes for the campus interviews.		
<b>Club name</b>	<b>NAVITAS CLUB</b>		
Event name	Engineering Exploration	Ppt presentation	Poster presentation
Student Committee	Dokala Anusha	Pentakota Chandana Sravani	Kallepalli Sai Mounica
Demonstration			
Outcome	Students who actively participated in this club were able to gain demonstration skills which helped them to clear Technical & Personal rounds in the campus interviews.		

## Effectiveness of Self-Learning at VIEW:

Self-Learning at VIEW has a huge response for its efficacy showing tremendous in developing products as illustrated below. These are the few highlights of outcomes of the self-learning at VIEW at national level published in various news papers.

# 5 city girls make gadget that will keep your stove burning

Kamalakara.Rao  
@timesgroup.com

**Visakhapatnam:** Five girls from the city have invented a device that will alert consumers when their LPG (liquefied petroleum gas) cylinders are close to being empty and even when there are leakages. The girls have come up with a device that will have to be attached to the LPG cylinder.

The five girls are in their third-year of engineering in the electronics and communications stream at Vignan's Institute of Engineering for Women.

The girls who have come up with this transformative innovation are Ch Parimala, B Lalitha, K Niharika, K Lahari and B Geetha Bhavani. They were guided by associate professor Ch Ramesh Babu.

Speaking to **TOI**, Parimala said that they came up with the idea over routine chats at the college canteen. "Our intention was to create something that will help society," she said.

Discussing the invention, the girls said that when the device is attached to the cylinder, the device will send a message to both the user and the dealer

## DEVICE THAT CAN SAVE LIVES

- > The device alerts the user and the dealer if the cylinder is close to being empty a few days in advance
- > The device will also alert the user if there is a gas leak
- > Madhya Pradesh registers the highest number of LPG leakage cases
- > Nearly one-sixth of deaths due to accidental fires are caused due to gas leakage
- > There are **30 crore** LPG connections in India at the moment



(According to inputs given by students)

informing them if and when the cylinder is nearly empty. The information will also be displayed on the LCD. Moreover, the device will also alert when there is a leakage.

"We hope that our project will help reduce fire mishaps due to gas leaks. Moreover, the system provides a fully automated approach for booking cylinders," Parimala informed.

Lalitha, another member of the group said that even though technology and devices exist to detect and alert leakages many people in rural areas

are not aware of them. "We have introduced this prototype to help overcome such problems in rural areas," Lalitha said.

On being contacted, Anurag Shrivastava, general manager (LPG wing) of Hindustan Petroleum Corporation Limited (HPCL) said that the students can directly approach the HPCL's headquarters in Mumbai if they have come up with something novel. HPCL's team will review the project and if they find something novel in it they will do justice to the idea, Shrivastava informed.

# A cheap robotic hand of foam to make life simpler


Kamalakara Rao  
@timesgroup.com

**Visakhapatnam:** Three city students have designed a robotic 'hand' that can solve a lot of problems for the disabled. The device, which the students call an 'Ani-matronic hand', can also be used effectively by fire personnel or even people from pharma industry. The robotic hand can act as a duplicate hand for the user and imitates all movements of a hand in flesh and blood. The more interesting part is, one needs to 'wear' the hand.

Take the example of a bomb diffusion situation. To make things a lot safer, a cop can stay at a distance and the animatronic hand would do the job for him, imitating the movements of his hand, through a remote control. What's more, this robotic hand is really cost-effective and comes at a price lower than ₹10,000.

The hand has been built using foam sheet and fishing threads are attached to five servo motors which control the movement of the hand. The three students, K Sumanjali, P Bhavya Kumari and B Sravani display the animatronic hand at an expo

## HANDS-FREE COMFORT



**Material used** | Foam, fishing string

**Cost** | **₹10,000**

- > **Gloved hand can control the robotic hand from a distance**
- > **The robotic hand imitates the movements of the gloved hand**
- > **Robotic hands in the market cost ₹35,000 to ₹40,000 at least**

**CAN BE USED BY**

- > Disabled persons
- > Security personnel for safer diffusion of bombs
- > Firemen
- > Pharma professional
- > Relief workers

nan Institute of Women Empowerment (View), Visakhapatnam.

Speaking to TOI, Bhavya said that they thought of creating the device with an intention to help the poor and the disabled. The market has such animatronic hands, she said, but these devices cost around ₹35,000 to ₹40,000.

"We have changed the conventional designs of a robotic hand to create this. We took the device to some expos where it received good response," Bhavya added.

Sumanjali told TOI that the hand can help people working in the chemical industry avoid skin diseases. "Many who work in pharma and chemical industries often face accidents and may even lose their arms since they work with strong acids. One can also use this hand for bomb diffusion," Sumanjali added.

### Department of Computer Science & Engineering



**SAMSKRITHI CLUB**



**Braid a Card**



**Artsy Lens**



**Painting**

**Student Committee**

B. Naga Lalitha, Y. Haritha  
B. Niharika, P. Tanmay  
Sravya S, Y. Haritha

**OUTCOME**

Students acquired unique skills of different fine arts through this skills which helped them stand unique and enhanced their resumes for the campus interviews.

## 9.5 CAREER GUIDANCE, TRAINING & PLACEMENTS (10)

(The institution may specify the facility, its management and its effectiveness for career guidance including counseling for higher studies, campus placement support, industry interaction for training/internship/placement, etc.)

### 9.5.1. Career Guidance Facilities:

Vignan's Institute of Engineering For Women has an effective career guidance system with an effective committee and resources which helps students to decide correct and aspired



career path. Career Guidance Cell (CGC) operates with the above stated committee in accordance with students at institute level and individual level.

- Institute Level: Programs which helps students to decide and work towards their desire career will be organized.
- Individual Level: Any individual students or the students recommended for career counselling will be directed to CGC and an expert counselling will be provided in choosing their desired career path and working towards it. Special cases directed by Principal, TPO and Program Coordinators will be guided accordingly by CGC whenever it is necessary.

**Table B.9.5.1: Career Guidance Cell Committee**

<b>S.No</b>	<b>Name of the Faculty</b>	<b>Position</b>	<b>Role</b>
1	Dr.J.Sudhakar	Principal	Chairman
2	Dr.M.Nagendrababu	Training and Placement Officer(TPO)	Member
3	Dr. K.V.Ramana Rao	Assistant TPO	Member
4	Dr.Akansha Mishra	Associate Professor	Member
5	Dr. Vijaya Bharathi	Associate Professor	Member
6	Mr.G.Netaji	Assistant Professor	Member

The college regularly conducts Personality Development Programs to improve the communication skills of the students from rural background which reassures students of their skills and abilities to succeed. Guest speakers from various industries are invited to provide a broad exploration of various career options and industry knowledge to the students.

Various Career guidance programmes will be organized by the CGC at institute level which helps students to choose, work and achieve their desired career goals. These programs were categorized and will be commenced with the approval of principal and all the program coordinators. Such events were listed below in table B.9.5.2.

**Table B.9.5.2. Career Guidance Programs conducted**

S.No	Date	Name of the Speaker	Students	Topic	Illustration
1	28-01-2019 29-01-2019	Mr.Suresh Kumar Tankala	316	Skills First... Jobs Follows	
2	19-03-2019	Lynn Penny	155	Seminar on International career guidance	
3	03-07-2017	Mr.Lakshmiram Venugopal	150	Motivational Seminar – Acquire Knowledge, Save a life	

### 9.5.2. Counselling For Higher Studies

Career Guidance Cell is also responsible for counselling the students for higher studies in the diversified fields of engineering or others in line with the interest and performance of the students. Various higher education awareness programs were conducted to give the detailed structure and instructions set for the students to enhance their knowledge to clear GATE/GRE, GMAT etc.

**Table 9.5.3. List of Programs to counsel the students towards higher studies**

<b>S. No</b>	<b>Date</b>	<b>Topic</b>	<b>Resource Person</b>
1	17.07.17	Awareness Program on higher education given by Global Tree	Mr.Beesetty G V S Prakash, Business Development Manager
2	22.12.17	Oppurtunities in Abroad by Higher Studies	Mr. Ch.Venkata Ramaiah, Marketing Manager
3	24.01.18	Preparation for GATE, ESE & PSU by Engineers Hub	Prof.A.W.Iqbal Dean Academics
4	16.06.18	Importance of GRE,GMAT,TOEFL by Conduira	Mr.P.V.Rama Sasank, Director
5	13.12.18	Create awareness on overseas Education system	Mr.M.Babuji, Marketing
6	28.01.19	Oppurtunities in US by GLOBAL REACH	Mr.Sasi Kiran Nammi, Marketing Development Executive
7	27.12.19	Higher Education Awareness Program by PVK Educational Consultants	Ms.P.Pushpa Latha, Director
8	04.02.20	An insight into the preparation for GATE by GATE ACADEMY	D.Vijay Sastry, Consulting Partner

Apart of these programs, students those who desires counselling for higher studies will be direct to CGC for further guidance. CGC was chosen to have all the senior level faculty with the department expertise who are well aware of all the possibilities and can counsel the students. Wherever necessary the CGC recommends such students who are keen about their higher studies will be allotted with a mentor specialised in the respective fields.

**Table B.9.5.4: Effectiveness & Impact Analysis of CGC:**

**CAREER GUIDANCE CELL EFFECTIVENESS**



**VIGNAN'S**  
INSTITUTE OF ENGINEERING FOR WOMEN

*Baliboyana Niharika (16NM1A0512)*

**PROBLEM :**  
Lack of self motivation with her financial considerations father being a bike mechanic.

**RECOMMENDATIONS :**  
With the support of CGC through placement support she was recommended for an internship with amazon with product development training.

**EFFICACY:**  
Got placed for 

Package **19** LPA

2019-2020

**CAREER GUIDANCE CELL EFFECTIVENESS**



**VIGNAN'S**  
INSTITUTE OF ENGINEERING FOR WOMEN

*Kotipali Madhavi (15NM1A0559)*

**PROBLEM :**  
Her education gap in academics, she was rejected by 16 companies.


**RECOMMENDATIONS :**  
With the support of CGC she has undergone internship training with a stipend of Rs 5000/- which help her to get placed in one of the top MNC's Company

**EFFICACY:**  
Got placed for 


Package **18** LPA

2018-2019

**CAREER GUIDANCE CELL  
EFFECTIVENESS**




**VIGNAN'S**  
INSTITUTE OF ENGINEERING FOR WOMEN



**Pyla Mounika (14NM5A0519)**


**PROBLEM :**  
She came from Telugu background and was weak in communication skills so she got rejected in several companies



**RECOMMENDATIONS :**  
With the guidance of CGC she was given training for a period of 1 month to develop her communication skills

**EFFICACY:**  
Got placed for 

Package  
**12**  
LPA

**2017-2018**

S.No	Name of the Student	Problem	Strategy to rectify problem of the Student	Efficacy/Outcome
1	<p><b>Pyla Mounika (A.Y. - 2017)</b></p> 	<p>Since she came from telugu background, she was not confident enough to face the campus drives.</p> <p>Due to lack of communication skills she was rejected in 16 companies.</p>	<p>She was continuously given moral support by the TPO and was given training for a period of one month to improve her communication skills</p>	<p>Got placed in JUSPAY company with a package of 12 lakhs per annum</p>

2	<p><b>Kotipalli Madhavi</b> (A.Y. - 2018)</p> 	<p>As she was a mother of 2 kids she got break in her academics.</p> <p>Due to the breakage in her academic career she got rejected by 24 companies in final HR round.</p>	<p>With the guidance of TPO she has undergone internship training with a stay fund of Rs 5000/- which helped her to get selected in campus recruitment drive.</p>	<p>Got placed in AMAZON Company with a package of 18 lakhs per annum.</p>
3	<p><b>Baliboyna Niharika</b> (A.Y 2019)</p> 	<ul style="list-style-type: none"> <li>• She came from a family which is financially weak.</li> <li>• At initial stages during campus recruitment she was unable to clear campus drives due to lack of confidence.</li> </ul>	<p>With continuous support given from CGC &amp; TPO she was able to gain her confidence back and backed her practical skills which helped her to get placed in one of the top MNC's in the country.</p>	<p>Got placed with a package of 19 lakhs per annum in AMAZON.</p>

### 9.5.3. Pre-Placement Training

Pre-placement training at VIEW was developed to enhance the student's skills such as communicational skills, soft skills, personality development skills and technical skills through outcome based education. Skill sets focused to be developed by Pre-placement training will be cumulated by the below Training & Placement Cell Committee from the employer feedbacks.

**Table 9.5.5. Training & Placement Cell Committee**

S.NO	NAME	DESIGNATION	POSITION
1	Dr. J. Sudhakar	Professor	Principal
2	Dr.M.Nagendrababu	Associate Professor	Training and Placement officer
3	Dr.K.V.Ramana Rao	Associate Professor	Assistant Placement Officer
4	Dr.P.Sudhakar	Associate Professor	Assistant Training Officer
5	Mr.M.Krishna Kishore	Assistant Professor	General Aptitude Trainer
6	Mr.Ravi Kumar Sahu	Assistant Professor	Technical Trainer

7	Mr. P.V.Sarath	Assistant Professor	Placements coordinator – EEE
8	Mr. G.Ravi Kumar	Assistant Professor	Training coordinator - EEE
9	Mr.L.V.Suryam	Assistant Professor	T & P coordinator – ME
10	Mr.G.Lakshman	Assistant Professor	Placements coordinator – ECE
11	Mr.E.Tataji	Assistant Professor	Training coordinator - ECE
12	Mr.R.Ravi	Assistant Professor	T & P coordinator – CSE
13	Mr.Ch.Rama Suri	Assistant Professor	T & P coordinator – IT
14	Mrs.T.Suguna	Assistant Professor	T & P coordinator - MBA
15	Mr.P.J.E.Kiran	Junior Assistants	T & P Assistants
16	Mr.O.Chinna Rao	Junior Assistants	T & P Assistants

The recommendations or the suggestions given by the employers and program coordinator will be taken in to the consideration while designing the Pre-Placement Training Calendar. The Pre-Placement Training from Training and Placement will be circulated among all the program for circulations.

#### **Steps in designing Pre-Placement Training:**

1. Acquiring feedback of employers and program coordinators.
2. Cumulative recommendations will be developed for the Principal Approval.
3. Preparation and circulation of Pre-Placement Training Calendar.
4. Instructing the students to finish pre-requisites through web-based learning.
5. Ensuring the conduct of Training programs as per the calendar.
6. Conduct of company specific trainings wherever a specific skill was required from the students through Job descriptions (JD).
7. Ensuring the students to be ready for placements before the campus interviews scheduling.

#### **Implementation of Pre-Placement Training:**

Post designing the Pre-Placement Training Calendar, a defined procedure will be implemented for executing the Pre-Placement Training:

1. From II B.Tech onwards two non credit courses were implemented such as:
  - a. Aptitude Training – Referenceglobe LMS (Life Time Access)
  - b. Technical Training (Core & Programming Skills) – Referenceglobe & Hackerrank
2. Before IV B.Tech, undertaking forms will be issued to all the students for their consent towards training.
3. Students reporting those who are not willing will be forwarded to CGC through TPO.

4. Students who accepted the undertaking, training will be processed through the following modules;
  - a. Campus Recruitment Training (Eligibility: above 60% aggregate in academics / special cases recommended by program coordinator through principal if any)
    - i. Product Development Training.
    - ii. Application Oriented Training.
  - b. Company Specific Training (as per the eligibility & JD)
  - c. Professional Internships (Through Campus hiring / Internshala)
  - d. Specialised Training (If any concerns from Principal/CGC/Program Coordinator)
5. Both the stated trainings will be carried out by the following following organizations as stated where ever they were recommended by Principal and TPO.

**Table B.9.5.6: List of MoUs made for Pre-Placement Training Programs**

S.No	MOU with companies	Description	Date of MoU
1.	Techno Soft solutions(TSS), Visakhapatnam	Imparting training courses	09.01.2012
2.	Randstad India Limited, Chennai	Providing Job placements	05.04.2013
3.	COIGNEDU & IT Services(P) Ltd., Hyderabad	Imparting Training courses	03.07.2014
4.	Focus Academy for Career Enhancement(FACE), Coimbatore	IBM Specific aptitude cracker programme	02.12.2014
5.	Focus Academy for Career Enhancement(FACE), Coimbatore	Campus placement Cracker programe	14.02.2015
6.	Focus Academy for Career Enhancement(FACE),	Company Specific aptitude cracker programme	06.08.2015
7.	M/s.GRAFX IT Solutions Pvt. Ltd.,	Skill Development Programe	27.08.2015
8.	Talentio solutions India Pvt. Ltd.,Hyderabad.	Skill Enhancement Programme	17.02.2016
9.	Focus Academy for Career Enhancement(FACE), Coimbatore	Imparts Aptitude and Reasoning	03.05.2016
10.	Confederation of Indian Industry(CII), Visakhapatnam	Influence inspire and motivation of Students	25-07-2017
11.	APSSDC, Vijayawada	To make qualitative improvements in imparting Technical Skills.	25-07-2017
12.	DATAPRO COMPUTERS PVT. LIMITED	Provides software courses training	16-07-2019
13.	NSE(NSEIT Limited), Mumbai	Online Examination Service Provide Centre	28-08-2019



**Table B.9.5.7: Effectiveness & Impact of Training through Professional Internships:**

S.No	Hired on	Students Name	Company name	Stipend
1	28-11-2017	Aripaka Vijaya Lavanya Likita	Renaissance VIT Chennai	Performance Based
2	04-12-2017	Avuthu Pratyusha Reddy	Indiabulls	□ 2000 /Month
3	24-11-2017	Kavita	AP Janmabhoomi	Performance Based
4	28-01-2018	Uma Divvela	Easy Nirman	□ 3000 /Month
5	28-12-2017	Uma Divvela	Kalakar	□ 2000/Month
6	20-12-2017	SWETHA Pitta	Wooplr Technologies Private Limited	Performance Based
7	18-12-2017	Uma Divvela	Unmaad IIM Bangalore	Performance Based
8	11-12-2017	Lakshmi Lavanya	SimSam	□ 5000-10000 /Month
9	25-11-2017	Kiranmai Challa	AP Janmabhoomi	Performance Based
10	25-11-2017	Sanapathi Lavanya	AP Janmabhoomi	Performance Based
11	25-11-2017	Madhushalini Mantha	AP Janmabhoomiive)	Performance Based
12	30-09-2017	Bhavana Ayyankala	Creation Cradle	Performance Based
13	08-09-2017	Lohitha Chatti	LearnIn	□ 5000-10000 /Month
14	27-10-2019	Asi Kavya Reddy	INDIA Redefined	Performance Based
15	06-03-2019	Mounika Pentakota	Versada Technologies Private Limited	□ 5000 /Month
16	20-04-2018	Kovvuri Lalitha	Youth Empowerment Foundation	Performance Based
17	28-03-2018	Likhita Polamarasetti	INDIA Redefined	Performance Based
18	25-03-2018	Kukkadapu Pratyusha	INDIA Redefined	Performance Based
19	24-03-2018	Shushma Sree	GetInHours	□ 50 /500 Products
20	23-02-2018	Srivalli Malla	E-Summit IIT Roorkee	Performance Based
21	08-02-2018	Srivalli Malla	Aparoksha , IIIT Allahabad	Performance Based
22	12-01-2018	Likhita Polamarasetti	WhizJuniors	□ 3000 /Month
23	06-12-2017	Koribilli Sravani	AP Janmabhoomi	Performance Based
24	25-11-2017	Likhita Polamarasetti	AP Janmabhoomi	Performance Based
25	25-11-2017	Dokala Anusha	AP Janmabhoomi	Performance Based
26	25-11-2017	Vysali Pinnamaraju	AP Janmabhoomi	Performance Based
27	25-11-2017	M Ratna Sahithi	AP Janmabhoomi	Performance Based

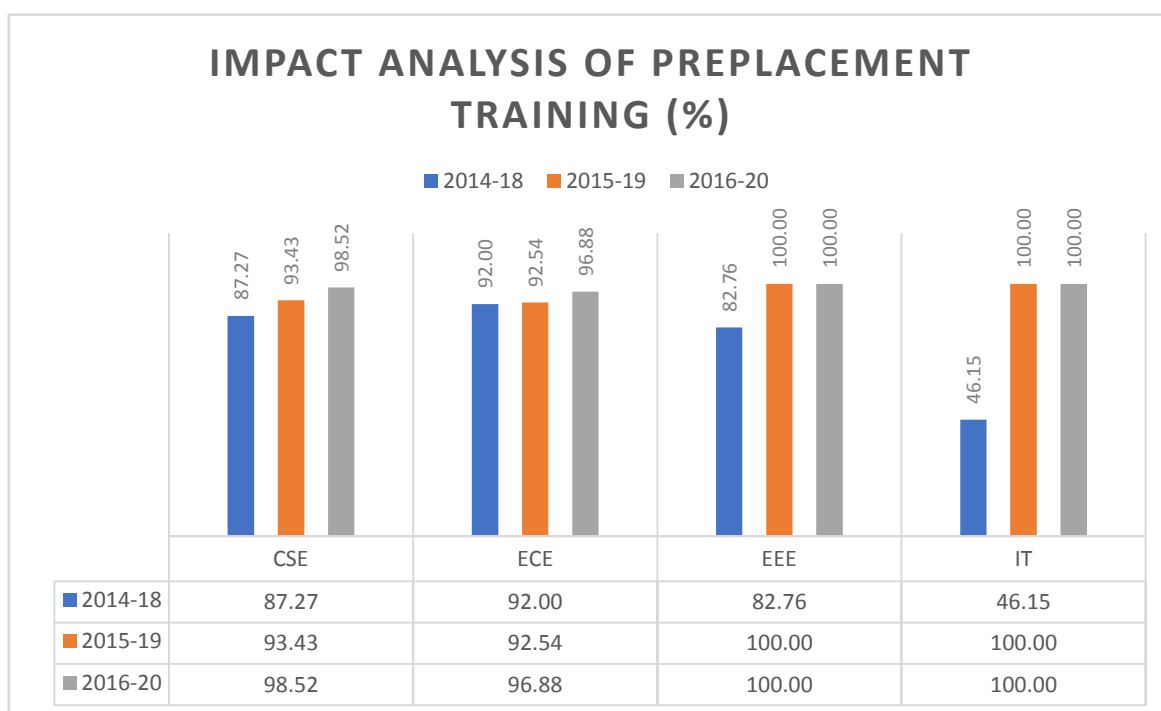
28	01-08-2017	Srivalli Malla	Digital Web Analytics And Optimization	□ 3000 /Month
29	26-08-2019	Sindhu Mallidi	TECHNOVIT 2019, VIT CHENNAI	Performance Based
30	25-08-2019	V Kavya Kanaka Mahalakshmi	INDIA Redefined	Performance Based
31	25-08-2019	Tummapala Jaya	INDIA Redefined	Performance Based
32	25-08-2019	Parapati Neelaveni	INDIA Redefined	Performance Based
33	24-08-2019	Nemani Subha Sri	TECHNOVIT 2019, VIT CHENNAI	Performance Based
34	24-08-2019	Tummapala Jaya	TECHNOVIT 2019, VIT CHENNAI	Performance Based
35	23-08-2019	V Kavya Kanaka Mahalakshmi	TECHNOVIT 2019, VIT CHENNAI	Performance Based
36	23-08-2019	Parapati Neelaveni	TECHNOVIT 2019, VIT CHENNAI	Performance Based
37	23-08-2019	Mattaparthi Samyuktha	TECHNOVIT 2019, VIT CHENNAI	Performance Based
38	22-08-2019	Vineetha Lankada	INDIA Redefined	Performance Based
39	04-07-2019	Mattaparthi Samyuktha	LUDIFU	□ 20000-30000 /Month
40	22-06-2019	Mattaparthi Samyuktha	INDIA Redefined	Performance Based
41	15-03-2019	Lalitya Gunisetty	IDBI Federal Life Insurance Company Limited	□ 10000-15000 /Month
42	15-03-2019	Deepika Ejji	Toise Tech Products (OPC) Private Limited	□ 9000 /Month
43	15-03-2019	Deepika Ejji	Entreesphere	□ 2500 /Month
44	12-03-2019	Deepika Ejji	Bit Brothers	□ 5000-10000 /Month
45	10-02-2019	Kandregula Bhagyasri	Tryst, IIT Delhi	Performance Based
46	22-01-2019	Nadikoppula Divya	Tryst, IIT Delhi	Performance Based
47	14-01-2019	Nadikoppula Divya	E Cell, FMS Delhi	Performance Based
48	27-11-2018	Nadikoppula Divya	United Nations Volunteer	Performance Based
49	17-11-2018	Nadikoppula Divya	INDIA Redefined	Performance Based
50	26-07-2018	Balireddy Shyne	HappyShappy.com	Performance Based
51	23-07-2018	Nadikoppula Divya	E-Cell, IIT Bombay	Performance Based
52	11-06-2018	Priyanka Bobbadi	Creation Cradle	Performance Based
53	10-04-2018	Priyanka Bobbadi	FeHype	Performance Based

### Effectiveness & Impact Analysis Pre-Placement Training:

Effectiveness and impact analysis of our pre-placement training was illustrated in below figure B.9.5.1 which show the continuous improvement in the last three academic year among all the programs. Percentage of students got placed who received Preplacement training was given in detail in the Table B.9.5.8.

**Table B.9.5.8: Effectiveness of the Pre-Placement Training:**

S.No	Batch	Branch	Total Strength	Students Registered	Students Placed	%
2	2014-18	CSE	170	110	96	87.27
		ECE	175	100	92	92.00
		EEE	62	29	24	82.76
		IT	15	13	6	46.15
3	2015-19	CSE	183	137	128	93.43
		ECE	186	67	62	92.54
		EEE	85	33	33	100.00
		IT	47	29	29	100.00
4	2016-20	CSE	186	135	133	98.52
		ECE	195	96	93	96.88
		EEE	118	62	62	100.00
		IT	51	28	28	100.00



### 9.5.D. Placement Process & Support

Placement Process & Support at Vignan's Institute of Engineering For Women was lead by the Training & Placement Committee as stated in Table 9.5.5. In the beginning of the Placement Academic year, an invitation brochure with the prospects of our institution will be sent to different organizations meeting the standards of our students inviting to test, analyse and recruit our students. Placement support is inclusive of the TPC committee provided with dedicated seminar hall for preplacement talks, board room for panel discussions, 3 interview panels with a provision for another 4 panels with restructuring for TR & HR interviews. Successive procedure of *Placement Process and Support* is as follows:

1. Inviting selective organizations/companies through institute prospects brochure.
2. Collecting the Job Descriptions of the organizations/companies to ensure the prerequisites of our students trained.
3. If any deficiencies or extra skills required will be asserted and forwarded to Principal through TPO for further approval of conduct.
4. Ensuring the students undergone preplacement training meet the JD requirements.
5. Upon the campus hiring request received by the company, the same will be concerned the Principal and TP Cell Committee for further approval date of conduct of campus hiring with reference to step 4 & 5.
6. Schedule date/date's will informed to students through TP Cell for preparing themselves in prior for the campus hiring.
7. Ensuring the eligible students have all the documents verified by the respective member of TPC Committee at least 24 hours prior to the hiring process.
8. Conduct of the campus drive with all the amenities at our institution.
9. If the requirement of the company/organization is beyond the number of eligible students at our campus we are inviting in and around campuses students to participate in the campus hiring with social responsibility.
10. Feedback will be taken against the performance of our students for further improvement in the preplacement training process.
11. Post hiring process, the list of selected students will be sent to Program coordinators through principal for further filing of offer letters/confirmation as proof of placement.

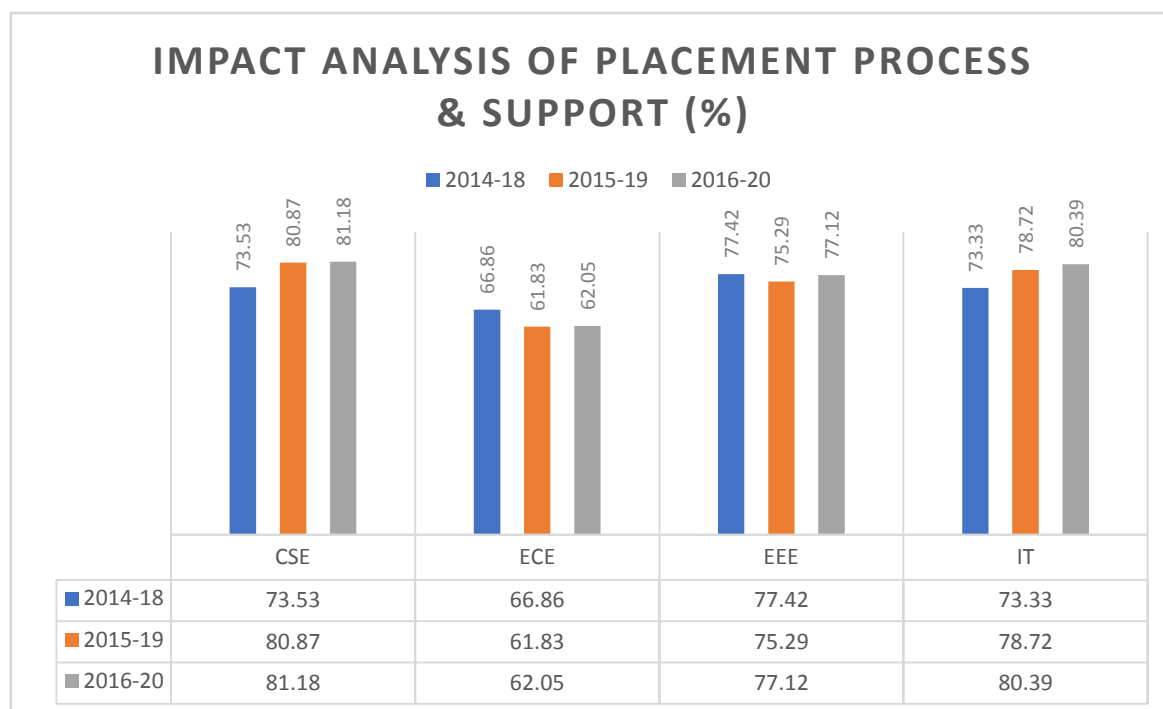
### Effectiveness & Impact Analysis of Placement Process & Support:

The effectiveness of the Placement Process & Support system designed and adopted at VIEW was very effective over last three academic years and clearly illustrated in the table 9.5.9.

**Table B.9.5.9 Effectiveness of Placement Process & Support:**

S.No	Batch	Branch	Total Strength	Final Placements	% Placed
1	2014-18	CSE	170	125	<b>73.53</b>
		ECE	175	117	<b>66.86</b>
		EEE	62	48	<b>77.42</b>
		IT	15	11	<b>73.33</b>
2	2015-19	CSE	183	148	<b>80.87</b>
		ECE	186	115	<b>61.83</b>
		EEE	85	64	<b>75.29</b>
		IT	47	37	<b>78.72</b>
3	2016-20	CSE	186	151	<b>81.18</b>
		ECE	195	121	<b>62.05</b>
		EEE	118	91	<b>77.12</b>
		IT	51	41	<b>80.39</b>
<b>Overall</b>			<b>1473</b>	<b>1069</b>	<b>72.57</b>

### Impact Analysis of Placement Process & Support:



For the batch of 2015-2019 the core streams/programs has slight drop in number of students placed because of the recession in core streams and however for the software streams/programs CSE & IT over the last three academic years there is a continuous improvement in number of students placed.

### **9.6. Entrepreneurship Cell (5)**

*(The institution may describe the facility, its management and its effectiveness in encouraging entrepreneurship and incubation) (Success stories for each of the assessment years are to be mentioned)*

The Entrepreneurship Development cell in Vignan's Institute of Engineering for Women was established in the year 2012 under the supervision of the Department of Management Studies. The head of the Entrepreneurship Development cell is Dr. S Ramesh, HOD-MBA and a team of dynamic faculty coordinators from various departments together form a strong team in encouraging entrepreneurship. The goal of EDC is to assist the students, faculty and budding entrepreneurs within the college with start-ups or existing business in regards to the management of finances, marketing, product development and commercialization. The students are provided with the latest inputs about the industry, the dynamic changes happening around to make them understand the employability options and opportunities to help them create better opportunities.

The ED Cell functions on the following goals:

- To create an environment for self-employment, promote innovation and Entrepreneurship development through various programs
- To introduce the concept of Entrepreneurship as a part of the curriculum
- To promote employment opportunities
- Intellectual Property Rights/Management
- Help with Presentation Skills and Business Etiquettes
- Comprehensive Business Training Programs

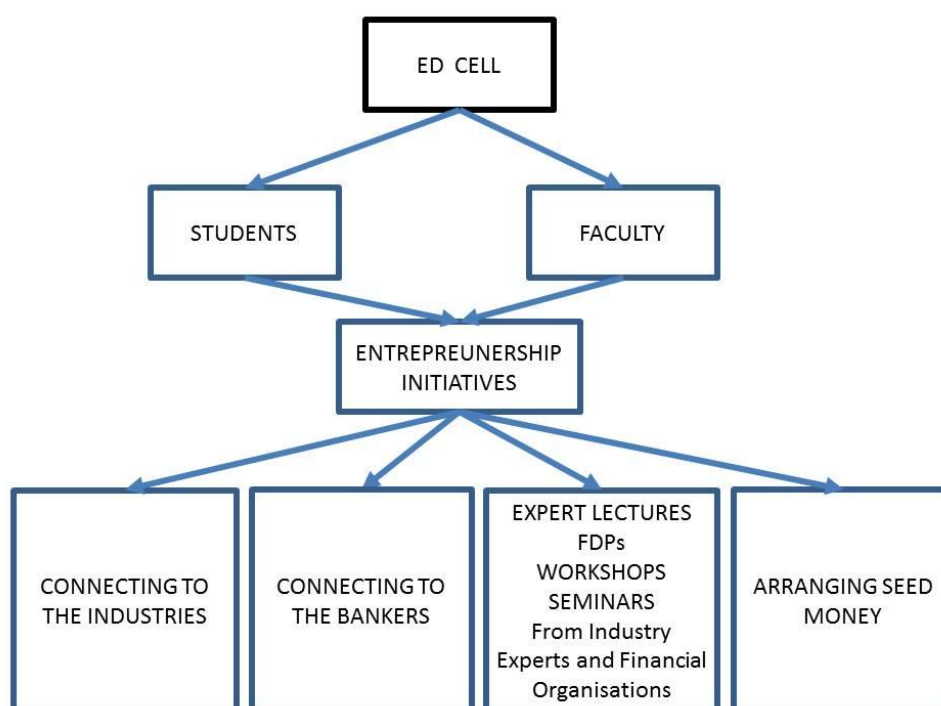
### 9.6.1 Entrepreneurship Development Cell Committee

Table 9.6.1: Members of the Entrepreneurship Development Cell Committee

S.No	Name	Designation	Position
1.	Dr. J. Sudhakar	Principal	Chairman
2.	Dr. S. Ramesh	HOD-MBA	Head-Secretary
3.	Dr. K. Vijay Kumar	HOD-CSE	Member
4.	Dr. K.Durga Shyam Prasad	HOD-EEE	Member
5.	Mr. Ch.Ramesh	In charge HOD-ECE	Member
6.	Mr. V. Ananda Babu	Associate Professor-ME	Member

### 9.6.2 Entrepreneurship Initiatives

The initiatives of the ED cell focuses on the development of primarily the students as well as the faculty therefore the programs are conducted as per the interests of the students either higher studies or placement assistance and training or entrepreneurship. The faculty who are interested in entrepreneurship or specialized in marketing are encouraged to attend various Faculty development programs, workshops and seminars in order to develop their skills and fulfill their interests.



FigureB.9.6.1: ED Cell Structure

**Connecting to the Industries**

- Industry exposure is provided to the students and faculty on a regular basis
- The students are connected to the industries through interactive programs and career guidance.
- The students are encouraged to visit industries and learn about the advanced technology.
- MOUs with industries permit the students to take up industrial training and get hands on experience.

**Connecting to the bankers**

- The students are connected to the financial organisations through interactive sessions from experts.
- The information on loan approvals with agency systems support is given and the students are motivated.

**Guest lectures from financial institutions**

- Guest lectures from banking sectors like SBI, even MSME coordinators have been conducted and delivered lectures on funding.
- The guest lectures are conducted on a frequent basis.
- The lectures guide the students and faculty on how to approach various organisations for financial help.
- The experts guide the students in managing the finances while initiating a new startup idea.

**Guest lectures from industry experts**

- We regularly and very frequently invite experts from industry to deliver their practical experiences and examples to students
- Each and every department of our college organizes and invite guest lectures from industry on various occasions
- The industrial lectures are a source of information for providing details on the various start up ideas.
- Experts from industries share their experience on the various hurdles that come during a startup and how to overcome them.



**Table B.9.6.2: Entrepreneurship Activities during the tenure 2017-2020**

S.No	Date	Event	Resource Persons	Members Attended
1	02.08.2018 to 06.08.2018	5-Day Entrepreneurship Development Program in collaboration with Vignan University	Dr. D. Bhattacharya, VIT Mr. G. Nageswaran Director MSME Mr. B Kalyan Vardhan, Senior coordinator MSME Mr. K Satish,CEO 9 Solutions	3 <sup>rd</sup> and Final Year Students of all Branches
2	26.11.2019	Entrepreneur Development Program in coordination with Software Technology Parks of India	Mr. P. Dubey, Joint Director STPI Mrs M. Lakshmi, CEO ,PATRA Mr. R.L. Narayana, President ITAIP Mrs. P Neeraja, HR IEMEG	3 <sup>rd</sup> and Final Year Students of all Branches
3	10.02.2020 to 22-02- 2020	Two Week National Level Faculty Development Program sponsored by DST and Organised by National Institute for Small and Medium Enterprises	Dr. P Satish Dr. P.S. Ravindra Mrs. Padmaja Dr. Ch. Govinda Rao	Faculty of all branches

### 9.6.3 Entrepreneurship Development Cell facilities:

**Table B.9.6.3: Facilities for ED Cell**

S.No	Description	Number
1	Computers	2
2	Printers	2
3	LCD Projectors	2
4	White Board	1
5	Seminar Hall	1

### 9.6.4 Effectiveness of Entrepreneurship Development Cell

Entrepreneurship Development Cell has conducted listed events to motivate, guide and develop students to create their own ventures. Such startups and outcomes of ED Cell were listed below in table B.9.6.4.

**Table B.9.6.4: List of Entrepreneurs in the tenure 2017-2020**

S.No	Name of the Student	Branch	Type of Business	Name of the Company and Place
1.	P.Sravani & K.Mani Harika	EEE	Startup	A prototype on Women Safety using Alarm buzzer system using GPS, Visakhapatnam
2.	Lakshmi Durga	ECE	Dance School	Dance Academy, Visakhapatnam
3	A Alekhya and G Keerthi	IT	Dance Academy	Dance Academy
4	T. Bindu Sai	CSE	Freelancer Business	Bindu Health and Wellness Centre, Visakhapatnam
5	Majji Swetha	EEE	Start-up	Key Chain Hangers with 3D Printer
6	Ponnada Srikavya	EEE	Start-up	Designed Slates with Multi-CNC machine.
7	Pasem Harshitha	CSE	Start-up App	V-Aahar

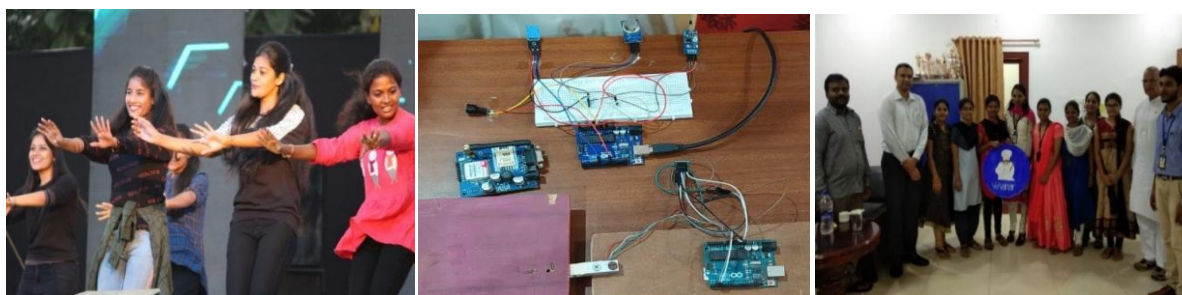


Figure B.9.6.2: Various Entrepreneurs

### 9.7. Co-Curricular and Extra-Curricular Activities (10):

As per our vision, institute constantly believes to produce not only the knowledgeable students but professionals of all round personality by providing various co-curricular and extracurricular activities. We believe that it helps not only getting placements but also helps them to grow their leadership qualities.

**Health concerns for girls:** It is shocking to note that during admission 70% of the girls are suffering from blood deficiency which indirectly hampers their learning abilities. To overcome this we have put some remedies like we make student to run 1 km in playground and provide groundnuts with jaggery in order to improve the iron percentage in blood results. Consequently it improves strength to the muscle and also we ask them to participate in co-curricular activities.

### 9.7.1 Co-Curricular Activities:

Co-curricular activities are attempted alongside with academic studies. Most commonly, outside the normal classrooms co-curricular activities are performed and they augment academic curriculum and lend a hand for learning by doing. These activities help students to enhance their problem-solving, critical thinking, reasoning, creative thinking, communication, and collaborative abilities.

Involvement in any co-curricular activities helps students in emotional development, social skill development, and overall personality development.

By providing the co-curricular activities with various clubs, the students immensely gained rapid advancement in their career.

Following are the names of clubs available in co-curricular activities.

- A. Academic club
- B. Techkrithi club
- C. Activity club
- D. Shristi club
- E. Navitas club

**9.7.1. A. Academic club:** the following academic activities conducted through academic club as listed below.

- Workshop
- Guest lecture
- Seminars
- Internship

### Academic Year 2019-2020

**Table 9.7.1.A.1: Details of Workshops**

S.No	Name of The Event	Date of The Event	Host of The Event/ Resource Person	Branch	No.of Participants	Outcome	Relevance's Po's
1	MSTP Workshop	20.08.2019 To 28.08.2019	APSSDC	CSE	60	Student unique coding skills with competitive spirit which helped them clearing technical interviews	PO1,PO2,PO3, PO4,PO5
2	Android Biotics & Android Based Robotics	24.12.2019 To 25.12.2019	Mr. Deepak Mourya, Mr. Jayesh Sharma	CSE	98		PO1,PO2,PO3, PO4,PO5,PO6, PO10
3	Cyber Security And Ethical Hacking	15.06.2019 To 21.06.2019	GITAM	CSE	2		PO1,PO2,PO3, PO4,PO5,PO6, PO8,PO12

4	Workshop On Machine Learning Using Python	07.05.2019 To 13.05.2019	JNTUH	CSE	1	and screening tests.	PO1,PO2,PO3, PO5,PO9,PO10,PO12
5	Web Development Using Python	19.08.2019 To 26.08.2019	VIIT	CSE	1		PO1,PO2,PO3, PO5,PO9,PO10,PO12
6	Workshop On Ethical Hacking And Cyber Security.	07.02.2019 To 08.02.2019	ANITS, Visakhapatnam	CSE	8		PO1,PO2,PO3, PO4,PO5,PO6, PO8,PO12
7	International Workshop On AI And Soft Computing	06.12.2019 To 08.12.2019	VIIT	CSE	1	Student unique coding skills with competitive spirit which helped them clearing technical interviews and screening tests	PO1,PO2,PO3, PO4,PO5,PO6, PO8,PO11,PO12
8	Workshop on IOT	02.03.2019 And 03.03.2019	IIT Hyderabad.	CSE	6		PO1,PO2,PO4, PO5,PO8,PO11,PO12
9	Web Development By Engineers Hub	20.12.2019 And 21.12.2019	Andhra University, Visakhapatnam	CSE	1		PO1,PO2,PO3, PO4,PO5,PO9, PO10,PO11,P O12
10	Mobile Application Development By Engineer's Hub	22.12.2019 And 23.12.2019	Andhra University, Visakhapatnam	CSE	1		PO1,PO2,PO3, PO4,PO5,PO9, PO10,PO11,P O12
11	Internet Of Things	20.07.2019 To 21.07.2019	Indian Institute Of Technology(II T) ,Hyderabad	CSE	5		PO1,PO2,PO4, PO5,PO8,PO11,PO12
12	Internet Of Things	02.03.2019 To 03.03.2019	Indian Institute Of Technology(II T) ,Hyderabad	CSE	6		PO1,PO2,PO4, PO5,PO8,PO11,PO12
13	Ethical Hacking And Cyber Security	07.02.2019 To 08.02.2019	ANITS	CSE	1	Student unique coding skills with competitive spirit which helped them clearing technical interviews and screening tests	PO1,PO2,PO3, PO4,PO5,PO6, PO8,PO12
14	Mobile Application Development With Android	11.12.2019 To 12.12.2019	GITAM	CSE	1		PO1,PO2,PO3, PO4,PO5,PO9, PO10,PO11,P O12
15	Cyber Security And Ethical Hacking.	28.09.2019 To 29.09.2019	GITAM	CSE	1		PO1,PO2,PO3, PO4,PO5,PO6, PO8,PO12
16	Internet Of Things	20.07.2019 To 21.07.2019	IIT HYD	CSE	1		PO1,PO2,PO4, PO5,PO8,PO11,PO12
17	Block Chain Technology	02.01.2019 To 04.01.2019	GMRIT	CSE	1		PO1,PO2,PO3, PO4,PO6,PO10,PO11,PO12
18	Artificial Intelligence And Soft Computing	06.12.2019 To 07.12.2019	VIIT	CSE	1		PO1,PO2,PO3, PO4,PO5,PO6, PO8,PO11,PO12

19	Ethical Hacking By Techobyte.	05.01.2019 To 06.01.2019	IIT Hyderabad	CSE	1		PO1,PO2,PO3, PO4,PO5,PO6, PO8,PO12
20	Cloud Computing	25.08.2019 To 26.08.2019	BITS	CSE	1		PO1,PO2,PO3, PO4,PO8,PO10,PO11,PO12
21	Ethical Hacking By Techobyte.	05.01.2019 To 06.01.2019	IIT Hyderabad	CSE	2		PO1,PO2,PO3, PO4,PO5,PO6, PO8,PO12
22	Workshop On Developing Server Less Applications	19.01.2019	Symbiosis Technologies Rushikonda	CSE	4	Student Unique Coding Skills With Competitive Spirit Which Helped Them Clearing Technical Interviews And Screening Tests	PO1,PO2,PO3, PO4,PO5,PO9, PO12
23	Data Science Workshop	25.02.2019 To 26.02.2019	JNTU Vizianagaram	CSE	6		PO1,PO2,PO3, PO4,PO6,PO9, PO12
24	4G/5G Lite	15.02.2019 To 16.02.2019	VIIT	CSE	1		PO1,PO2,PO3, PO4,PO5,PO9, PO10,PO11,PO12
25	Udacity, Nano Degree Program For Android Developer	18.01.2019 To 22.01.2019	Udacity	CSE	7		PO1,PO2,PO3, PO4,PO5,PO9, PO10,PO11,PO12
26	Web Technologies Using Python	19.08.2019 To 28.08.2019	Mr.M.Prasanna Raju &Mr.M.V.Gop i	CSE	198		PO1,PO2,PO3, PO5,PO9,PO10,PO12
27	Cyber Security And Ethical Hacking	09.09.2019 To 10.09.2019	Mr. Manish Yadav	CSE	100		PO1,PO2,PO3, PO4,PO5,PO6, PO8,PO12
28	Problem Solving Skills Using C	03.09.2019 To 07.09.2019	APSSDC	IT	54		PO1,PO2,PO3, PO4,PO9,PO11
29	Game Development Using Blue Box	17.03.2020 To 19.03.2020	APSSDC	IT	54		PO1,PO2,PO3, PO4,PO5,PO9, PO10,PO11,PO12
30	Problem Solving Using Python	18.03.2020 To 20.03.2020	APSSDC	IT	54		PO1,PO2,PO3, PO5,PO9,PO10,PO12
31	Machine Learning	27.05.2020 To 29.05.2020	Brain-O-Vision	IT	99	PO1,PO2,PO3, PO5,PO9,PO10,PO12	
32	Mobile App. Development	12.08.2019	Student Solution Body	IT	7	PO1,PO2,PO3, PO4,PO5,PO9, PO10,PO11,PO12	
33	Raspberry Pi	25.08.2019	HMI Services	IT	2	PO1,PO2,PO3, PO4,PO5,PO9, PO10,PO11,PO12	
34	Starts For Entrepreneurs	04.04.2019	Smt.Sai Lakshmi	MBA	100	PO1,PO5,PO6, PO7,PO9,PO10,PO12	

35	Women Empowerment It As Enabler: Digital India	26.11.2019	Mr.M.P.Dubey Mr.R.L.Narayana Smt.Lakshmi Dr.K.Suseela	MBA	100	PO1,PO2,PO3, PO6,PO7,PO8
36	Women Empowerment It As Enabler: Digital India	26.11.2019	Mr.M.P.Dubey Mr.R.L.Narayana Smt.Lakshmi Dr.K.Suseela	MBA	250	PO1,PO2,PO3, PO6,PO7,PO8
37	Grid Connected Power System And Its Applications	28.8.2019	The Institution Of Engineers (India)-Mr. Ajay R, NTPC	EEE	100	PO1,PO2,PO3, PO5,PO7,PO10,PO11,PO12
38	Facts	17.12.2019	The Institution Of Engineers (India)-Sri. Venkataratnam .M	EEE	80	PO1,PO2,PO3, PO5,PO7,PO10,PO11,PO12
39	Soft Computing Techniques	17.12.2019	The Institution Of Engineers (India)- Dr.Salma U	EEE	80	PO1,PO2,PO3, PO4,PO8,PO10,PO11,PO12



**Figure 9.7.1 Illustrations of various workshops**

**Table 9.7.1.A.2:Details of Guest Lecture**

S.No	Name Of The Event	Date Of The Event	Host Of The Event/Resource Person	Branch	No Of Participants	Outcome	Relevance's Po's
1	Importance Of IOT In Marine Engineering	11.01.2019	By Mr.Sk.Dubey	CSE	120	Student unique coding skills with competitive spirit which helped them clearing technical interviews and screening tests	PO1,PO2,PO4,PO5,PO8,PO11,PO12
2	Block Chain Technology And Its Applications(Guest Lecture)	26.12.2019.	By Mr. T. Siva Rama Krishna	CSE	105		PO1,PO2,PO3,PO4,PO6,PO10,PO11,PO12
3	Bridging The Gap Between The Students And Academia	26.12.2019.	By Mr. T. Suresh	CSE	87		PO1,PO6,PO7,PO8,PO11
4	Environmental Sustainability (Guest Lecture)	18.07.2019	By Dr.D.Raja Kishore	CSE	80		PO1,PO2,PO4,PO7,PO8,PO11,PO12
5	Cyber Security(Guest Lecture)	22.08.2019	Mr. Manish Yadav	CSE	100		PO1,PO2,PO3,PO4,PO5,PO6,PO8,PO12
6	Control Techniques For Efficient DC Power Management	21.09.2019	The Institution Of Engineers (India)-Prof. Amitpatro, IIT Kharagpur	EEE	100	Student unique coding skills with competitive spirit which helped them clearing technical interviews and screening tests	PO1,PO2,PO3,PO5,PO7,PO10,PO11,PO12
7	Power Generation Systems	29.12.2019	The Institution Of Engineers (India)-Sri.Rama Krishna Chebrolu, Additional General Manager, Hinduja Corporation Pvt Ltd.	EEE	135		PO1,PO2,PO3,PO5,PO7,PO10,PO11,PO12
8	Introduction To Power Electronics	18.12.2019	The Institution Of Engineers (India)-Prof.Sastryv.V edula	EEE	80		PO1,PO2,PO3,PO5,PO7,PO10,PO11,PO12
9	Securities And Derivative Markets	17.08.2019	P.Surya Teja, Bdo Karvy Pvt Ltd	MBA	150		PO2,PO6,PO7,PO9,PO10,PO12

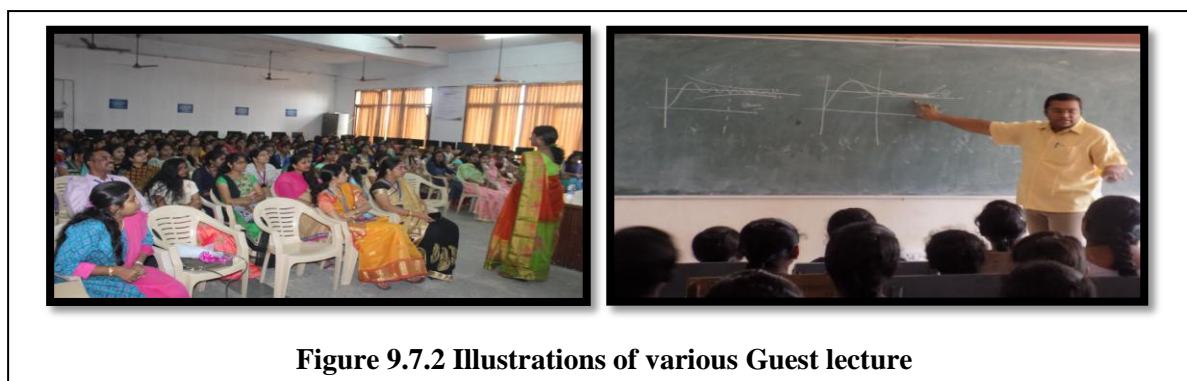


Figure 9.7.2 Illustrations of various Guest lecture

Table 9.7.1.A.3: Details of Seminar

S.No	Name of The Event	Date of The Event	Host of The Event/Resource Person	Branch	No of Participants	Outcome	Relevance's Po's
1	Stem Robots For Industrial Education And Industrial Robots For Manufacturing Automation	22.9.2019	The Institution Of Engineers (India)-Sudhir Reddy, Director, Jay Robotix Hyderabad, Sudhirsanna, Professor And Ceo Robotics And Automation	EEE	100	Student unique coding skills with competitive spirit which helped them clearing technical interviews and screening tests	PO1,PO2,PO3,PO4,PO5,P06,PO11,PO12
2	Introduction Of Power Systems	29.12.2019	The Institution Of Engineers (India)- Sri.B.Durga Prasad, Associate Professor	EEE	135		PO1,PO2,PO3,PO5,PO7,P010,PO11,P012
3	Power Electronics In Battery Storage Application	29.12.2019	The Institution Of Engineers (India)-Dr. Visakha	EEE	135		PO1,PO2,PO3,PO5,PO7,P010,PO11,P012
4	Introduction To Smart Grid	18.12.2019	The Institution Of Engineers (India)- Sri.Manoj Kumar, Dy.General Manager, RINL-Visakhapatnam Steel Plant	EEE	80		PO1,PO2,PO3,PO5,PO7,P010,PO11,P012
5	Cyber Security(Seminar)	10.01.2019	By Mr.S.Chandramouli At View	CSE	70		Student unique coding skills with competitive



6	Machine Learning With R Programming	10.01.2019	By Dr.A.Krishna Mohan At View	CSE	70	spirit which helped them clearing technical interviews and screening tests.	PO1,PO2,PO3,PO5,PO9,PO10,PO12
7	Recent Trends In Emerging Technologies	10.01.2019	By Dr.Ch.Jaya Suma At View	CSE	60		PO1,PO2,PO3,PO6,PO10
8	Seminar On Flutter Interact	23.12.2019	Miracle Software Solutions	CSE	1		PO1,PO2,PO3,PO4,PO5,PO6,PO8,PO12
9	Women Empowerment By Nannapaneni Raja Kumari	10.08.2019	VIIT	CSE	22	Student Unique Coding Skills With Competitive Spirit Which Helped Them Clearing Technical Interviews And Screening Tests	PO1,PO2,PO3,PO6,PO7,PO8
10	Motivational Talk on development employability skills	13.02.2019	By Dr.Obulapathi challa	IT	50		PO1,PO6,PO8,PO10,PO11
11	Cyber Security	22.10.2019	Brain-O-Vision	IT	80		PO1,PO2,PO3,PO4,PO5,PO6,PO8,PO12
12	Abroad Studies	17.09.2019	NC At Fortune Inn	IT	15		PO1,PO5,PO6,PO10,PO11,PO12
13	Listen To Life	13.06.2019	Jci, Waltair	IT	2		PO1,PO6,PO8,PO10,PO11
14	AISEC	21.06.2019	AISEC	IT	15		PO1,PO2,PO3,PO4,PO5,PO6,PO8,PO12
15	Financial Management Initiatives In Financial Institutes	29.01.2020	K. Sambha Murthy	MBA	60		PO2,PO6,PO7,PO9,PO10,PO12
16	Wails-2k19	12.12.2019	Ms.Neeraja Hari	MBA	200		PO2,PO6,PO7,PO9,PO10,PO12
17	National Level Management Meet-Pageantry-2k19	04.04.2019	Sri.Kvt Ramesh	MBA	500	PO2,PO6,PO7,PO9,PO10,PO12	

**Table 9.7.1.A.4:Details of Internships**

S.No	Name of The Event	Date of The Event	Name of The Student	Branch	Host of The Event	Outcome	Relevance's Pos
1	Campus Ambassador	28.07.2019 to Present	Kalaga Sahitya	CSE	Techfest, IIT Bombay	Students developed employment skills and necessary Attitude for Succeed in various job opportunities	PO1,PO2,P03,PO5,PO7,PO8,PO9, PO12
2	Campus Ambassador	04.08.2019 to Present	Kalaga Sahitya	CSE	Abhuday , IIT Bombay		
3	Campus Ambassador	29.10.2019 to Present	Kalaga Sahitya	CSE	Bits Pilani, Goa		
4	Campus Ambassador	03.01.2019 to Present	Kalaga Sahitya	CSE	Coding Ninjas		
5	Web Development	12.10.2019 To Present	Kalaga Sahitya	CSE	Kalakar	Students developed employment skills and necessary attitude for succeed in various job opportunities	PO1,PO2,P03,PO4,PO5,PO6,PO8, PO12
6	Artificial Intelligence	10.05.2018 To 12.06.2019	Kalepu Sreeja	CSE	HMI Robo Coupler Engineering Services		PO1,PO2,P03,PO4,PO5,PO6,PO8, PO11,PO12
7	Artificial Intelligence	10.05.2019 To 12.06.2019	Kammili Tanuja	CSE	HMI Robo Coupler Engineering Services		PO1,PO2,P03,PO4,PO5,PO6,PO8, PO11,PO12
8	App Development	20.05.2019 To 20.06.2019	Karaka Jyoshna	CSE	HMI Robo Coupler Engineering Services		PO1,PO2,P03,PO4,PO5,PO9,PO10 ,PO11,PO12
9	Web Application Development.	17.05.2019 To 06.06.2019	Kola Lavanya	CSE	Atom Software Solutions		O1,PO2,PO3,PO4,PO5, PO6,PO8,P O12
10	Artificial Intelligence	10.05.2019 To 12.06.2019	Kovela Hema Sri	CSE	Hmi Robo Coupler And Engineering Services		PO1,PO2,P03,PO4,PO5,PO6,PO8, PO11,PO12
11	Android Development	15.05.2019 To 15.06.2019	Kundrapu Divya	CSE	Robot Coupler And HMI		PO1,PO2,P03,PO4,PO5,PO9,PO10 ,PO11,PO12

12	Cyber Security And Ethical Hacking	08.05.2019 To 02.06.2019	Vurukuti.Mounica	CSE	Tocmoc Solutions		PO1,PO2,P03,PO4,PO5,PO6,PO8,PO12	
13	Cyber Security And Ethical Hacking	25.05.2019 To 25.06.2019	Velaga.De Vi Lakshmi Rajeswari	CSE	Tocmoc Solutions	Students developed employment skills and necessary attitude for succeed in various job opportunities	PO1,PO2,P03,PO4,PO5,PO6,PO8,PO12	
14	Mobile Application Development	10.06.2019 To 10.07.2019	Sappa Sandhyar Ani	CSE	Engineers Hub		PO1,PO2,P03,PO4,PO5,PO9,PO10,PO11,PO12	
15	Python	10.05.2019 To 10.06.2019	Sanapathi Sravani	CSE	Engineering Giants 16rob17 Coupler Techno		PO1,PO2,P03,PO5,PO9,PO10,PO12	
16	1. Artificial Intelligence	13.05.2019 To 31.05.2019	Sai Rakshitha Pulagala	CSE	1. Smart Bridge Collaborated With IBM		Students developed employment skills and necessary attitude for succeed in various job opportunities	PO1,PO2,P03,PO4,PO5,PO6,PO8,PO11,PO12
	2. Robotics And Automation	12.12.2019 To 19.12.2019			2. EliteTechno Groups			
17	Cyber Security And Ethical Hacking	20 Days – 25.05.2019 To 15.06.2019	Ramadalai Keerthi	CSE	Tocmoc Solutions			PO1,PO2,P03,PO4,PO5,PO6,PO8,PO12
18	IOT	15.11.2019 To 22.11.2019	Pusapati Revathi	CSE	Appleton Innovations			PO1,PO2,P04,PO5,PO8,PO11,PO12
19	Artificial Intelligence With Python & IBM Watson	13.05.2019 To 31.05.2019	Petakamsetty Sri Jyothi Meghana	CSE	Smart Bridge In Collaboration With IBM			PO1,PO2,P03,PO5,PO9,PO10,PO12
20	Power Utility - New Service Connection Module	15.05.2019 To 12.06.2019	Pentakota Venkata Satya Likhitha	CSE	Fluent Grid Limited (Formerly Phoenix It Solutions Ltd.)			PO1,PO2,P03,PO5,PO9,PO10,PO12
21	Artificial Intelligence By HMI Services	15.05.2019 To 31.05.2019	Pamula Gayathri	CSE	HMI Services 37 17nm1a0 5c2 Paricharl			Students developed employment skills and necessary

					A Lahari 15-05-2019 To 12-06-2019 Power Utility	attitude for succeed in various job opportunities	
22	Web Development	06.01.2019 To 13.07.2019	Palem Sushma	CSE	Internsha la		PO1,PO2,P O3,PO4,PO 5,PO6,PO8, PO12
23	1.Campus Ambassador 2.Web Development	07.07.2019 To 07.12.2019	Nupur Das	CSE	IIT Bombay		PO1,PO2,P O3,PO4,PO 5,PO6,PO8, PO12
24	1. E- Cell Lucknow	1.04.01.20 20 To 04.03.2020	Nukala Sruthi	CSE	1. IIM Lucknow	Students developed employment skills and necessary attitude for succeed in various job opportunities	PO1,PO2,P O3,PO4,PO 6,PO7,PO9, PO10
	2. Intellect Browser's Consortium	2. 10.01.2020 To 10.03.2020			2.NIT		
	3.Indian Road Safety Campaign	3. 18.09.2019 To 18.02.2020			3.IRSC- India Road Safety Campaig n		

### Academic Year 2018-2019

**Table 9.7.1.A.5: Details of Workshops**

S.No	Name of The Event	Date of The Event	Host of The Event/Resource Person	Branch	No.of Particip ants	Outcome	Relevance's Pos
1	Google Android Fundamentals Phase - 2	21.09.2018 To 23.09.2018	Ms.Hema Mr.G.Srikanth	CSE	74	Student unique coding skills with competitiv e spirit which helped them clearing technical interviews and screening tests.	PO1,PO2,PO3 ,PO4,PO5,PO 9,PO10,PO11, PO12
2	Android Development Certification (APSSDC+UDE MY)	08.05.2018 To 14.05.2018	Ms.Hema Mr.G.Srikanth	CSE	21		PO1,PO2,PO3 ,PO4,PO5,PO 9,PO10,PO11, PO12
3	Android Development Certification (APSSDC+UDE MY)	11.08.2018 To 16.08.2018	Ms.Hema Mr.G.Srikanth	CSE	69		PO1,PO2,PO3 ,PO4,PO5,PO 9,PO10,PO11, PO12

4	IOT Certification (COURSERA + APSSDC)	08.05.2018 To 14.05.2018	Ms.Hema Mr.G.Srikanth	CSE	10		PO1,PO2,PO4 ,PO5,PO8,PO 11,PO12
5	Gamification With AR & VR – Build Box	26.12.2018 Daily 2 Hours 2 Weeks	Ms.Hema Mr.G.Srikanth	CSE	23		PO1,PO2,PO3 ,PO4,PO5,PO 6,PO8,PO12
6	Scale	26.07.2018 To 28.07.2018	Shreya Adabala,Sanket dhadke,Rafaesh aik, Hashmitha Rani	CSE	47		PO1,PO2,PO3 ,PO4,PO5,PO 6,PO8,PO12
7	Workshop On Web Development Using React Native	20.12.2018 To 23.12.2018	Andhra University Platinum Jubilee Guest House	CSE	1	Student unique coding skills with competitive spirit which helped them clearing technical interviews and screening tests.	PO1,PO2,PO3 ,PO4,PO5,PO 6,PO8,PO12
8	Workshop On CII Partnership Summit 2018	24.02.2018 To 26.01.2018	APIIC Ground, Harbor Park, Visakhapatnam	CSE	1		PO1,PO2,PO4 ,PO6,PO8,PO 9,PO12
9	Workshop On Cyber Security & Malware Analysis	17.09.2018 To 18.09.2018	Coastal Institute Of Technology & Management	CSE	1		PO1,PO2,PO3 ,PO4,PO5,PO 6,PO8,PO12
10	Workshop On 4G/5G	15.02.2018 To 16.02.2018	Vignan's Institute Of Information Technology	CSE	24		PO1,PO2,PO3 ,PO4,PO5,PO 9,PO10,PO11, PO12
11	Workshop On Mobile Application Development	22.12.2018 To 23.12.2018	Andhra University (Platinum Jubilee House Seminar Hall)	CSE	28		PO1,PO2,PO3 ,PO4,PO5,PO 9,PO10,PO11, PO12
12	Workshop On Web Application Development	20.12.2018 To 21.12.2018	Andhra University (Platinum Jubilee House Seminar Hall)	CSE	16	Student unique coding skills with competitive spirit which helped them clearing technical interviews and screening tests.	PO1,PO2,PO3 ,PO4,PO5,PO 6,PO8,PO12
13	Robotics Workshop	21.02.2018 To 22.02.2018	Andhra University (Platinum Jubilee House Seminar Hall)	CSE	1		PO1,PO2,PO3 ,PO4,PO
14	Cloud Computing With Amazon Web Services.	13.08.2018 To 14.08.2018	Baba Institute Of Technology And Sciences	CSE	2		PO1,PO2,PO3 ,PO4,PO8,PO 10,PO11,PO1 2

15	Cloud Computing	08.12.2018	VIIT	CSE	1		PO1,PO2,PO3,PO4,PO8,PO10,PO11,PO12
16	Workshop On Artificial Intelligence	17.02.2018 To 18.02.2018	Cisco Networking Academy	CSE	1		PO1,PO2,PO3,PO4,PO5,PO6,PO8,PO11,PO12
17	Web Application Development Workshop	20.12.2018 To 21.12.2018	AU	CSE	13		PO1,PO2,PO3,PO4,PO5,PO6,PO8,PO12
18	Mobile Application Development Workshop	22.12.2018 To 23.12.2018	AU	CSE	22		PO1,PO2,PO3,PO4,PO5,PO9,PO10,PO11,PO12
19	4G/5G Workshop	14.09.2018 To 15.09.2018	VIIT	CSE	16		PO1,PO2,PO3,PO4,PO5,PO9,PO10,PO11,PO12
20	Artificial Intelligence And Soft Computing Workshop	06.12.2018 To 08.12.2018	VIIT	CSE	5		PO1,PO2,PO3,PO4,PO5,PO6,PO8,PO11,PO12
21	IOT Based Power System Components Protection	28.8.2018	The Institution Of Engineers (India)-Prof. Andrzej Rusenski University Of New Hampshire, Usa, Mr. Naresh Kumar Oruganti, Founder & Ceo Of Symbiosis Technologies &Mr. M P Dubey, Joint Director And Officer In Charge Of STPI	EEE	120	Student unique coding skills with competitive spirit which helped them clearing technical interviews and screening tests.	PO1,PO2,PO4,PO5,PO8,PO11,PO12

22	Basic Of Distribute Transmission System	28.12.2018	The Institution Of Engineers (India)- Sri.S.Sanjay, Deputy Executive Engineer, Ap Transco	EEE	135		PO1,PO2,PO4 ,PO5,PO8,PO 11,PO12
23	IOT (APSSDC)	14.05.2018 To 02.06.2018	APSSDC	ECE	47		PO1,PO2,PO4 ,PO5,PO8,PO 11,PO12
24	AI And ML Workshop Using R	29.08.2018 To 01.09.2018	VIEW	ECE	152		PO1,PO2,PO3 ,PO4,PO5,PO 6,PO8,PO11,PO 12
25	Embedded Systems	15.06.2018 To 16.06.2018	Teck Team Solutions	ECE	1		PO1,PO2,PO4 ,PO5,PO8,PO 11,PO12
26	Robotics And IOT Workshop	18.08.2018 To 19.08.2018	Bits Pilani,Hyderabad	ECE	13		PO1,PO2,PO4 ,PO5,PO8,PO 11,PO12
27	Electronova	28.09.2018 To 30.09.2018	Technozion-Nit Warangal	ECE	3	Student unique coding skills with competitive spirit which helped them clearing technical interviews and screening tests.	PO1,PO2,PO4 ,PO5,PO8,PO 11,PO12
28	Humanoid Robotics	29.09.2018	Utkraanti(Workshop)S-NIT Warangal	ECE	3		PO1,PO2,PO3 ,PO4,PO5,PO 6,PO11,PO12
29	IOT Workshop	04.09.2018 To 06.12.2018	APSSDC	ECE	44		PO1,PO2,PO4 ,PO5,PO8,PO 11,PO12
30	Ethical Hacking Workshop	23.01.2018	IIT Madras	ECE	3		PO1,PO2,PO3 ,PO4,PO5,PO 6,PO8,PO12
31	IOT Workshop	01.02.2018 To 02.02.2018	Gayatri Vidya Parishad College Of Engineering	ECE	1		PO1,PO2,PO4 ,PO5,PO8,PO 11,PO12

**Table 9.7.1.A.6: Details of Seminars**

S.No	Name of The Event	Date of The Event	Host of The Event/Resource Person	Branch	No.of Participants	Outcome	Relevance's Pos
1	HVDC Transmission	22.02.2018	The Institution Of Engineers (India)- Dr.G.Saraswathi , Principal, Jntuk, Vizianagaram.	EEE	130	Student unique coding skills with competitive spirit which helped them clearing technical interviews and screening tests	PO1,PO2,PO4 ,PO5,PO8,PO 11,PO12
2	Introduction Of Robokart	22.02.2018	The Institution Of Engineers (India)- Dr.O.Ramamoh anarao, Chairman, Iei Visakhapatnam Local Center, Visakhapatnam	EEE	130	Student Unique Coding Skills With Competitive Spirit Which Helped Them Clearing Technical Interviews And Screening Tests	PO1,PO2,PO4 ,PO5,PO8,PO 11,PO12
3	Digital Transformation	22.9.2018	The Institution Of Engineers (India)- Mr.M.Chandras ekhar, Program Manager, Tcs, Hyderabad	EEE	120	Student Unique Coding Skills With Competitive Spirit Which Helped Them Clearing Technical Interviews And Screening Tests	PO1,PO2,PO3 ,PO5,PO7,PO 10,PO11,PO1 2
4	“Skills First Jobs Follow”	28.12.2018 To 29.12.2018	The Institution Of Engineers (India)-Mr. Suresh Kumar Tankala, Mobility Solution Architect & Lead Consultant, Wipro	EEE	135	Student Unique Coding Skills With Competitive Spirit Which Helped Them Clearing Technical Interviews And Screening Tests	PO1,PO2,PO3 ,PO5,PO8,PO 9,PO11,PO12
5	Seminar On Artificial Intelligence And Soft Computing	06.12.2018	VIIT	CSE	1	Student unique coding skills with competitive spirit which helped them clearing technical interviews and screening tests	PO1,PO2,PO3 ,PO4,PO5,PO 6,PO8,PO11,P O12
6	Cloud Computing	08.12.2018	VIIT	CSE	1	Student unique coding skills with competitive spirit which helped them clearing technical interviews and screening tests	PO1,PO2,PO3 ,PO4,PO8,PO 10,PO11,PO1 2
7	Women Empowerment Seminar	10.03.2018	VIIT	CSE	3	Student unique coding skills with competitive spirit which helped them clearing technical interviews and screening tests	PO1,PO2,PO3 ,PO6,PO7,PO 8
8	Awareness On Women Health Care	08.03.2018	Dr.Getha Vandana Md	MBA		Student unique coding skills with competitive spirit which helped them clearing technical interviews and screening tests	PO2,PO4,PO7 ,PO8,PO10,P O11



**Table 9.7.1.A.7:Details of Guest Lectures**

S.No	Name of The Event	Date of The Event	Host of The Event/Resource Person	Branch	No.of Participants	Outcome	RELEVANC E'S POS
1	Circuit Breakers & Relays	21.02.2018	The Institution Of Engineers (India)- Prof.I.Satyanarayana, Ex-Chairman, Iei Visakhapatnam Local Center, Visakhapatnam	EEE	130	Student unique coding skills with competitive spirit which helped them clearing technical interviews and screening tests.	PO1,PO2,PO4 ,PO5,PO8,PO 11,PO12
2	Electrical Circuits & Applications With Mat Lab	21.9.2018	The Institution Of Engineers (India)- Dr.Sukumar Mishra, Professor From iitdelhi	EEE	120		PO1,PO2,PO3 ,PO5,PO7,PO 10,PO11,PO1 2
3	Wails-2k18	14.03.2018	M.Gopi	MBA	150		PO2,PO6,PO7 ,PO9,PO10,P O12

**Table 9.7.1.A.8: Details of Internships**

S.No	Name of The Event	Date of The Event	Name of The Student	Branch	Host of The Event	Outcome	Relevance's Pos
1	Telecommunication	24.04.2018 To 05.05.2018	Palla Sandhya	ECE	visakhapatnam steel plant	Students developed employment skills and necessary attitude for succeed in various job opportunities	PO1,PO2,PO3 ,PO4,PO5,PO 9,PO10,PO11, PO12
2	Telecommunication	24.04.2018 To 05.05.2018	A Phani Priyanka	ECE	visakhapatnam steel plant		
3	Telecommunication	24.04.2018 To 05.05.2018	Yerra Sireesha	ECE	visakhapatnam steel plant		
4	Telecommunication	24.04.2018 To 05.05.2018	Dadi Sai Vandana	ECE	visakhapatnam steel plant		
5	Telecommunication	24.04.2018 To 05.05.2018	Gottimukkala Poojitha	ECE	visakhapatnam steel plant		
6	Telecommunication	24.04.2018 To 05.05.2018	Pitta Mamatha	ECE	visakhapatnam steel plant		

**Academic Year 2017-2018****Table 9.7.1.A.9: Details of Workshops**

S.No	Name of The Event	Date of The Event	Host of The Event/Resource Person	Branch	No.of Participants	Outcome	Relevance's Pos
1	Google Android Fundamentals Phase - 1	21.07.2017 To 23.07.2017	Ms.Hema Mr.G.Srikanth	CSE	75	Student unique coding skills with competitive spirit which helped them clearing technical interviews and screening tests	PO1,PO2,PO3 ,PO4,PO5,PO 9,PO10,PO11, PO12+I149:I1 64
2	Bootstrap	21.07.2017 To 23.07.2017	Brain – O – Vision, Hyderabad	CSE	56		PO1,PO2,PO3 ,PO4,PO5,PO 9,PO11
3	AP Cloud Mean Stack And Cloud Developer	27.11.2017 To 29.11.2017	Ap Cloud Team, Miracle Software Solutions, Visakhapatnam	CSE	58		PO1,PO2,PO3 ,PO4,PO8,PO 10,PO11,PO1 2
4	IOT Workshop	14.09.2017 To 15.09.2017	Mr. V. Srinadhrao Vignan's Institute Of Information Technology	CSE	50		PO1,PO2,PO4 ,PO5,PO8,PO 11,PO12
5	Recent Trends On Financial Management"	5.12.2017	Mr.Ankit Jain M.Katyayani S.Lalitha	MBA	60	Student unique coding skills with competitive spirit which helped them clearing technical interviews and screening tests.	PO2,PO6,PO7 ,PO9,PO10,P O12
6	Multi-Level Inverter And Its Applications	28.8.2017	The Institution Of Engineers (India)- Sri.B.Durga Prasad, Associate Professor	EEE	110	PO1,PO2,PO3 ,PO4,PO5,PO 6,PO9,PO11,P O12	
7	Latest Developments And Limitations Of Indian Transmission Systems	28.12.2017	The Institution Of Engineers (India)- Sri.S.Narayana Murthy, Superintendent Engineer, Ap Transco	EEE	130	PO1,PO2,PO3 ,PO4,PO5,PO 6,PO9,PO11,P O12	
8	Vista 2k17 - PCB Design Workshop	14.09.2017 To 17.09.2017	VIIT	ECE	19	Student unique coding skills	PO1,PO2,PO4 ,PO5,PO8,PO 11,PO12

9	Vista 2k17 - Hands On Implementation Of IOT	14.09.2017 To 17.09.2017	VIIT	ECE	2	with competitive spirit which helped them clearing technical interviews and screening tests.	PO1,PO2,PO4 ,PO5,PO8,PO 11,PO12
10	Vista 2k17 - IOT Workshop	14.09.2017 To 17.09.2017	VIIT	ECE	2		PO1,PO2,PO4 ,PO5,PO8,PO 11,PO12
11	Vista 2k17 - Workshop On Embedded Systems And IOT	14.09.2017 To 17.09.2017	VIIT	ECE	8		PO1,PO2,PO4 ,PO5,PO8,PO 11,PO12
12	Embedded Systems Workshop	11.12.2017 To 13.12.2017	APSSDC	ECE	81		PO1,PO2,PO4 ,PO5,PO8,PO 11,PO12
13	Embedded Systems Workshop	14.12.2017 To 16.12.2017	APSSDC	ECE	81		PO1,PO2,PO4 ,PO5,PO8,PO 11,PO12

**Table 9.7.1.A.10: Details of Seminars**

S.No	Name of The Event	Date of The Event	Host of The Event/Resource Person	Branch	No.of Participants	Outcome	Relevance's Pos
1	Motivational Talk	03.09.2017	View	ECE	1	Student unique coding skills with competitive spirit which helped them clearing technical interviews and screening tests	PO2,PO6,PO7 ,PO8,PO9,PO 10,PO11
2	Facts	30.8.2017	The Institution Of Engineers (India)-Sri. Venkataratnam. M	EEE	110		PO1,PO2,PO3 ,PO5,PO7,PO 10,PO11,PO1 2
3	Renewable Energy Sources And Energy Efficiency	30.12.2017	The Institution Of Engineers (India)- Prof.Sastry V.Vedula	EEE	120		PO1,PO2,PO3 ,PO5,PO7,PO 10,PO11,PO1 2

**Table 9.7.1.A.11: Details of Guest Lectures**

S.No	Name of The Event	Date of The Event	Host of The Event/Resource Person	Branch	No.of Participants	Outcome	Relevance's Pos
1	High Voltage Power System Operation And Instrument Calibration	29.8.2017	The Institution Of Engineers (India)- Sri.Manoj Kumar, Dy.General Manager, Rlnl-Visakhapatnam Steel Plant	EEE	110	Student unique coding skills with competitive spirit which helped them clearing technical interviews and screening tests	PO1,PO2,PO3 ,PO5,PO7,PO 10,PO11,PO1 2
2	Recent Trends In Dc-Dc Converters & Application On Power System	29.12.2017	The Institution Of Engineers (India)- Sri.S.Sanjay, Deputy Executive Engineer ,Ap Transco	EEE	120	Student unique coding skills with competitive spirit which helped them clearing technical interviews and screening tests	PO1,PO2,PO3 ,PO5,PO7,PO 10,PO11,PO1 2
3	Wails-2k17	25.8.2017	Smt.Madhuri	MBA	200	Student unique coding skills with competitive spirit which helped them clearing technical interviews and screening tests	PO2,PO6,PO7 ,PO9,PO10,P O12
4	National Level Management Meet-Pageantry- 2k17	23.3.2017	Smt.Shobha K S Rao Ifs	MBA	500	Student unique coding skills with competitive spirit which helped them clearing technical interviews and screening tests	PO2,PO6,PO7 ,PO9,PO10,P O12

**9.7.1. B. TECHKRITHI CLUB****Academic Year 2019-2020****Table 9.7.1.B.1: List of technical events covered in this club**

S.No	Type of The Event	Date of The Event	Name of The Event	Branch	No.of Participants	Outcome	Relevance's Pos
1	Finance Event	01.03.2019	Eclore 2k19	MBA	1	Students who actively participated in this club have achieved successful placement through knowledge gained in coding and management skills. Students who actively participated in this club have achieved successful placement through knowledge gained in coding and management skills.	PO2,PO3,PO9,PO10,PO12
2	Hr Event	01.03.2019	Eclore 2k19	MBA	1		PO2,PO3,PO9,PO10,PO12
3	Paper Presentation	01.09.2019	Vista Tech Fest	CSE	1		PO2,PO3,PO9,PO10,PO12
4	Google IT	29.07.2019	Wissenaire 2019	CSE	36		PO2,PO3,PO9,PO10,PO12
5	Idea Presentation	21.09.2019 To 23.09.2019	Wissenaire 2019	CSE	75		PO2,PO3,PO9,PO10,PO12
6	Debugging	24.12.2019	Wissenaire 2019	CSE	110		PO2,PO3,PO9,PO10,PO12
7	Paper Presentation	26.12.2019	Wissenaire 2019	CSE	30		PO2,PO3,PO9,PO10,PO12
8	Poster Presentation	26.12.2019	Wissenaire 2019	CSE	40		PO2,PO3,PO9,PO10,PO12
9	Technical Talk	27.12.2019	Wissenaire 2019	CSE	60		PO2,PO3,PO9,PO10,PO12

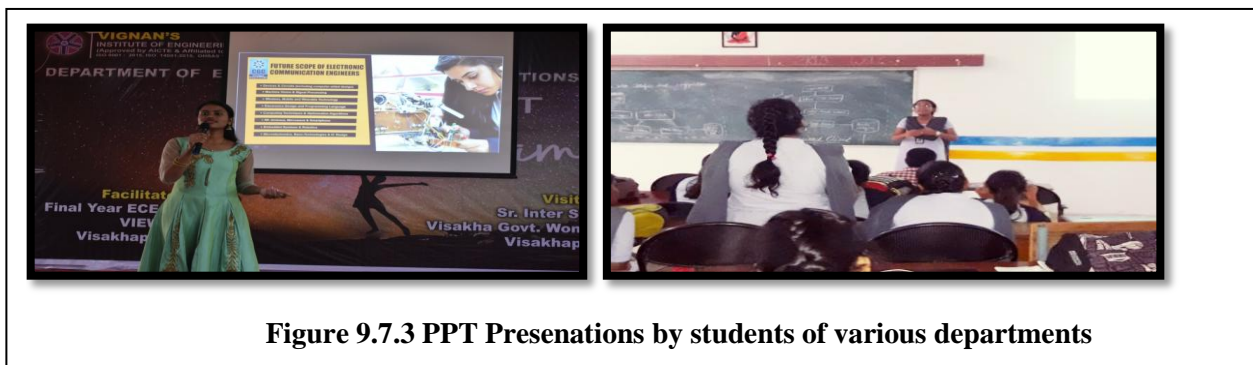
**Academic Year 2018-2019****Table 9.7.1.B.2: List of Technical Events Covered in This Club**

S.No	Type of The Event	Date of The Event	Name of The Event	Branch	No.of Participants	Outcome	Relevance's PO's
1	Smart India Hackathon	25.01.2018	Technology For Rural Development	ECE	6	Students who actively participated in this club have achieved successful placement through knowledge gained in coding & communication skills.	PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10
2	Smart India Hackathon	25.01.2018	IOT Based Smart Garbage System	ECE	6		PO1,PO2,PO4,PO5,PO8,PO11,PO12
3	Smart India Hackathon	25.01.2018	IOT Based Greenhouse Monitoring	ECE	6		PO1,PO2,PO4,PO5,PO8,PO11,PO12
4	Smart India Hackathon	25.01.2018	IOT Based Health Parameter Monitoring	ECE	6		PO1,PO2,PO4,PO5,PO8,PO11,PO12
5	Smart India Hackathon	25.01.2018	IOT Based Access Control System	ECE	6		PO1,PO2,PO4,PO5,PO8,PO11,PO13
6	Smart India Hackathon	25.01.2018	IOT Based Waste Management System	ECE	6	Students who actively participated in this club have achieved successful placement through knowledge gained in coding & communication skills.	PO1,PO2,PO4,PO5,PO8,PO11,PO14
7	Smart India Hackathon	25.01.2018	Location Based Crowded Sensing Framework For Pilgrims Monitoring System	ECE	6		PO1,PO2,PO4,PO5,PO8,PO11,PO14
8	Smart India Hackathon	25.01.2018	RFID & Arduino Based Access Control System	ECE	6		PO1,PO2,PO4,PO5,PO8,PO11,PO14
9	Smart India Hackathon	25.01.2018	Water Quality Monitoring Using IOT	ECE	6		PO1,PO2,PO4,PO5,PO8,PO11,PO14
10	Smart India Hackathon	25.01.2018	Soil Moisture Sensing & Monitoring	ECE	6		PO2,PO3,PO4,PO5,PO7,PO9,PO10,PO12
11	Smart India Hackathon	25.01.2018	IOT Based Agriculture Monitoring System	ECE	6		PO1,PO2,PO4,PO5,PO8,PO11,PO14
12	Smart India Hackathon	25.01.2018	IOT Based Biometric Based	ECE	6	Students who actively participated in this club	PO1,PO2,PO4,PO5,PO8,PO11,PO15

13	Smart IndiaHackathon	25.01.2018	IOTBased SCADA System	ECE	6	have achieved successful placement through knowledge gained in coding and communication skills.	PO1,PO2,PO4,PO5,PO8,PO11,PO16
14	Smart IndiaHackathon	25.01.2018	IOTBased Minimize Electricity Theft	ECE	6		PO1,PO2,PO4,PO5,PO8,PO11,PO17
15	Smart IndiaHackathon	25.01.2018	Vision Based Security System	ECE	6		PO1,PO2,PO3,PO4,PO5,PO6,PO8,PO12
16	Smart IndiaHackathon	25.01.2018	IOTBased Urban Bus Navigation	ECE	6	Students who actively participated in this club have achieved successful placement through knowledge gained in coding and communication skills.	PO1,PO2,PO4,PO5,PO8,PO11,PO17
17	Smart IndiaHackathon	25.01.2018	IOTBased Wireless Notice Board	ECE	6		PO1,PO2,PO4,PO5,PO8,PO11,PO18
18	Smart IndiaHackathon	25.01.2018	IOTBased Home Automation	ECE	6		PO1,PO2,PO4,PO5,PO8,PO11,PO19
19	Smart IndiaHackathon	25.01.2018	Real Time Student Monitoring System	ECE	6		PO1,PO2,PO3,PO4,PO5,PO6,PO8,PO9,PO10,PO11
20	Technical Quiz	13.09.2018	RIVERA 2K18	CSE	30		PO1,PO2,PO3,PO4,PO5,PO6,PO8,PO9,PO10,PO11
21	Live Models	14.09.2018 To 15.09.2018	RIVERA 2K18	CSE	6	PO1,PO2,PO3,PO4,PO5,PO6,PO8,PO9,PO10,PO11	

**Academic Year 2017-2018****Table 9.7.1.B.3:List of Technical Events Covered In This Club**

S.No	Type of The Event	Date of The Event	Name of The Event	Branch	No.of Participants	Outcome	Relevance's Pos
1	STEP CONE – 2017	27.01.2017 To 29.01.2017	Technical Paper Presentation Cognitive Radio	ECE	2	Students those who participated have gained good presentation skills.	PO1,PO2,PO3,PO4,PO5,PO6,PO9,PO10,PO11,PO12
2	Paper Presentation	14.09.2017	VISTA Tech Fest	CSE	2		
3	PPT Presentation	15.09.2017	VISTA Tech Fest	CSE	20		

**Figure 9.7.3 PPT Presentations by students of various departments**



**9.7.1. C. Activity Club****Academic Year 2019-2020****Table 9.7.1.C.1: Details of Various Activities Mentioned In This Club**

S.No	Type of The Event	Date of The Event	Name of The Event	Branch	No.of Participants	Outcome	Relevance's Pos	
1	Techritz 2019	11.02.2019	Project Expo(IOT Based Industrial Safety)	ECE	3	Students who actively participated in this club gained product developed knowledge which helped to develop unique projects	PO1,PO2,PO3 PO4,PO5,PO6 PO7,PO8,PO9 ,PO10,PO11,P O12	
2	Wissenaire 2019	14.09.2019 To 15.09.2019	BURST THE BUG	CSE	14		Students who actively participated in this club gained product developed knowledge which helped to develop unique projects	PO1,PO2,PO3 PO4,PO5,PO6 PO7,PO8,PO9 ,PO10,PO11,P O12
3	Wissenaire 2019	13.09.2019 To 14.09.2019	ACM HACATHON	CSE	2	PO1,PO2,PO3 ,PO4,PO5,PO 6,PO7,PO8PO 9,PO10,PO11, PO12		
4	Wissenaire 2019	21.12.2019	CODE BATTLE	CSE	1			PO1,PO2,PO3 PO4,PO5,PO6 ,PO7,PO8PO9 ,PO10,PO11,P O12
5	Wissenaire 2019	26.12.2019	LIVE MODELS	CSE	12			
6	Wissenaire 2019	14.09.2019 To 15.09.2019	DECODER	CSE	1			

**Figure 9.7.4: Students Innovative work on Live Models**

**Academic Year 2018-2019****Table 9.7.1.C.2: Details Of Various Activities Mentioned In This Club**

S.No	Type of The Event	Date of The Event	Name of The Event	Branch	No.of Participants	Outcome	Relevance's Pos
1	Techritz 2018	19.02.2018 To 20.02.2018	Technical Event (JAM)	ECE	2	Students who actively participated in this activity developed their time managing skills.	PO1,PO2,PO9,PO10
2	Rivera 2018	07.12.2018	CODE BATTLE	CSE	4		PO1,PO2,PO9,PO10
3	Rivera 2018	14.09.2018 To 15.09.2018	CODE WREK 2.O	CSE	4		PO1,PO2,PO9,PO10
4	Rivera 2018	14.09.2018 To 15.09.2018	HOUR CODE	CSE	4		
5	Rivera 2018	14.09.2018 To 15.09.2018	CODE BATTLE	CSE	4		

**Academic Year 2017-2018****Table 9.7.1.C.3: Details of Various Activities Mentioned In This Club**

S.No	Type of The Event	Date of The Event	Name of The Event	Branch	No.of Participants	Outcome	Relevance's Pos
1	Techritz 2017 (Navitas)	09.02.2017	Treasure Hunt	ECE	3	Students who have participated developed their communication and interaction skills to develop the spirit of teamwork	PO8,PO9,PO10
2	Techritz 2017 (Navitas)	09.02.2017	Electronics Word Event	ECE	9		PO8,PO9,PO10
3	Syiro-2017	14.09.2017 To 15.09.2017	CODE WREK	CSE	3		PO8,PO9,PO10
4	Syiro-2017	01.09.2017	TREASURE HUNT	CSE	25		PO8,PO9,PO10
5	Syiro-2017	13.09.2017	Fun Events	CSE	20		PO8,PO9,PO10
6	Syiro-2017	15.09.2017	Crafts Exhibition	CSE	50		PO8,PO9,PO10

**9.7.1. D.SHRISTI CLUB****Academic Year 2019-2020****Table 9.7.1.D.1: Details of Shristi Activities**

S.No	Type of The Event	Date of The Event	Name of The Event	Branch	No.of Participants	Outcome	Relevance's Pos
1	Social Welfare	23.12.2019	Aradhana Children Home (Orphanage) – Ashitha Foundation	IT	40	Students who participated in this activity improved their volunteering skills,	PO2,PO5,PO6,PO7,PO9,PO10
2	Seminar	10.08.2019	Women Empowerment	CSE	22	energy and money management	PO2,PO5,PO6,PO7,PO9,PO10

**Academic Year 2018-2019****Table 9.7.1.D.2: Details Of Shristi Activities**

S.No	Type of The Event	Date of The Event	Name of The Event	Branch	No.of Participants	Outcome	Relevance's Pos
1	Awareness Campaign	14.08.2018	Padha Yatra	IT	60	Students Who Participated In This Activity Improved Their Interaction Skills With The Society.	PO2,PO5,PO6,PO7,PO9,PO10

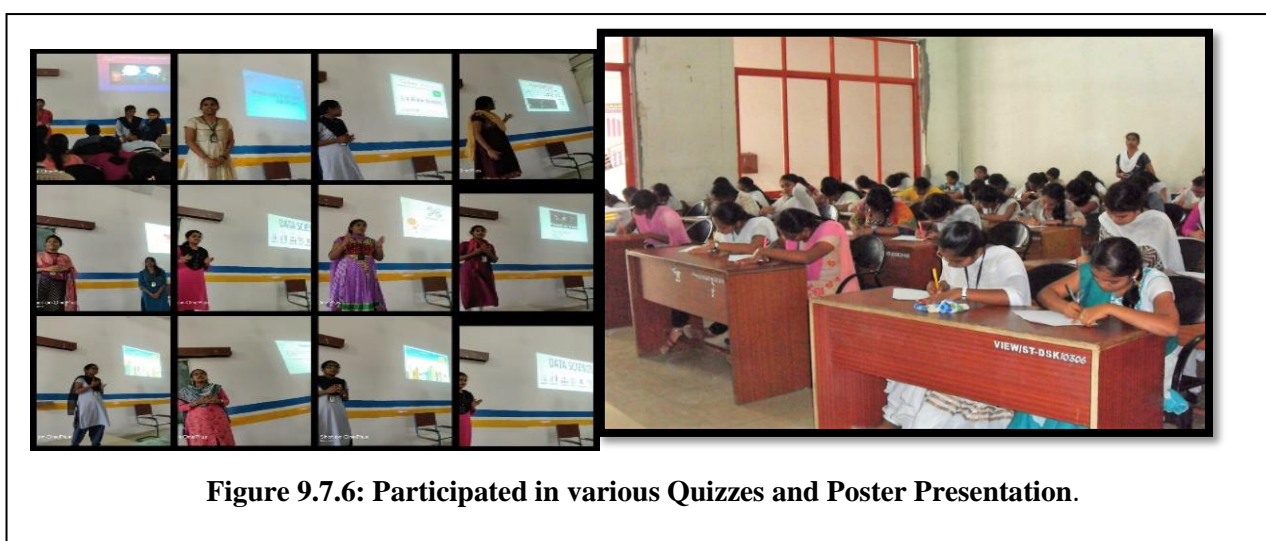
**Figure 9.7.5: Students attending Awareness programs**

**9.7.1. E.Navitas Club****Academic Year 2019-2020****Table 9.7.1.E.1: Details of Navitas Activities**

S.No	Name of The Event	Date of The Event	Type of The Event	Branch	No.of Participants	Outcome	Relevance's Pos
1	Rivera 2018	14.09.2019 To 15.09.2019	Think And Run	CSE	1	Students who actively participated in this club were able to gain demonstration skills which helped them to clear technical and personal rounds in the campus interviews.	PO1,PO3, PO5,PO9, PO10
2	Rivera 2018	12.09.2019	Story Writing	CSE	35		PO1,PO3, PO5,PO9, PO10
3	NAVITAS Association	19.02.2019 To 20.02.2019	Non-Technical Event(MONOA CTION)	ECE	3		PO1,PO3, PO5,PO9, PO10
4	NAVITAS Association	19.02.2019 To 20.02.2019	Non-Technical Event (PYRAMID)	ECE	3		
5	NAVITAS Association	19.02.2019 To 20.02.2019	Non-Technical Even (COIN GAME)	ECE	3		PO1,PO3,PO4 ,PO9,PO10
6	NAVITAS Association	19.02.2019 To 20.02.2019	Non-Technical Event (Quiz on Technical Event) (QUIZ)	ECE	3		PO1,PO2,PO3 ,PO4,PO5,PO 6,PO7,PO9,P O10
7	NAVITAS Association	23.02.2018	Poster Presentation (Sensors And Actuators)	ECE	3		PO1,PO3,PO4 ,PO9,PO10
8	Rivera 2018	04.09.2018 To 15.09.2018	Think And Run	CSE	4		PO1,PO3,PO4 ,PO9,PO10
9	Rivera 2018	12.07.2018	Story Writing	CSE	26		PO1,PO3,PO4 ,PO9,PO10
10	Rivera 2018	22.09.2018	Words In Words	CSE	53		PO1,PO2,PO3 PO4,PO5PO6, PO7,PO9

**Academic Year 2018-2019****Table 9.7.1.E.2: Details of Navitas Activities**

S.No	Name of The Event	Date of The Event	Type of The Event	Branch	No.of Participants	Outcome	Relevance's Pos
1	NAVITAS Association	09.02.2017	LOGO Quiz	ECE	2	Students who actively participated in this club were able to gain demonstration skills which helped them to clear technical and personal rounds in the campus interviews.	PO1,PO3,PO4 PO9,PO10
2	NAVITAS Association	09.02.2017	Queen Of Ideas	ECE	1		PO1,PO3,PO4 PO9,PO10
3	Syiro-2017	13.09.2017	Quiz	CSE	7		PO1,PO3,PO4 PO9,PO10
4	Syiro-2017	15.09.2017	Science Quiz	CSE	72		PO1,PO3,PO4 PO9,PO10

**Figure 9.7.6: Participated in various Quizzes and Poster Presentation.****9.7.2 Extra-Curricular Activities:**

Students Who Involve Themselves In Extra-Curricular Activities Learn How To Commit In A Specific Thing They Get Involved In. Extracurricular Activities Are Supremely Important In A Student's Life. Students Who Engage In Extracurricular Activities Meet New Individuals And Can Enlarge Their Sphere Which Is Also Advantageous In Finding Better Career Opportunities. Skills Like Collaboration, Time Management, Activity Management, Group Leading And Many More Additional Abilities Can Be Enhanced. Students Who

Participate In Sports And Other Group Activities Possess Better Leadership Skills And Learn How To Grow Relations With Each Other.

By Providing The Extra-Curricular Activities With Various Clubs, The Students Immensely Gained Rapid Advancement In Their Career.

Following Are The Names Of Clubs Available In The Extra-Curricular Activities:

- A. Sports Club
- B. Rhythm Club
- C. Eco Club
- D. Samskrithi Club
- E. Health Club

#### 9.7.2. A. Sports Club:

**Academic Year 2019-2020**

**Table 9.7.2.A.1: Details Of Various Sport Events**

S.No	Name of The Event	Date of The Event	Type of Event	Branch	No.of Participants	Outcome	Relevance's Pos
1	National Sports Day	29.08.2019	Throw Ball	IT	8	Students who actively participated in this club enriched their sports skills which helped them stay fit and improved their stamina.	PO8,PO9,PO10
2	National Sports Day	29.08.2019	Running (200 Mts)	IT	1		PO8,PO9,PO10
3	Yuvatarang	11.01.2020 To 12.01.2020	Throw Ball	CSE	2		PO8,PO9,PO10



**Figure 9.7.7: Actively participated in Outdoor Sport**

### Academic Year 2018-2019

**Table 9.7.2.A.2: Details of Various Sport Events**

S.No	Name of The Event	Date of The Event	Type of Event	Branch	No.of Participants	Outcome	Relevance's Pos
1	Yuvatarang	06.01.2018 To 07.01.2018	Throw Ball	ECE	3	Students who actively participated in this club enriched their sports skills which helped them stay fit and improved their stamina.	PO8,PO9,PO10
2	Yuvatarang	16.02.2019 To 17.06.2019	Kho-Kho	CSE	3		PO8,PO9,PO10
3	Yuvatarang	16.02.2019 To 17.06.2019	Throw Ball	CSE	3		PO8,PO9,PO10

### Academic Year 2017-2018

**Table 9.7.2.A.3: Details of Various Sport Events**

S.No	Name Of The Event	Date Of The Event	Type Of Event	Branch	No.Of Participants	Outcome	Relevance's Pos
1	Yuvatarang-17	07.01.2017 To 08.01.2017	Caroms	ECE	1	Students who actively participated in this club enriched their sports skills which helped them	PO8,PO9,PO10
2	Yuvatarang-17	07.01.2017 To 08.01.2017	Throw Ball	ECE	7		PO8,PO9,PO10
3	Yuvatarang	06.01.2018 To 07.01.2018	Throw Ball	CSE	4		PO8,PO9,PO10

4	Yuvatarang	06.01.2018 To 07.01.2018	Relay 4x100mts	CSE	3	stay fit and improved their stamina.	PO8,PO9,PO10
5	Yuvatarang	06.01.2018 To 07.01.2018	Kabaddi	CSE	4		PO8,PO9,PO10
6	Yuvatarang	06.01.2018 To 07.01.2018	Athlets	CSE	4		PO8,PO9,PO10
7	Yuvatarang	06.01.2018 To 07.01.2018	Kho-Kho	CSE	2	Students who actively participated in this club enriched their sports skills which helped them stay fit and improved their stamina.	PO8,PO9,PO10
8	Vistha	15.02.2018 To 17.02.2018	Badminton	CSE	2		PO8,PO9,PO10
9	Vistha	15.02.2018 To 17.02.2018	Running	CSE	2		PO8,PO9,PO10
10	Vistha	06.01.2018	Badminton	CSE	2		PO8,PO9,PO10



**Figure 9.7.8: Winner Teams of Kho-Kho and Throw Ball**

### 9.7.2. B.Rhythm Club

#### Academic Club 2019-2020

**Table 9.7.2.B.1: Details of Rhythm Club Activities**

S.No	Name of The Event	Date of The Event	Name of The Organized Institution	Branch	No.of Participants	Outcome	Relevance's Pos
1	Best Invitation & Decoration	29.11.2019	VIEW	IT	30	Students actively participated in this club have gained self-	PO8,PO9,PO10
2	Fresher's Day	14.09.2019	VIEW	IT	30		PO8,PO9,PO10



3	Best Invitation & Best Decoration Demo	29.11.2019	VIEW	IT	30	confidence and helped them to improve special skills towards fine arts.	PO8,PO9,PO10
4	PRABANDHAN (Cultural Event)	29.02.2019	VIEW	MBA	1		PO8,PO9,PO10
5	DANCE SQUARE	12.05.2019	VIEW	CSE	360		PO8,PO9,PO10
6	Flash Mob	12.01.2019	VIEW	CSE	90		PO8,PO9,PO10

### Academic Year 2018-2019

**Table 9.7.2.B.2: Details of Rhythm Club Activities**

S.No	Name of The Event	Date of The Event	Name of The Organized Institution	Branch	No. of Participants	Outcome	Relevance's Pos
1	Singing	19.02.2018 To 20.02.2018	View	ECE	2	Students actively participated in this club have gained self-confidence and helped them to improve special skills towards fine arts.	PO8,PO9,PO10,PO11
2	Photography	01.03.2018	Gitam University	MBA	1		PO8,PO9,PO10,PO11
3	Business Plan	01.02.2018	GIET	MBA	1		PO8,PO9,PO10,PO11,PO12
4	HR Event	01.11.2018	VIIT	MBA	1		PO8,PO9,PO10,PO11,PO12
5	Scrap And Crap	14.09.2018 To 15.09.2018	VIEW	CSE	1		PO8,PO9,PO10,PO11,PO12
6	MISS DIVA	07.08.2018	VIEW	CSE	1	Students actively participated in this club have gained self-confidence and helped them to improve special skills towards fine arts.	PO8,PO9,PO10,PO11,PO12
7	Singing	07.03.2018	VIEW	CSE	15		PO8,PO9,PO10,PO11,PO12
8	Movie Promotion	07.01.2018	VIEW	CSE	340		PO8,PO9,PO10,PO11,PO12
9	Flash Mob	07.02.2018	VIEW	CSE	82		PO8,PO9,PO10,PO11,PO12

**Academic Year 2017-2018****Table 9.7.2.B.3: Details of Rhythm Club Activities**

S.No	Name of The Event	Date of The Event	Name of The Organized Institution	Branch	No.of Participants	Outcome	Relevance's Pos
1	Devils Hand	14.09.2017	VIEW	CSE	4	Students actively participated in this club have gained self-confidence and helped them to improve special skills towards fine arts.	PO8,PO9,PO10,PO11,PO12
2	Mini Militia	14.09.2017	VIEW	CSE	3		PO8,PO9,PO10,PO11,PO12
3	Craft Exhibition	15.09.2017	VIEW	CSE	12		PO8,PO9,PO10,PO11,PO12
4	Flash Mob	10.09.2017	VIEW	CSE	30		PO8,PO9,PO10,PO11,PO12
5	Dance	14.09.2017	VIEW	CSE	25		PO8,PO9,PO10,PO11,PO12

**Figure 9.7.9: Various cultural arts performed****9.7.2. C. Eco Club****Academic Year 2017-2018****Table 9.7.2.C.1: Details of Eco Club Activities**

S.No	Name of The Event	Date of The Event	Branch	No.of Participants	Outcome	Relevance's Pos
1	Eco-Rally On "Save A Drop"	25.08.2019	IT	60	Students participated were grown very familiar with the responsibility towards environment and its sustainability which helped them stand unique in personal interviews.	PO6,PO7,PO8,PO9,PO10,PO11,PO12
2	ENVIRONMENTAL SEMINAR	18.07.2019	CSE	80		PO6,PO7,PO8,PO9,PO10,PO11,PO12

3	“World Environment Day”	05.06.2019	ECE	30	Planted a tree per head in and out of the campus by students	PO6,PO7,PO8 PO9,PO10
4	Swatch Survekshan	05.01.2019	CSE	120	To encourage large scale citizen participation, ensure sustainability of initiatives taken towards garbage free and open defecation free cities and create awareness amongst all sections of society about the importance of working together towards making towns and cities a better place to live in.	PO6,PO7,PO8 ,PO9,PO10
5	Say No To Plastic	30.09.2019	EEE	65	Created awareness in amrutapuram village against plastic usage and distributed cloth bags	PO6,PO7,PO8 ,PO9,PO10
6	Poster Presentation And Essay Writing Competition And Craft Exhibition On “Recycling The Waste”	19.07.2019	ECE	50	Conducted poster presentation and essay writing competition and crafts exhibition to students	PO6,PO7,PO8 ,PO9,PO10

### Academic Year 2017-2018

**Table 9.7.2.C.2: Details ofEco Club Activities**

S.No	Name of The Event	Date of The Event	Branch	No.of Partici pants	Outcome	Relevance’s Pos
1	Best From Waste Devil's Hand	14.09.2017 To 15.09.2017	CSE	5	Students participated were grown very familiar with the responsibility towards environment and its sustainability which helped them stand unique in personal interviews.	PO6,PO7,PO8 PO9,PO10,PO 11,PO12

2	Eco Ganesha	24.08.2017	CSE	251	Importance of using eco-friendly ganesha idols	PO6,PO7,PO8 PO9,PO10,PO11,PO12
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Figure 9.7.10: Environmental Consciousness programs

### 9.7.2. D.Samskrithi Club

Academic Year 2019-2020

Table 9.7.2.D.1: Details of Samskrithi Club Activities

S.No	Name of The Event	Date of The Event	Branch	No.of Participants	Outcome	Relevance's Pos
1	“Teachers Day	05.09.2019	IT	45	Students acquired unique skills of different fine arts through these skills which helped them stand unique and enhanced their resumes for the campus interviews.	PO6,PO8,PO9,PO10
2	BRAID A CARD	23.02.2019	CSE	75		PO6,PO8,PO9,PO10
3	GUNA 369 MOVIE PROMOTION	20.07.2019	CSE	360		PO6,PO8,PO9,PO10
4	DÉCOR YOUR CLASS	29.09.2019	CSE	540		PO6,PO8,PO9,PO10
5	ARTSY LENS	03.12.2019	CSE	360		PO6,PO8,PO9,PO10



Figure 9.7.11: Heartily welcomed GUNA 369 movie team

### Academic Year 2018-2019

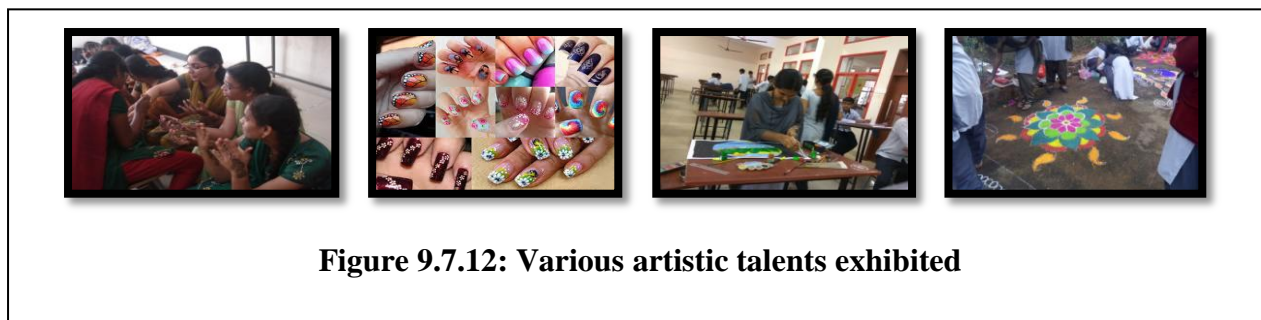
Table 9.7.2.D.2: Details of Samskrithi Club Activities

S.No	Name of The Event	Date of The Event	Branch	No.of Participants	Outcome	Relevance's Pos
1	Singing	01.05.2018	CSE	14	Students acquired unique skills of different fine arts through these skills which helped them stand unique and enhanced their resumes for the campus interviews.	PO6,PO8,PO9,PO10
2	Mehandi	07.04.2018	CSE	19		PO6,PO8,PO9,PO10

### Academic Year 2017-2018

Table 9.7.2.D.3: Details of Samskrithi Club Activities

S.No	Name of The Event	Date of The Event	Branch	No.of Participants	Outcome	Relevance's Pos
1	Rangoli Event	09.02.2017	ECE	7	Students Acquired Unique Skills Of Different Fine Arts Through This Skills Which Helped Them Stand Unique And Enhanced Their Resumes For The Campus Interviews	PO8,PO9,PO10
2	Singing	12.09.2017	CSE	20		PO8,PO9,PO10
3	Nail Art	11.09.2017	CSE	10		PO8,PO9,PO10
4	Mehandi	10.09.2017	CSE	12		PO8,PO9,PO10



**Figure 9.7.12: Various artistic talents exhibited**

### 9.7.2. E. Health Club

Academic Year 2019-2020

**Table 9.7.2.E.1: Details of Health Club Activities**

S.No	Name of The Event	Date of The Event	Branch	No.of Partici pants	Outcome	Relevance's Pos
1	The International Yoga Day	21.06.2019	IT	45	Students Actively Participated In This Club Have Gained A Unique Skill Which Impacted Many Other Students To Aware Of Health Hazards And Safety Measures	PO6,PO7,PO8 PO9,PO10
2	HACK AI On HEALTH By Medivally,World Incubation Hub	23-12-2019	CSE	1		PO6,PO7,PO8 PO9,PO10
3	Blood Donation Camp "World Blood Donor's Day"	14.06.2019	EEE&C SE	150	More Than 150 Students Donated Blood	PO6,PO7,PO8 PO9,PO10
4	Awareness Program On "Personal Hygiene"	14.03.2020	CS E &EEE	160	Explained Students How To Be Clean And How To Maintain The Personal Health With Proper Care And Precautions	PO 7,PO 9

**Academic Year 2018-2019****Table 9.7.2.E.2: Details of Health Club Activities**

S.No	Name of The Event	Date of The Event	Branch	No.of Participants	Outcome	Relevance's Pos
1	Blood Donation Camp On 'World Blood Donors Day'	14.06.2018	CSE &EEE	121	Created Awareness On Blood Donation And Collected 121 Units Of Blood From The Staff And Students	PO7,PO8,PO9
2	Health Camp For Faculty	01.07.2017	ECE&EE E	140	General Health Checkups And Tips To Healthy Lifestyle	PO7,PO8,PO9
3	General Medical Checkup	01.07.2017	CSE& IT	180	A Talk On "What A Woman Should Know"	PO7,PO8,PO9
4	International Yoga Day Celebrations	21.06.2017	CSE&EE E	120	Various Forms Of Yogasanas And Their Significance	PO7,PO8,PO9

**Figure 9.7.13: Blood donated and various yoga postures done by students**

**Academic Year 2017-2018****Table 9.7.2.E.1: Details of Health Club Activities**

S.No	Name of The Event	Date of The Event	Branch	No.of Participants	Outcome	Relevance's Pos
1	Health Camp For Faculty	01.07.2017	CSE& IT	140	General Health Checkups And Tips To Healthy Lifestyle	PO7,PO8,PO9
2	General Medical Checkup	01.07.2017	EEE& CSE	180	A Talk On "What A Woman Should Know"	PO7,PO8,PO9
3	International Yoga Day Celebrations	21.06.2017	ECE& CSE	120	Various Forms Of Yogasanas And Their Significance	PO7,PO8,PO9

**9.7.3 Availability of Sports and Cultural Facilities (3)****Table 9.7.3.1: List of Indoor and Outdoor Game Facilities Available In The Campus.**

S.No	Name Of The Sport Facility	Quantity	Place of Availability
1	Throw Ball Nets	6	P D R O O M
2	Throw BALLS	10	
3	Volley Ball Net	4	
4	Volley Balls	7	
5	Volley Ball Antenna	1 (Pair)	
6	Ball Badminton Nets	2	
7	Ball Badminton Rockets	7	
8	Shuttle Nets	5	
9	Shuttle Rockets	30	
10	Shuttle Barrels	5	
11	Tenni-Koit Nets	4	
12	Tenni – Koits	7	
13	Carrom Boards	9	
14	Carrom Board Coins	15 (Sets)	
15	Carrom Board Powder	2	
16	Strikers Box	1	
17	Chess Boards	9	
18	Chess Board Coins	10 (Sets)	
19	Cricket Bats	2	
20	Cricket Stumps	2 (Pairs)	
21	Cricket Balls	7	



22	Kho-Kho Poles	2 (Sets)	O O M
23	Shot-Put	3	
24	Discuss	2	
25	Javelin Throw	1	
26	Skipping Ropes	10	
27	Weighing Machine	Old 1 and New 1	
28	Foot Ball	1	
29	Stop Watch	2	
30	Air Pump	1	
31	Measuring Tap	1	
32	Marking Ropes	3	
33	Table Tennis Board	1	
34	Table Tennis Balls	4 Boxes	
35	Table Tennis Net	1	
36	Table Tennis Rockets	4(Pairs)	
37	Ground Roller	1	

**Table 9.7.3.2: AVAILABLE LIST OF COURTS**

S.NO	LIST OF THE COURTS	QUANTITY
1	THROW BALL	2
2	VOLLEY BALL	2
3	KHO-KHO	1
4	SHUTTLE	2
5	TENNI-KOIT	1
6	KABADDI	1
7	CRICKET PITCH	1
8	200MTS TRACK	1

### 9.7.4 NCC, NSS And Other Clubs (3)

Academic Year 2019-2020

**Table 9.7.4.1: List of NCC, NSS Conducted in the Campus**

S.No	Name of The Event	Date of The Event	Guests	No.of Students Attended/Participated	Outcome	Relevance's Po's
1	Passport Mela	12.12.2019	Regional Passport Officer NLP Chowdary	832	Most Of The Engineering Students Have Been Issued Passports For Their Further Education In Abroad.	PO 6
2	Donations To AIDS Affected Child Patients	03.12.2019	---	60	Distributed Fruits And Provisions To The AIDS Affected Children At AIDS Home	PO 7
3	Essay Writing Competition On "Indian Constitution- Current Challenges And Future"	26.11.2019	----	80	Essay Writing Competition On The Constitution Related Topic, Is Held On The Occasion Of National Constitution Day	PO 1, PO 6
4	Awareness Rally On Mahatma Gandhi Quotes On Independence Day	15.08.2019	-----	150	Created Awareness In Public On Mahatma Gandhi's Preaching's Or Quotes By A Rally At Sheela Nagar	PO 8
5	Awareness Program On "Cyber Crime"	08.08.2019	Joint Commissioner Of Police Shri K. Prabhakar Garu	150	Created Awareness On Cyber Crime	PO1,PO2
6	150 <sup>th</sup> Birth Day Celebrations Of "Mahatma Gandhi"	31.07.2019	----	30	Essay Writing Competition Conducted On "Mahatma Gandhi's Life"	PO 7,PO 12
7	Awareness Program On "Bank Loans"	10.07.2019	ICICI Bank Manager Hemanth Kumar, Kurmannapalem	60	Created Awareness On Education Loan, Gold Loan, Visa Loan Etc.,	PO 7
8	Sharing Of Joy	20.01.2019	Sister Vandana, Nirmala Sadan, Gnanapuram	30	Interaction Of SPHOORTI Orphanage,	

					Gajuwaka, Children With The Old Age Home Adults Of NIRMALA SADAN, Gnanapuram On The New Year Eve.	PO 9
9	Awareness Program On 'Consumer Rights And Human Rights'	07.02.2020	Consumer Forum Judge Mrs. P. Surya Bhaskaram And State Secretary Human Rights Council Members MVS Murthy, M. Syam Prasad	200	Created Awareness In Students On Human Rights And Consumer Rights I.E. How To Avoid Consumer Frauds And How To Put A Case In Consumer Forum Etc.,	PO 8,PO 10

### Academic Year 2018-2019

**Table 9.7.4.2: List Of NCC, NSS Conducted In The Campus**

S.No	Name of The Event	Date of The Event	Guests	No.of Students Attended/P articipated	Outcome	Relevance's Po's
1	Plantation On 'World Environmental Day'	05.06.2018	Social Activist Mr.	84	Awareness On Environmental Issues And Pledged Against Plastic Usage	PO 7
2	Social Enterprise "R3 Project"	04.04.2018	Akshya Patra Foundation Secretary D. Jitaamitra Dasa	124	Awareness On Reduce, Reuse And Recycle Of Old Books And Papers Into New Books	PO 9
3	LLR (Learners License Registration) Mela	15.02.2018	Senior Motor Vehicle Inspector Mr. Butchi Raju	250	Issued Temporary Driving License	PO 9



**Figure 9.7.14: Illustration of social activities highlighted**

## Academic Year 2017-2018

**Table9.7.4.3: List of NCC, NSS Conducted In The Campus**

S.No	Name of The Event	Date of The Event	Guests	No.of Students Attended/P articipated	Outcome	Relevance's Po's
1	Inspirational Talk	28.10.2017	Dr.Yandamuri Veerendranath	164	Living A Healthy And Balanced Life : Beat Stress	PO 8
2	Vigilance Awareness Week & Speech On "Role Of Youth In Building Healthy Society"	16.10.2017	Vigilance Officers Of Rashtriya Ispat Nigam Ltd., (RINL) Mr. Rajesh Kumar, Mrs. Dainy Cherian	148	Elocution Competition On "My Vision-Corruption Free India"	PO 8,PO 10
3	Potential Ways To Golden Future By CII, YI Organizations	12.08.2017	Lovyo Foods Chairman Lakshmanan Krishnamurthy	155	Golden Future With	PO 9
4	Registrations In Electoral Roll	06.07.2017	-----	210	Voters Registration And Its Importance	PO 9
5	Motivational Seminar	14.03.2017	Dr.Yandamuri Veerendranath	289	Interaction With The Students And Motivation Towards General Awareness	PO 8,PO 9
6	Awareness Program On 'Mahila Rakshana Chattalu'	21.02.2017	Chief Guest Senior Civil Judge Naga Sundar, Visakhapatnam	167	Created Awareness By Explaining The Proper Acts On Violence On Women	PO 9,PO 10
7	Awareness Program On Road Safety Measures	23.01.2017	Regional Transport Officer I. Siva Prasad, Visakhapatnam	258	Addressed All The Students And Advised To Follow The Safety Measures While Driving	PO 9



**Figure 9.7.15: Illustrations of some NSS activities**

### Student Support Systems :: Attainments Evaluation

Cumulatively for all the modules in student support systems the attainments were set and evaluated for PO's, Mission of the Institute and Vision of the Institute as follows:

Table B.9.1. Course/Module vs PO Matrix of courses in Student Support Systems:

S.No	Facility	Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	
1	Self-Learning	Web-based Learning	3	3	3	2	2					2		3	
		Professional Bodies/Clubs	3	3	3	3	3	3	3	3	3	3	3	3	3
		Seminars & Workshops	3	3	3	3	3	3	3	3	3	3	3	3	3
		Industrial Visits							3	3	3	3	3	3	3
		Certification Courses	3	3	3	3	3								
		Guest Lectures	3	3	2	2	1								
		MOOC's	3	3	3	2	2						1		
2	Pre-Placement Training	CRT	3	3	3	3	3	3	3	3	3	3	3	3	
		CST	3	3	3	3	3	3	3	3	3	3	3	3	
		Professional Internships	3	3	3	3	3	3	3	3	3	3	3	3	3
3	Entrepreneurship and incubation	Startups	3	3	3	3	3	3	3	3	3	3	3	3	
		Product Developments	3	3	3	3	3	3	3	3	3	3	3	3	3
4	Cocurricular activities	TECHKRITHI CLUB	3	3	3	3	3	3	3	3	3	3	3	3	3
		Academic clubs	3	3	3	3	3	3	3	3	3	3	3	3	3
		Activity clubs	3	3	3	3	3	3	3	3	3	3	3	3	3
		Shristi club	3	3	3	3	3	3	3	3	3	3	3	3	3
		NAVITAS club	3	3	3	3	3	3	3	3	3	3	3	3	3
5	Extra-Curricular Activities	Rythms club								1	2	3	2	2	
		Health club						3	3	2	2	1			
		Sports club	1	1	1	1	2	1	2	3	2	3	2	2	
		Eco-club						3	3	3	2	1	2	3	
		SAMSKRITHI CLUB						3		3	1	1			
		Socio Club						3	3	3	2	1	1		
<b>Average Attainment</b>			<b>2.88</b>	<b>2.88</b>	<b>2.82</b>	<b>2.71</b>	<b>2.71</b>	<b>2.89</b>	<b>2.94</b>	<b>2.84</b>	<b>2.63</b>	<b>2.48</b>	<b>2.71</b>	<b>2.88</b>	

Table B.9.2: Course/Module vs PO Attainments of courses in Student Support Systems:

S.No	Facility	Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	
1	Self-Learning	Web-based Learning	2.79	2.79	2.79	1.86	1.86	0	0	0	0	1.86	0	2.79	
		Professional Bodies/Clubs	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68
		Seminars & Workshops	2.62	2.62	2.62	2.62	2.62	2.62	2.62	2.62	2.62	2.62	2.62	2.62	2.62
		Industrial Visits	0	0	0	0	0	2.59	2.59	2.59	2.59	2.59	2.59	2.59	2.59
		Certification Courses	2.81	2.81	2.81	2.81	2.81	0	0	0	0	0	0	0	0
		Guest Lectures	2.54	2.54	1.7	1.7	0.85	0	0	0	0	0	0	0	0
		MOOC's	2.64	2.64	2.64	1.76	1.76	0	0	0	0	0.88	0	0	0
2	Pre-Placement Training	CRT	2.97	2.97	2.97	2.97	2.97	2.97	2.97	2.97	2.97	2.97	2.97	2.97	
		CST	3	3	3	3	3	3	3	3	3	3	3	3	
		Professional Internships	3	3	3	3	3	3	3	3	3	3	3	3	
3	Entrepreneurship and incubation	Startups	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	
		Product Developments	2.85	2.85	2.85	2.85	2.85	2.85	2.85	2.85	2.85	2.85	2.85	2.85	2.85
4	Cocurricular activities	TECHKRITHI CLUB	2.81	2.81	2.81	2.81	2.81	2.81	2.81	2.81	2.81	2.81	2.81	2.81	
		Academic clubs	2.78	2.78	2.78	2.78	2.78	2.78	2.78	2.78	2.78	2.78	2.78	2.78	
		Activity clubs	2.91	2.91	2.91	2.91	2.91	2.91	2.91	2.91	2.91	2.91	2.91	2.91	
		Shristi club	2.91	2.91	2.91	2.91	2.91	2.91	2.91	2.91	2.91	2.91	2.91	2.91	
		NAVITAS club	2.69	2.69	2.69	2.69	2.69	2.69	2.69	2.69	2.69	2.69	2.69	2.69	
5	Extra-Curricular Activities	Rythms club	0	0	0	0	0	0	0	0.82	1.64	2.47	1.64	1.64	
		Health club	0	0	0	0	0	2.68	2.68	1.78	1.78	0.89	0	0	
		Sports club	0.78	0.78	0.78	0.78	1.57	0.78	1.57	2.35	1.57	2.35	1.57	1.57	
		Eco-club	0	0	0	0	0	2.68	2.68	2.68	1.79	0.89	1.79	2.68	
		SAMSKRITHI CLUB	0	0	0	0	0	2.72	0	2.72	0.91	0.91	0	0	
		Socio Club	0	0	0	0	0	2.51	2.51	2.51	1.68	0.84	0.84	0	
<b>Student Support Systems</b>			<b>2.68</b>	<b>2.68</b>	<b>2.63</b>	<b>2.52</b>	<b>2.52</b>	<b>2.66</b>	<b>2.7</b>	<b>2.6</b>	<b>2.41</b>	<b>2.27</b>	<b>2.49</b>	<b>2.66</b>	
<b>% Attainment</b>			<b>92.8</b>	<b>92.8</b>	<b>93</b>	<b>93.1</b>	<b>93</b>	<b>92.1</b>	<b>91.9</b>	<b>91.5</b>	<b>91.8</b>	<b>91.5</b>	<b>92.1</b>	<b>92.2</b>	

Table B.9.3: Course/Module vs Institute Mission &amp; Institute Vision Matrix of courses in Student Support Systems:

S.No	Facility	Course	M1. To empower women engineers through innovative teaching learning practices.	M2. To encourage higher education and research with well-equipped laboratories.	M3. To promote entrepreneurship through creativity and innovation.	M4. To promote environmental sustainability and inculcate ethical, emotional and social consciousness.	Vision: To be a leading institution of women empowerment producing internationally accepted professionals with psychological strength, emotional balance and ethical values.
1	Self-Learning	Web-based Learning	3				3
		Professional Bodies/Clubs	3	3		1	3
		Seminars & Workshops	3			1	3
		Industrial Visits	3	3		2	3
		Certification Courses	3				3
		Guest Lectures	3				3
		MOOC's	3				3
2	Pre-Placement Training	CRT	3			1	3
		CST	3			1	3
		Professional Internships	3	3	1	3	3
3	Entrepreneurship and incubation	Startups	3	3	3	3	3
		Product Developments	3	3	3	3	3
4	Cocurricular activities	TECHKRITHI CLUB	3	3	2	3	3
		Academic clubs	3	3	2	3	3
		Activity clubs	3	3	1	3	3
		Shristi club	3	3	2	3	3
		NAVITAS club	3	3	2	3	3
5	Extra-Curricular Activities	Rythms club				2	2
		Health club				3	1
		Sports club				2	1
		Eco-club				3	1
		SAMSKRITHI				1	1



		CLUB					
		Socio Club				3	1
	Student Support Systems		3	3	2	2.32	2.52

Table B.9.4: Course/Module vs Institute Mission &amp; Institute Vision Attainments of courses in Student Support Systems:

S.No	Facility	Course	M1. To empower women engineers through innovative teaching learning practices.	M2. To encourage higher education and research with well-equipped laboratories.	M3. To promote entrepreneurship through creativity and innovation.	M4. To promote environmental sustainability and inculcate ethical, emotional and social consciousness.	Vision: To be a leading institution of women empowerment producing internationally accepted professionals with psychological strength, emotional balance and ethical values.
1	Self-Learning	Web-based Learning	2.79	0.00	0.00	0.00	2.79
		Professional Bodies/Clubs	2.68	2.68	0.00	0.89	2.68
		Seminars & Workshops	2.62	0.00	0.00	0.87	2.62
		Industrial Visits	2.59	2.59	0.00	1.73	2.59
		Certification Courses	2.81	0.00	0.00	0.00	2.81
		Guest Lectures	2.54	0.00	0.00	0.00	2.54
2	Pre-Placement Training	MOOC's	2.64	0.00	0.00	0.00	2.64
		CRT	2.97	0.00	0.00	0.99	2.97
		CST	3.00	0.00	0.00	1.00	3.00
3	Entrepreneurship and incubation	Professional Internships	3.00	3.00	1.00	3.00	3.00
		Startups	2.70	2.70	2.70	2.70	2.70
4	Cocurricular activities	Product Developments	2.85	2.85	2.85	2.85	2.85
		TECHKRITHI CLUB	2.81	2.81	1.88	2.81	2.81
		Academic clubs	2.78	2.78	1.85	2.78	2.78
		Activity clubs	2.91	2.91	0.97	2.91	2.91

		Shristi club	2.91	2.91	1.94	2.91	2.91
		NAVITAS club	2.69	2.69	1.80	2.69	2.69
5	Extra-Curricular Activities	Rythms club	0.00	0.00	0.00	1.64	1.64
		Health club	0.00	0.00	0.00	2.68	0.89
		Sports club	0.00	0.00	0.00	1.57	0.78
		Eco-club	0.00	0.00	0.00	2.68	0.89
		SAMSKRITHI CLUB	0.00	0.00	0.00	0.91	0.91
		Socio Club	0.00	0.00	0.00	2.51	0.84
		Student Support Systems	2.78	2.79	1.87	2.11	2.32
% Attainment		92.8	93.1	93.6	91.2	<b>91.8</b>	

<b>Criterion 10</b>	<b>Governance, Institutional Support and Financial Resources</b>	<b>120 M</b>
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## **10.1. ORGANIZATION, GOVERNANCE AND TRANSPARENCY (40)**

### **10.1.1. State the Vision and Mission of the Institute (5)**

*(Vision statement typically indicates aspirations and Mission statement states the broad approach to achieve aspirations)*

#### **VISION OF THE INSTITUTE**

To be a leading institution of women empowerment producing internationally accepted professionals with psychological strength, emotional balance and ethical values.

#### **MISSION OF THE INSTITUTE**

**M1:** To empower women engineers through innovative teaching learning practices.

**M2:** To encourage higher education and research with well-equipped laboratories.

**M3:** To promote entrepreneurship through creativity and innovation.

**M4:** To promote environmental sustainability and inculcate ethical, emotional and social consciousness.

#### **Appropriateness/Relevance of the Statements:**

There has been an emerging need in the local society for providing an exclusive time and space for girls in technical education. Addressing this socio and economic concerns of the society, The Institute is established with total women empowerment as its chief motto. The aim is to provide competent women technical power keeping the demands of the industry along with providing a robust economic boost to the family in the form of a technically educated and trained woman professional. Apart from these aims the college has kept its vision on simultaneously equipping the girl students physically fit, psychologically strong to face the challenges in the society.

The activities are planned in such a way that the girl gets transformed into a competent and complete woman with technical expertise, self-reliance, psychological strength, emotional balance, ethical values and social consciousness. Setting highest ethical standards at all aspects of college activity the girl is imbued with right kind of moral attitude. Overall, the Vision and Mission statements are to transform the girl into a complete woman through the comprehensive cycle of change at the Institute.

**10.1.2. Governing Body, Administrative Setup, Functions of Various Bodies, Service Rules, Procedures, Recruitment and Promotional Policies (10)**

*(List the governing, senate, and all other academic and administrative bodies; their memberships, functions, and responsibilities; frequency of the meetings; and attendance therein, in a tabular form. A few sample minutes of the meetings and action-taken reports should be annexed. The published rules including service rules, policies and procedures; year of publication shall be listed. Also state the extent of awareness among the employees/students)*

**10.1.2 (A) GOVERNING BODY**

The institution has a well defined and structured governance system headed by the governing body which is an apex committee that oversees the overall development and continuous growth of the institution in lines with the established vision. The Governing body is comprised of 15 eminent people from industry and academia to bring in the necessary balance. The term of the members, except the ex-officio member, shall be three years.

Functions of Governing Body:

1. To monitor the academic, student, faculty development and other related activities of the college.
2. To approve the recommendations of the Staff Selection Committee.
3. To consider for implementation the important communications, policy decisions received from the University, Government, AICTE, etc.
4. To consider the recommendations of the Planning and Monitoring board of the college from implementation.
5. To prepare and approve the annual budget of the college.

Frequency of Meeting and Quorum:

The Governing Council shall meet at least twice a year. The quorum for the meeting shall be 2/3 of the total members of the Governing Council.

**Composition of the Governing Body:****Table 10.1 Composition of the Governing Body**

<b>Sl. No.</b>	<b>Name of the Person</b>	<b>Designation</b>	<b>Category</b>	<b>Nature of Appointment</b>
1	Dr V.Bhujanga Rao, ISRO Chair Professor, National Institute of Advances Studies, IISc Campus, Bangalore. Former DG-DRDO-New Delhi. Former Director-NSTL Vizag	Chairman	Trust/Management	Trust/ Management as per the constitution of By-Laws with the chairman or president or Director as the chair person (5 Members)
2	Dr. L. Rathaiah President & Correspondent, Lavu Educational Society, Vignan Group	Member	Trust/Management	
3	Padma Bhushan Dr. Y Lakshmi Prasad Former M.P, Director-Indian Culture Centre, Consulate General of India, Canada	Member	Trust/Management	
4	Sri N.Srikanth Executive Director, Vignan Group of Educational Institutions, Visakhapatnam	Member	Trust/Management	
5	Dr.Archana Sharma Outstanding Scientist Head, PP & EMD, BARC, Mumbai.	Member	Trust/Management	
6	Dr. P. V. G. D. Prasad Reddy Former Registrar, Professor, Department of Computer Science & Systems Engineering, Andhra University, Visakhapatnam	Member	Academician	Neighboring University
7	Dr. B.Subba Rao Programe Director, SAMEER-Centre for Electromagnetic Environmental Effects, Ministry of E&IT, Visakhapatnam	Member	Industrialist	Nominated by Management
8	Mr.Venkata Rayulu Bonam Delivery Project Executive IBM India (P) Ltd. Hyderabad	Member	Industrialist	Nominated by Management

9	Dr.Rishi Verma Scientist-G, PP & EMD, PEB-1, Bhabha Atomic Research Centre (BARC), Gandivanipalem, Atchutapuram (V), Visakhapatnam.	Member	Industrialist	Nominated by Management
10	Mr.Suresh Kumar Tankala Lead Consultant, Wipro Limited, Visakhapatnam	Member	Industrialist	Nominated by Management
11	Smt.P.Aruna Kumari Asst. Professor, Dept. of Computer Science & Engineering UCE, JNTUK, Vizianagaram	Member	University (JNTUK) Nominee	Nominated by the University
12	Mr. Bala Murugan South Regional Officer, AICTE	Member	AICTE Nominee	Nominated by the AICTE
13	Mr.B.K.Surya Prakash Principal, Govt. Polytechnic College, Anakapalli, VSKP	Member	State Government Nominee	Nominated by the State Government
14	Dr.J.Sudhakar Principal & Professor, Dept. of ECE, VIEW, Visakhapatnam	Member Secretary	Principal	Ex-officio
15	Prof.A.Sesha Rao Sr. Professor, Department of CSE, VIEW, Visakhapatnam	Member	Faculty Representative	Nominated by the Principal

### Details of Governing Council Meetings

Academic Year	No. of Meetings Conducted	Date of Meeting held	No. of Members attended
2017-18	2	06.06.2017	12
		22.12.2017	11
2018-19	2	06.09.2018	11
		13.04.2019	12
2019-20	1	12.11.2019	12
2019-20	1	03.04.2020	Cancelled due to Covid-19

**Minutes of the meetings and action-taken reports:****Minutes of the 19<sup>th</sup> meeting of Board of Governors**

Vignan's Institute of Engineering for Women

Held on June 6, 2017 at 10.00 a.m. at Board Room, VIEW, Visakhapatnam

**Members Present**

1	Dr. L. Rathaiah	Vice-Chairman
2	Padma Bhushan Sri.Dr. Y Lakshmi Prasad	Member
3	Sri K Pavan Krishna	Member
4	Dr. V. Vizia Saradhi	Member
5	Sri.Venkata Rayulu Bonam	Member
6	Prof. P. V. G. D. Prasad Reddy	Member
7	Mr.Srikanth Nandigam	Member
8	Dr. B.Subba Rao	Member
9	Dr. G.Madhavi	Member
10	Mr.B.K.Surya Prakash	Member
11	Dr.S.M.Murali Krishna, I/c Principal	Member Secretary
12	Prof.A.Sesha Rao	Member

The following members have requested for leave of absence expressed their inability to attend meeting.

1. Dr.CD Malleswar
2. Sri.R.Bala Marugan

At the outset Dr.L.Rathaiah, Vice-Chairman welcomed all the members of Governing Council to the Meeting. He expressed confidence in getting the cooperation and support from other members of the Governing Body in effective discharge of his duties. He gave the opening remarks and spoke about important developments that took place in the College, construction of new academic block, New Canteen, placement record, overall results of the college and appreciate the faculty members for their efforts in achieving the excellent results in UG and PG courses.

The Vice-Chairman requested **I/c Principal** to present the agenda notes for discussion. I/c. Principal welcomed Sri.B.K.Surya Prakash, who has been recently nominated by the State Government as Govt. nominee to the Governing Body.

The following items are discussed and the corresponding resolutions are adopted:

**Item-1 Confirmation of the minutes of the earlier meeting held on 05.03.2016**

The minutes of the meeting of the Governing Body held on 05.03.2016 were circulated to all the members for their comments. As there were no comments, it was declared that the minutes were confirmed.

**Resolution No. VIEW/GBM/4/2017/1**

The Governing Body resolved to approve the minutes of the meeting held on 5th of March, 2016.

**Item-2 Report by the Principal on the progress of the College during the Academic Year 2016-17**

Principal gave a Power point presentation on various activities of the college since the last Governing Body meeting. Copy of the same was perused by the members and approved.

**Resolution No. VIEW/GBM/4/2017/2.1**

The Governing Body resolved to express its satisfaction upon the admissions into B.Tech., and M.B.A. for the academic year 2016-17 under the prevailing conditions, and suggested to take necessary steps for improvement of admissions in M.Tech.

**Resolution No. VIEW/GBM/4/2017/2.2**

The Governing Body reviewed the results of UG and PG programmes and expressed its happiness over the performance.

**Resolution No. VIEW/GBM/4/2017/2.3**

The Governing Body noted and placed on record its happiness about the University First Place in JNTUK first year results with 71.15 per cent. The Governing Body is pleased to note that 94 per cent of 365 students are achieved first class with distinction.

**Resolution No. VIEW/GBM/4/2017/2.4**

The Governing Body is pleased to note that 273 out of 315 eligible students are placed as on date in different organizations during the academic year 2016-17. The Governing Body noted with great satisfaction over the performance of two students excelled in Microsoft with annual package of 9.78Lakhs and one student excelled in Juspay with annual package of 12Lakhs.

**Resolution No. VIEW/GBM/4/2017/2.5**

The Governing Body is overwhelmed with happiness for achieving 3 Prathibha Awards from JNTUK which were presented in the academic year 2016-17 for the achievement of the academic year 2015-16

**Resolution No. VIEW/GBM/4/2017/2.6**

The Governing Body recognized the efforts of the faculty in getting research projects worth Rs.32.58 lakhs from Science and Engineering Research Board (SERB), Department of Science and Technology (DST) and expressed happiness over the progressive mind-set of the faculty.

**Resolution No. VIEW/GBM/4/2017/2.7**

The Governing Body noted with pleasure that 4 faculty are awarded Ph.D. It is also noted that 7 faculty members submitted their Ph.D. theses and 18 faculty members pursuing Ph.D. The governing Body congratulated their effort and promised continued support to faculty in such efforts.

**Resolution No. VIEW/GBM/4/2017/2.8**

The Governing Body while expressing its satisfaction about the publications by the faculty suggested the administration to encourage the faculty for more publications in reputed journals and conferences.

**Resolution No. VIEW/GBM/4/2017/2.9**

- I. The Governing Body complimented the staff for conducting Training Programmes, Workshops etc. for faculty and students.
- II. The Governing Body noted that nearly 30 faculty of the College attended short-term courses, training programmes, workshops, etc. organized by other Institutions which include IIITs/NITs/IITs.

**Resolution No. VIEW/GBM/4/2017/2.10**

The Governing Body expressed its happiness about revision of pay structure of faculty as per the recommendations of 6th Pay Commission of AICTE.

**Resolution No. VIEW/GBM/4/2017/2.11**

The governing Body expressed its satisfaction that the students are actively participating in co-curricular, sports, social, ethical, cultural and other activities. Also expressed their happiness for achieving first place in JNTUK Central Zone Kho-Kho completion.



**Resolution No. VIEW/GBM/4/2017/2.12**

The Governing Body was elated to know that a number of distinguished personalities visited the College and made delightful comments about the College.

**Item-3 Ratification of selected faculty and approval for fresh recruitment.**

A report on faculty selections made and requirement of faculty for the academic year 2016-17 is circulated to the members of the Governing Body. After perusal of the report by the members, the following resolutions are made:

**Resolution No. VIEW/GBM/4/2017/3.1**

i. The Governing Body noted with satisfaction that the services of 84 existing faculty are ratified, 5 faculty are selected for higher position and 12 new faculty are selected through the interviews conducted by JNTU-Kakinda.

ii. The Governing Body resolved to convey it's thanks to the JNT University-Kakinada for arranging faculty selections/ratification of services of existing faculty

**Resolution No. VIEW/GBM/4/2017/3.2**

The Governing Body noted that 18 new faculty joined during this period through University selections and College level selections.

**Resolution No. VIEW/GBM/4/2017/3.3**

The Governing Body authorized the Chairman, Governing Body to recruit the additional faculty required.

**Item-4 Income and expenditure status for the financial year 2016-17**

The Principal sought permission from the members of the Governing Body to circulate the income and expenditure for the financial year 2016-17 later as the accounts are to be finalized.

**Resolution No. VIEW/GBM/4/2017/4.1**

The Governing Body resolved to permit the Principal to circulate the income and expenditure under autonomous status for the financial year 2016-17 later as the accounts are to be finalized.

**Item-5 Budget for the financial year 2017-18**

The proposed budget for the financial year 2017-18 as prepared by the Finance Committee is circulated to the members.

**Resolution No. VIEW/GBM/4/2017/5.1**

The Governing Body approved the proposed budget for the Academic year 2017-18 as prepared by the Finance Committee.

**Item-6 Proposals for the Approval of Governing Body****Resolution No. VIEW/GBM/4/2017/6.1**

The Governing Body resolved to approved the proposal of NAAC Accreditation application process followed by permanent affiliation and 2(f) and 12(b) and suggested to to take necessary steps to apply for NAAC Accreditation.

**Resolution No. VIEW/GBM/4/2017/6.2**

The Governing Body resolved to approved the proposal of Recruitment of Staff with Ph.D to maintain at least two doctorates in each Department.

**Resolution No. VIEW/GBM/4/2017/6.3**

Approval is accorded for Introduction of Merit Scholarship Scheme to meritorious students of outstanding performance.

**Resolution No. VIEW/GBM/4/2017/6.4**

The Governing Body approved the proposal of Implementation of R&D policy To create a conducive platform for encouraging the faculty to undertake cutting-edge research and to produce quality output.

**Resolution No. VIEW/GBM/4/2017/6.5**

Approval is accorded for adding the following amendments in Leave Policy from the academic year 2017-18 to all permanent employees.

- a) Medical leaves
- b) Paternity leaves
- c) Special casual leave

**Resolution No. VIEW/GBM/4/2017/6.6**

The Governing Body approved the proposal of the following infrastructure additions for the academic year 2017-18 and approved the required funds for:

- a) Renovations to Seminar Hall
- b) Completion of Construction of a Canteen building
- c) Construction of Third floor C-Block or separate Block for I B.Tech
- d) Construction of Open Auditorium with sponsorship

**Resolution No. VIEW/GBM/4/2017/6.7**

Approval is accorded to Organise International Conference on “**Mathematical Applications in Computing and Statistics**” by department of Basic Science and Humanities in the academic year 2017-18 and approved the required funds.

**Resolution No. VIEW/GBM/4/2017/6.8**

Approval is accorded to finance committee, non-statutory committees i.e. Planning and Evaluation Committee (PEC), Grievance appeal Committee (GAC), Examination Committee (EC), Admission Committee (AC), Library Committee (LC), Student Welfare Committee (SWC), Extra-curricular Activities Committee (ECAC), Academic Audit Committee (AAC) and other committees i.e. College Management Committee (CMC), Policy Perceptive Committee (PPC), College Development Committee (CDC), PG-Committee (PGC), UG Committee (UGC), Department Development Committee (DDC), Hostel Management Committee (HMC), Anti-Ragging Committee (ARC), Purchase Committee (PC), Research Committee (RC), Training & Placement Committee (T&PC), Faculty Recruitment Committee (FRC) and Women Protection/Empowerment Committee (WPEC).

**Minutes of the 20th meeting of Board of Governors**

Vignan's Institute of Engineering for Women

Held on **December 22, 2017** at 10.00 a.m. at Board Room, VIEW, Visakhapatnam

**Members Present**

1	Dr. L. Rathaiah	Vice-Chairman
2	Padma Bhushan Sri.Dr. Y Lakshmi Prasad	Member
3	Sri K Pavan Krishna	Member
4	Sri.Venkata Rayulu Bonam	Member
5	Prof. P. V. G. D. Prasad Reddy	Member
6	Mr.Srikanth Nandigam	Member
7	Dr. B.Subba Rao	Member
8	Dr. G.Madhavi	Member
9	Mr.B.K.Surya Prakash	Member
10	Dr.J.Sudhakar	Member Secretary
11	Prof.A.Sesha Rao	Member

The following members have requested for leave of absence expressed their inability to attend meeting.

1. Dr.C.D.Malleswar
2. Sri.R.Bala Murugan

At the outset Dr.L.Rathaiah, Vice-Chairman welcomed all the members of Governing Council to the Meeting. He expressed confidence in getting the cooperation and support from other members of the Governing Body in effective discharge of his duties.

The Vice-Chairman requested **Principal** to present the agenda notes for discussion. Principal welcomed all the members of Governing Council to the Meeting and convey his gratitude for attending the meeting.

The following items are discussed and the corresponding resolutions are adopted:

**Item-1 Confirmation of the minutes of the earlier meeting held on 06.06.2017**

The minutes of the meeting of the Governing Body held on 06.06.2017 were circulated to all the members for their comments. As there were no comments, it was declared that the minutes were confirmed.

**Item-2 Report by the Principal on the progress of the College during the Academic Year 2017-18 (Upto I Semester)**

**Resolution No. VIEW/GBM/4/2017(2)/2.1**

The Governing Body resolved to express its satisfaction upon the admissions into B.Tech., and M.B.A. for the academic year 2017-18 under the prevailing conditions, and suggested to take necessary steps for improvement of admissions in M.Tech.

**Resolution No. VIEW/GBM/4/2017(2)/2.2**

The Governing body complimented about the admission for the academic year 2017-18 recorded as 80.3% of total intake where as in the academic year 2016-17 it was 78.9%.

**Resolution No. VIEW/GBM/4/2017(2)/2.3**

The Governing body appreciated for achieving 97.24% in B.Tech IV Year for the academic year 2016-17.

**Resolution No. VIEW/GBM/4/2017(2)/2.4**

The Governing Body recognized the efforts of the faculty for publishing more than 40 papers in reputed journals, out of which more than 20 papers are Scopus cited & H-indexed.

**Resolution No. VIEW/GBM/4/2017(2)/2.5**

The Governing Body expressed its happiness about revision of pay structure and increments to staff as per the recommendations of 6th Pay Commission of AICTE.

**Resolution No. VIEW/GBM/4/2017/2.6**

The governing Body expressed its satisfaction that the students are actively participating in co-curricular, sports, social, ethical, cultural and other activities.

**Item-3 Ratification of selected faculty and approval for fresh recruitment.**

**Resolution No. VIEW/GBM/4/2017(2)/3.1**

The Governing Body is overwhelmed with happiness for about 71% of faculty were ratified by JNTUK till date.

**Resolution No. VIEW/GBM/4/2017/3.2**

The Governing Body resolved to convey its thanks to the JNT University-Kakinada for arranging faculty selections/ratification of services of existing faculty

**Item-4 Proposals for the Approval of Governing Body**

**Resolution No. VIEW/GBM/4/2017(2)/4.1**

The Governing Body resolved to approved the proposal of NAAC Accreditation application process and suggested to to take necessary steps to apply for NAAC Accreditation.

**Resolution No. VIEW/GBM/4/2017(2)/4.2**

Approval is accorded for Introduction of Means Scholarship Scheme to Below Poverty Line (BPL) students to give financial support.

**Resolution No. VIEW/GBM/4/2017(2)/4.3**

The Governing Body approved the proposal of the following infrastructure additions for the academic year 2017-18 and approved the required funds for:

- e) Renovations to Seminar Hall
- f) Completion of Construction of a Canteen building
- g) Construction of fourth floor for additional class rooms for B.Tech & M.B.A
- h) Construction of Open Auditorium with sponsorship

**Resolution No. VIEW/GBM/4/2017/4.4**

Approval is accorded to plan for construction of women hostel in Campus and arch at main road, Portico at main entrance.

**Resolution No. VIEW/GBM/4/2017/4.5**

4.5.1 Approval is accorded for applying 2(f) and 12(b) status through an indemnity bond and it is resolved that every amount of grant that will be given by the commission to the college shall when received by the college solely be used for the benefit and purposes of the college in accordance with the terms and conditions of the grant and not for any other purpose or any other institution.

4.5.2 The Institute shall furnish to the commission the balance sheet of the Institution every year along with the annual audited accounts of the college.

4.5.2 The institute shall fulfil any other terms and condition laid down in indemnity bond.

**Resolution No. VIEW/GBM/4/2017/4.6**

Approved is accorded to recruit Doctoral staff in accordance with the increase in student intake in ECE & CSE.

**Resolution No. VIEW/GBM/4/2017/4.7**

Approval is accorded to implement Medical Leaves, Paternity Leaves and Special Casual Leaves and R&D incentives as per the R&D policy.

**Minutes of the 21<sup>st</sup> meeting of Board of Governors**

Vignan's Institute of Engineering for Women

Held on September 6, 2018 at 10.00 a.m. at Board Room, VIEW, Visakhapatnam

**Members Present**

1	Dr. CD Malleswar	Chairman
2	Dr. L. Rathaiah	Vice-Chairman
3	Sri K Pavan Krishna	Member
4	Sri.Venkata Rayulu Bonam	Member
5	Prof. P. V. G. D. Prasad Reddy	Member
6	Mr.Srikanth Nandigam	Member
7	Dr. B.Subba Rao	Member
8	Smt.P.Aruna Kumari	Member
9	Mr.B.K.Surya Prakash	Member
10	Dr.J.Sudhakar	Member Secretary
11	Prof.A.Sesha Rao	Member

The following members have requested for leave of absence expressed their inability to attend meeting.

Sl.No	Name of the person	Designation
1.	Padma Bhushan Sri.Dr.Y.L.Prasad	Member
2.	Sr.R.Bala Murugan	Member
3.	Dr.V.Vizia Saradhi	Member

The meeting was initiated with the welcome note by Chairman of Governing Body of VIEW, Dr CD Malleswar. He expressed confidence in getting the cooperation and support from other members of the Governing Body in effective discharge of his duties. He gave the opening remarks by introducing new JNTUK nominee Smt.P.Aruna Kumari, Asst. Professor, Dept. of CSE, UCE, JNTUK, Vizianagaram and spoke about important developments that took place in the College, placement record, overall results of the college and appreciate the faculty members for their efforts in achieving the excellent results in UG and PG courses.

The Chairman requested Principal **Dr.J.Sudhakar** to present the agenda notes for discussion.

Principal welcomed **Smt.P.Aruna Kumari**, who has been recently nominated by the JNT University, Kakinada as University nominee to the Governing Body.

The following items are discussed and the corresponding resolutions are adopted:

**Item-1 Confirmation of the minutes of the earlier meeting held on 22.12.2017**

The minutes of the meeting of the Governing Body held on 22.12.2017 were circulated to all the members for their comments. As there were no comments, it was declared that the minutes were confirmed.

**Resolution No. VIEW/GBM/4/2018/1**

The Governing Body resolved to approve the minutes of the meeting held on 22<sup>nd</sup> December 2017. Governing Body recommended the institute in the previous meeting to undertake the following:

2. Apply for NAAC Accreditation followed by permanent affiliation and 2(f) and 12(b)
3. Recruitment of Staff with Ph.D
4. Approved to Introduce of Means Scholarship Scheme and release notification in the month of January 2018.
5. Information and Communication Technology (ICT) Class Rooms
5. Approved for Renovations to Seminar Hall, Completion of Construction of a Canteen building and Construction of Fourth floor C-Block or separate Block for I B.Tech
6. Approved to Change the transformer and conversation from LT to HT with 400KVA

**Item-2 Report by the Principal on the progress of the College during the Academic Year 2017-18**

Principal gave a Power point presentation on various activities of the college since the last Governing Body meeting. Copy of the same was perused by the members and approved.

**Resolution No. VIEW/GBM/4/2018/2.1**

The Governing Body resolved to express its satisfaction upon the admissions into B.Tech., and M.B.A. for the academic year 2017-18 under the prevailing conditions, and suggested to take necessary steps for improvement of admissions in M.Tech.

**Resolution No. VIEW/GBM/4/2018/2.2**

The Governing Body reviewed the results of UG and PG programmes and expressed its happiness over the performance.

**Resolution No. VIEW/GBM/4/2018/2.3**

The Governing Body noted and placed on record its happiness about the University First Place in JNTUK first year results with 78.54 per cent.

**Resolution No. VIEW/GBM/4/2018/2.4**

The Governing Body is pleased to note that 144 out of 266 eligible students are placed as on date in different organizations during the academic year 2017-18.

**Resolution No. VIEW/GBM/4/2018/2.5**

The Governing Body noted with pleasure that 3 faculty are awarded Ph.D. It is also noted that 4 faculty members submitted their Ph.D. theses and 15 faculty members pursuing Ph.D. The governing Body congratulated their effort and promised continued support to faculty in such efforts.

**Resolution No. VIEW/GBM/4/2017/2.6**

The Governing Body while expressing its satisfaction about the publications by the faculty suggested the administration to encourage the faculty for more publications in reputed journals and conferences.

**Resolution No. VIEW/GBM/4/2018/2.7**

The governing Body expressed its satisfaction that the students are actively participating in co-curricular, sports, social, ethical, cultural and other activities. Also expressed their happiness for achieving first place in JNTUK Central Zone Kho-Kho and third place in volleyball completion.

**Item-3 Ratification of selected faculty and approval for fresh recruitment.**

A report on faculty selections made and requirement of faculty for the academic year 2017-18 is circulated to the members of the Governing Body. After perusal of the report by the members, the following resolutions are made:

**Resolution No. VIEW/GBM/4/2018/3.1**

- i. The Governing Body noted with satisfaction that the services of 91 existing faculty are ratified 10 new faculty are selected through the interviews conducted by JNTU-Kakinda.
- ii. The Governing Body resolved to convey it's thanks to the JNT University-Kakinada for arranging faculty selections/ratification of services of existing faculty

**Resolution No. VIEW/GBM/4/2018/3.2**

The Governing Body noted that 10 new faculty joined during this period through University selections and College level selections.

**Resolution No. VIEW/GBM/4/2018/3.3**

The Governing Body authorized the Chairman, Governing Body to recruit the additional faculty required.

**Item-4 Income and expenditure status for the financial year 2017-18**

The Principal sought permission from the members of the Governing Body to circulate the income and expenditure for the financial year 2017-18 later as the accounts are to be finalized.

**Resolution No. VIEW/GBM/4/2017/4.1**

The Governing Body resolved to permit the Principal to circulate the income and expenditure under autonomous status for the financial year 2017-18 later as the accounts are to be finalized.

**Item-5 Budget for the financial year 2018-19**

The proposed budget for the financial year 2018-19 as prepared by the Finance Committee is circulated to the members.

**Resolution No. VIEW/GBM/4/2017/5.1**

The Governing Body approved the proposed budget for the Academic year 2018-19 as prepared by the Finance Committee.

**Item-6 Proposals for the Approval of Governing Body****Resolution No. VIEW/GBM/4/2018/6.1**

The Governing Body resolved to approved the proposal of NAAC Accreditation application process followed by permanent affiliation and 2(f) and 12(b) and suggested to to take necessary steps to apply for NAAC Accreditation.

**Resolution No. VIEW/GBM/4/2018/6.2**

The Governing Body resolved to approved the proposal of Recruitment of Professors with Ph.D in CSE, ECE & EEE Departments to maintain at least One Professor in each Department as per guidelines of JNTUK.

**Resolution No. VIEW/GBM/4/2018/6.3**

Approval is accorded for Introduction of Means Scholarship Scheme to economically backward student.

**Resolution No. VIEW/GBM/4/2018/6.4**

The Governing Body approved the proposal of the following infrastructure additions for the academic year 2018-19 and approved the required funds for:

- i) Renovations to Seminar Hall
- j) Construction of Fourth Floor to establish additional Class rooms for B.Tech and MBA for the next academic year.
- k) Construction of Open Auditorium with sponsorship

**Resolution No. VIEW/GBM/4/2018/6.5**

Approval is accorded to construct separate hostel block for women's in VIEW campus to overcome the accommodation problems in present Hostel.

**Resolution No. VIEW/GBM/4/2018/6.6**

Approval is accorded to construct Arch at main road near to STBL Projects and Portico at main entrance to overcome the problems in rainy season.

**Resolution No. VIEW/GBM/4/2018/6.7**

Approval is accorded to construct Two & Four wheeler parking shed in VIEW campus as per the request raised by the students and staff.

**Minutes of the 22<sup>nd</sup> meeting of Board of Governors**

Vignan's Institute of Engineering for Women

Held on April 13, 2019 at 10.00 a.m. at Board Room, VIEW, Visakhapatnam

**Members Present**

1	Dr. CD Malleswar	Chairman
2	Sri K Pavan Krishna	Member
3	Sri.Venkata Rayulu Bonam	Member
4	Prof. P. V. G. D. Prasad Reddy	Member
5	Dr. B.Subba Rao	Member
6	Smt.P.Aruna Kumari	Member
7	Dr. V. Vizia Saradhi	Member
8	Dr.J.Sudhakar	Member Secretary
9	Prof.A.Sesha Rao	Member

The following members have requested for leave of absence expressed their inability to attend meeting.

1. Dr.L.Rathaiah
2. Padma Bhushan Sri Dr.Y.Lakshmi Prasad
3. Sri.R.Bala Murugan
4. Mr.B.K.Surya Prakash

The meeting was initiated with the welcome note by Chairman of Governing Body of VIEW, Dr CD Malleswar. He gave the opening remarks and spoke about important developments that took place in the College, placement record, overall results of the college and appreciate the faculty members for their efforts in achieving the excellent results in UG and PG courses.

The Chairman requested Principal **Dr.J. Sudhakar** to present the agenda notes for discussion. The following items are discussed and the corresponding resolutions are adopted:

**Item-1 Confirmation of the minutes of the earlier meeting held on 06.09.2018**

The minutes of the meeting of the Governing Body held on 06.09.2018 were circulated to all the members for their comments. As there were no comments, it was declared that the minutes were confirmed.

**Resolution No. VIEW/GBM/4/2018-19(2)/1**

The Governing Body resolved to approve the minutes of the meeting held on 6<sup>th</sup> September 2018. Governing Body recommended the institute in the previous meeting to undertake the following:

1. Apply for NBA Accreditation followed by permanent affiliation & 2(f) and 12(b)
2. Recruitment of Professors
3. Exclusive computer lab for JNTUK Online exams (80 systems)
4. Infrastructure additions proposed:
  - a) Renovations to Seminar Hall
  - b) Construction of fourth floor or Separate Block for 1st B.Tech & MBA.
  - c) Construction of Open Auditorium with sponsorship
5. Separate Hostel Block in the campus
6. Arch at the main road (STBL) & Portico at main entrance
7. Two & Four wheeler parking shed

**Item-2 Report by the Principal on the progress of the College during the Academic Year 2018-19 (Upto I Semester)**

Principal gave a Power point presentation on various activities of the college since the last Governing Body meeting. Copy of the same was perused by the members and approved.

**Resolution No. VIEW/GBM/4/2018-19(2)/2.1**

The Governing Body resolved to express its satisfaction upon the admissions into B.Tech., and M.B.A. for the academic year 2018-19 under the prevailing conditions, and suggested to take necessary steps for improvement of admissions in M.Tech.

**Resolution No. VIEW/GBM/4/2018-19 (2)/2.2**

The Governing Body reviewed the results of UG and PG programmes and expressed its happiness over the performance in the first semester of the academic year 2018-19

**Resolution No. VIEW/GBM/4/2018-19 (2)/2.3**

The Governing Body noted and placed on record its happiness about the University First Place in JNTUK first year results with 80.79 per cent in the first semester results of the academic year 2018-19.

**Resolution No. VIEW/GBM/4/2018-19 (2)/2.4**



The Governing Body is pleased to note that 286 out of 296 eligible students are placed as on date in different organizations during the academic year 2018-19.

**Resolution No. VIEW/GBM/4/2018-19 (2)/2.5**

The Governing Body while expressing its satisfaction about the publications by the faculty suggested the administration to encourage the faculty for more publications in reputed journals and conferences.

**Resolution No. VIEW/GBM/4/2018-19(2)/2.6**

The governing Body expressed its satisfaction that the students are actively participating in co-curricular, sports, social, ethical, cultural and other activities. Also expressed their happiness for achieving first place in JNTUK Central Zone Kho-Kho and third place in volleyball completion.

**Item-3 Ratification of selected faculty and approval for fresh recruitment.**

**Resolution No. VIEW/GBM/4/2018-19(2)/3.1**

The Governing Body is overwhelmed with happiness for about 66.41% of faculty was ratified by JNTUK till date.

**Resolution No. VIEW/GBM/4/2018-19(2)/3.2**

The Governing Body resolved to convey thanks to the JNT University-Kakinada for arranging faculty selections/ratification of services of existing faculty

**Item-4 Income and expenditure status for the financial year 2018-19**

The Principal sought permission from the members of the Governing Body to circulate the income and expenditure for the financial year 2018-19 later as the accounts are to be finalized.

**Resolution No. VIEW/GBM/4/2018-19(2)/4.1**

The Governing Body resolved to permit the Principal to circulate the income and expenditure under autonomous status for the financial year 2018-19 later as the accounts are to be finalized.

**Item-5 Budget for the financial year 2019-20**

The proposed budget for the financial year 2019-20 as prepared by the Finance Committee is circulated to the members.

**Resolution No. VIEW/GBM/4/2018-19(2)/5.1**

The Governing Body approved the proposed budget for the Academic year 2019-20 as prepared by the Finance Committee.

**Item-6 Proposals for the Approval of Governing Body**

**Resolution No. VIEW/GBM/4/2018-19(2)/6.1**

The Governing Body resolved to approved the proposal of NBA Accreditation application process followed by permanent affiliation and 2(f) and 12(b) and suggested to to take necessary steps to apply for NAAC Accreditation.

**Resolution No. VIEW/GBM/4/2018-19(2)/6.2**

The Governing Body suggested to promote internal faculty from the position of Associate Professor to Professor instead of recruiting Professors from external sources to maintain at least One Professor in each Department as per guidelines of JNTUK.

**Resolution No. VIEW/GBM/4/2018-19(2)/6.3**

Approval is accorded for setting up of New Computer Lab with 80 systems for JNTUK online examinations.

**Resolution No. VIEW/GBM/4/2018-19(2)/6.4**

The Governing Body approved the proposal of the following infrastructure additions for the academic year 2018-19 and approved the required funds for:

- 1) Construction of Fourth Floor to establish additional Class rooms for B.Tech and MBA for the next academic year.

m) Construction of Open Auditorium with sponsorship

**Resolution No. VIEW/GBM/4/2018-19(2)/6.5**

Approval is accorded to construct separate hostel block for women's in VIEW campus to overcome the accommodation problems in present Hostel.

**Resolution No. VIEW/GBM/4/2018-19(2)/6.6**

Approval is accorded to establish main gate at security point along with security room and increase the security people.

**Resolution No. VIEW/GBM/4/2018-19(2)/6.7**

Approval is accorded to construct Two & Four wheeler parking shed in VIEW campus as per the request raised by the students and staff.

**Minutes of the 23<sup>rd</sup> meeting of Board of Governors**

Vignan's Institute of Engineering for Women

Held on November 12, 2019 at 10.00 a.m. at Board Room, VIEW, Visakhapatnam.

**Members Presented**

1	Dr. V.Bhujanga Rao	Chairman
2	Dr. L. Rathaiah	Vice-Chairman
3	Sri K Pavan Krishna	Member
4	Dr.Archana Sharma	Member
5	Sri.Venkata Rayulu Bonam	Member
6	Prof. P. V. G. D. Prasad Reddy	Member
7	Dr.Rishi Verma	Member
8	Dr. B.Subba Rao	Member
9	Smt.P.Aruna Kumari	Member
10	Mr.Suresh Kumar Tankala	Member
11	Dr.J.Sudhakar	Member Secretary
12	Prof.A.Sesha Rao	Member

The following members have requested for leave of absence expressed their inability to attend meeting.

S.No	Name of the Member	Designation
1.	Padma Bhushan Sri. Dr. Y Lakshmi Prasad	Member
2.	Sri. R.Bala Murugan	Member
3.	Mr.B.K.Surya Prakash	Member

The meeting was initiated with the welcome note by Vice-Chairman of Governing Body of VIEW, Dr.L.Rathaiah. He gave the opening remarks by introducing new Chairmna of Governing Body Dr. V.Bhujanga Rao and other new member Dr.Archana Sharma, Dr.Rishi Verma and Mr.Suresh Kumar Tankala. He expressed confidence in getting the cooperation and support from other members of the Governing Body for smooth function of the Institution.

The Chairman requested Principal **Dr.J.Sudhakar** to present the agenda notes for discussion.

Principal welcomed , Dr.Archana Sharma, Dr.Rishi Verma and Mr.Suresh Kumar Tankala who have been recently nominated for Governing Body of VIEW and presented about important developments that took place in the College, placement record, overall results of the

college and appreciate the faculty members for their efforts in achieving the excellent results in UG and PG courses. The following items are discussed and the corresponding resolutions are adopted:

**Item-1 Confirmation of the minutes of the earlier meeting held on 13.04.2019**

The minutes of the meeting of the Governing Body held on 13.04.2019 were circulated to all the members for their comments. As there were no comments, it was declared that the minutes were confirmed.

**Item-2 Report by the Principal on the progress of the College during the Academic Year 2018-19**

Principal Dr.J.Sudhakar gave a Power point presentation on various activities of the college since the last Governing Body meeting. Copy of the same was perused by the members and approved.

**Resolution No. VIEW/GBM/4/2019-20(1)/2.1**

The Governing Body resolved to express its satisfaction upon the admissions into B.Tech., and M.B.A. for the academic year 2018-19 under the prevailing conditions, and suggested to take necessary steps for improvement of admissions in M.Tech.

**Resolution No. VIEW/GBM/4/2019-20(1)/2.2**

The Governing Body reviewed the results of UG and PG programmes and expressed its happiness over the performance.

**Resolution No. VIEW/GBM/4/2019-20(1)/2.3**

The Governing Body noted and placed on record its happiness about the University First Place in JNTUK first year results with 84.18 percent which is 5.64 percent more than the results of 2017-18 (78.54 per cent).

**Resolution No. VIEW/GBM/4/2019-20(1)/2.4**

The Governing Body is pleased to note that 193 out of 297 eligible students are placed as on date in different organizations during the academic year 2018-19.

**Resolution No. VIEW/GBM/4/2019-20(1)/2.5**

The Governing Body noted with pleasure that 4 faculty are awarded Ph.D. It is also noted that 5 faculty members submitted their Ph.D. theses and 15 faculty members pursuing Ph.D. The governing Body congratulated their effort and promised continued support to faculty in such efforts.

**Resolution No. VIEW/GBM/4/2019-20(1)/2.6**

The Governing Body while expressing its satisfaction about the publications by the faculty and suggested the management to encourage the faculty for more publications in reputed journals and conferences. Also advised to encourage students to pursue certification progrmes like NPTEL, Udacity, IoT, Fusion 360 etc.,

**Resolution No. VIEW/GBM/4/2019-20(1)/2.7**

The governing Body expressed its satisfaction that the students are actively participating in co-curricular, sports, social, ethical, cultural and other activities especially visit of ISRO, UBA activities, Activities of 150<sup>th</sup> Mahatma, Swatcha Sarveksha, Water conservation, National Sports Day.

**Item-3 Ratification of selected faculty and approval for fresh recruitment.**

A report on faculty selections made and requirement of faculty for the academic year 2018-19 is circulated to the members of the Governing Body. After perusal of the report by the members, the following resolutions are made:

**Resolution No. VIEW/GBM/4/2019-20(1)/3.1**

i. The Governing Body noted with satisfaction that the services of 91 (81.25%) existing faculty are ratified 9 new faculty are selected through the interviews conducted by JNTU-Kakinada.

ii. The Governing Body resolved to convey it's thanks to the JNT University-Kakinada for arranging faculty selections/ratification of services of existing faculty

**Resolution No. VIEW/GBM/4/2019-20(1)/3.2**

The Governing Body noted that 10 new faculty joined during this period through University selections and College level selections.

**Resolution No. VIEW/GBM/4/2019-20(1)/3.3**

The Governing Body authorized the Chairman, Governing Body to recruit the additional faculty required.

**Item-4 Income and expenditure status for the financial year 2018-19**

The Principal sought permission from the members of the Governing Body to circulate the income and expenditure for the financial year 2018-19 later as the accounts are to be finalized.

**Resolution No. VIEW/GBM/4/2019-20(1)/4.1**

The Governing Body resolved to permit the Principal to circulate the income and expenditure under autonomous status for the financial year 2018-19 later as the accounts are to be finalized.

**Item-5 Budget for the financial year 2019-20**

The proposed budget for the financial year 2019-20 as prepared by the Finance Committee is circulated to the members.

**Resolution No. VIEW/GBM/4/2019-20(1)/5.1**

The Governing Body approved the proposed budget for the Academic year 2019-20 as prepared by the Finance Committee.

**Item-6 Proposals for the Approval of Governing Body**

**Resolution No. VIEW/GBM/4/2019-20(1)/6.1**

The Governing Body resolved to approved the proposal to submit pre-qualified in the month of Mar-Apr 2020 followed by the submission of SAR in the month of May-June 2020.

**Resolution No. VIEW/GBM/4/2019-20(1)/6.2**

6.2.1 Approval is accorded for applying 2(f) and 12(b) status through an indemnity bond and it is resolved that every amount of grant that will be given by the commission to the college shall when received by the college solely be used for the benefit and purposes of the college in accordance with the terms and conditions of the grant and not for any other purpose or any other institution.

6.2.2 The Institute shall furnish to the commission the balance sheet of the Institution every year along with the annual audited accounts of the college.

6.2.3 The institute shall fulfil any other terms and condition laid down in indemnity bond.

**Resolution No. VIEW/GBM/4/2019-20(1)/6.3**

The Governing Body resolved to approved the proposal of Recruitment of Professors with Ph.D in CSE, ECE & EEE Departments to maintain at least One Professor in each Department as per guidelines of JNTUK.

**Resolution No. VIEW/GBM/4/2019-20(1)/6.4**

Approval is accorded for organizing International Conference by CSE, ECE, EEE & IT departments each during the academic year 2019-20.

**Resolution No. VIEW/GBM/4/2019-20(1)/6.5**

Approval is accorded for setting up of New Computer Lab with 100 systems for JNTUK online examinations.

**Resolution No. VIEW/GBM/4/2019-20(1)/6.6**

The Governing Body approved the proposal of the following infrastructure additions for the academic year 2019-20 and approved the required funds for:

- n) Interview panel rooms
- o) Seminar Hall in proposed fourth floor
- p) Construction of Fourth Floor to establish additional Class rooms for B.Tech and MBA for the next academic year.
- q) Construction of Open Auditorium with sponsorship

**Resolution No. VIEW/GBM/4/2019-20(1)/6.7**

Approval is accorded to construct separate hostel block for women's in VIEW campus to overcome the accommodation problems in present Hostel.

**Resolution No. VIEW/GBM/4/2019-20(1)/6.8**

Approval is accorded to construct Two & Four-wheeler parking shed in VIEW campus as per the request raised by the students and staff.

**Resolution No. VIEW/GBM/4/2019-20(1)/6.9**

Approval is accorded to implement promotion policy to all regular teaching faculty who are seeking for the promotion from **Assistant Professor Scale to Associate Professor Scale** and advised to include in administrative manual of VIEW.

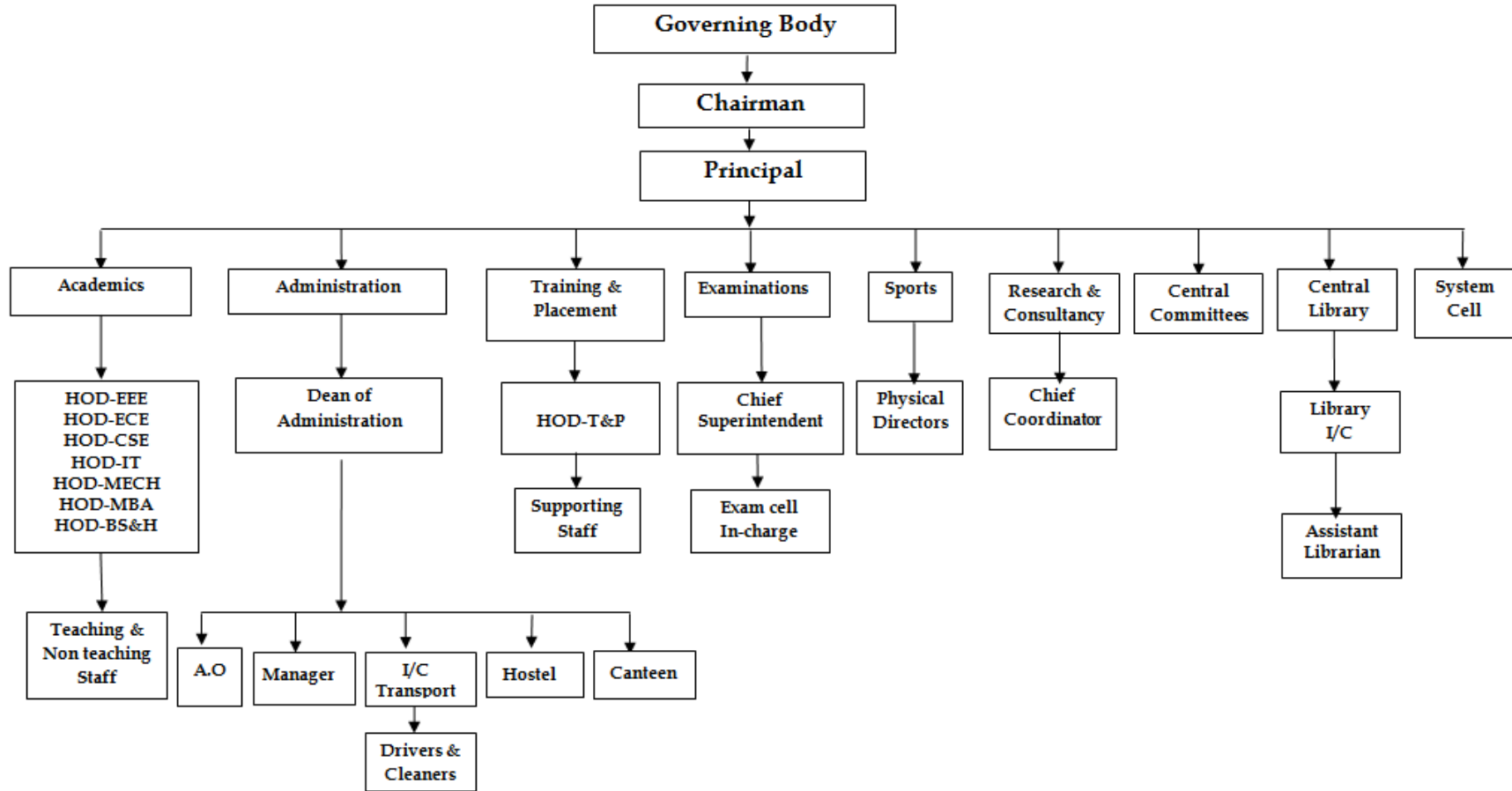
### **10.1.2(B) ADMINISTRATIVE SETUP**

The Institute has a well marked administrative set up conforming to the norms of the AICTE and the UGC.

- ✓ The Principal wields the powers with regard to financial and to all the academic and administrative matters including the conduct of examinations.
- ✓ Each of the departments has a head of the department who, in turn, assigns various tasks to different members of faculty.
- ✓ For undertaking examination oriented tasks, Principal is the Chief superintendent of Examinations.
- ✓ As far as the administrative functions are concerned, the Dean of administration and the manager looks after the activities executed by clerical, programming, data entry and ministerial staff.
- ✓ The departments have their own respective department offices which function under the guidance of respective heads of departments.
- ✓ All the monetary transactions (both the receipts and payments) are processed through a nationalized bank.
- ✓ On the whole, the members of faculty and nonteaching staff of the college believe in the dignity of labour, and all the functions of the college are meticulously planned, properly coordinated and perfectly executed.

The structure of the institutional management is shown below:

### VIGNAN’S INSTITUTE OF ENGINEERING FOR WOMEN: ORGANIZATIONAL STRUCTURE



**10.1.2 (C) DUTIES AND RESPONSIBILITIES OF ADMINISTRATIVE AUTHORITIES****(i) Principal**

The Principal is the administrative head for all the activities of the Institution. He is responsible for implementation of all the policy decisions of the management with a view to achieve the set targets.

As the head of the Institution, the Principal is a leader who inspires the students and the staff and motivates them for cordial working atmosphere to make the institution excel well. The following are the important functions:

**Academic:**

1. The Principal shall make arrangements for planning the various courses to be offered and the preparation of course materials
2. The Principal shall supervise the course timetable, staff allocation, staff attendance and syllabus coverage.
3. He/She shall ensure the conduct of internal continuous assessment examinations at appropriate periods.
4. He/She shall monitor the student projects, progress and the University examinations (theory and practical).
5. He/She shall review the reports of the analysis of test marks of the students and arrange for special coaching etc for academically poor students.

**General Administration and Finance:**

1. The Principal shall convene the Governing council meeting at least once in every semester.
2. The Principal shall make recommendations regarding plans for the development of the institution in the years to come.
3. He shall help the creation of necessary infrastructure for a conducive atmosphere for education in the campus.
4. He shall ensure the appointment of qualified staff (both teaching and non -teaching)
5. All correspondences within the campus and to outside organizations and the University will be done through the Principal with the approval of the Chairman
6. The Principal shall convene the HODs meeting at least once in 15 days and maintain the Minutes book.

7. Principal is assisted by the Finance committee and purchase committee in financial administration.
8. The Principal or the officer delegated with such powers shall counter sign all kinds of scholarship bills in respect of students of the college.

**Student Affairs:**

1. The Principal shall plan for offering value-added courses, training and placement opportunities and educational tour to the students.
2. He shall provide avenues for co-curricular, extra-curricular activities, professional societies and counseling and guidance programmes to the students.
3. He shall arrange for the periodical monitoring of students attendance and their progress in studies and arrange for parent-teacher meetings as and when necessary.
4. He shall take appropriate action to ensure that the rules and regulations are strictly followed by the students.
5. The Management expects the Principal to be a coordinating point to ensure that all the policies of the management are implemented and promote the college as an excellent educational institution.

**Research and Extension Activities:**

1. The Principal shall encourage conducting of seminars and symposia and such research – oriented activities in the campus.
2. He shall encourage the staff to become members of professional bodies, carry out consultancy works, mini projects and other extension activities.

**(ii) Head of the Department**

An efficient Departmental head is a well disciplined and dedicated person with leadership qualities. He motivates the Students and Staff to perform their respective academic / administrative duties and responsibilities. His *duties* are as under:

1. Check the attendance register every week and sign after verification.
2. Preparation of (i) academic schedules and its implementation, (ii) academic time table, (iii) laboratory log books, manuals, registers, through the concerned faculty member.
3. Prepare the list of laboratory requirements as necessary and initiate procurement action to facilitate smooth conduction of the lab experiments.
4. Carryout the stock verification, maintenance of the lab and its equipment.



5. Recommend the leaves / permissions of the staff within the department only after ensuring the work adjustments and maintain the leave record.
6. Conduct regular staff meetings to monitor the progress and preserve the minutes of the meeting.
7. Students having shortage of attendance must be counseled and their parents are informed.
8. The overall distribution of the faculty work load should be unbiased.
9. Monitor the syllabus completion at regular interval and prepare fortnightly reports for submission to the Principal.
10. Conduct and maintain the record of the sessional and practical marks awarded is as per university regulations.
11. Participate in any additional activities entrusted by the Principal

**(iii) Dean-Administration**

The Dean of Administration is a person looking into all administrative matters prescribed by Principal/Management from time to time. His/Her duties are as under:

1. Overseeing all personnel matters involving academic and non academic employees including notification, recruiting, appointment, reappointment, termination and dismissal.
2. Maintain service records and supervise the process updating personal files of both teaching and Non-Teaching staff.
3. Co-ordinate to conduct Governing Body Meeting and Prepare the Governing Body Meeting Reports
4. Evaluation of teaching and non-teaching staff appraisals for annual Increments and placing in front of Management for Approval.
5. Implementation of AICTE Pay Scales to the Teaching Staff and revision of pay scales from time to time and maintenance of service registers, salary registers of both teaching and non-teaching staff.
6. Authorization of all office & administrative, operational expenses to make payment to suppliers/vendors.
7. Verification and Authorization for Financial Assistance to teachers to attend conferences, seminars, workshops in and outside India.
8. Evaluation of Means and Merit scholarships of students and Awards to Teaching and non teaching staff.

9. Looking into affiliated University (JNTU, Kakinada) related matters such as attending meetings, submitting reports and taking necessary actions on the affiliated University Notifications and circulars from time to time.
10. Guiding the staff to prepare reports pertaining to AFRC, NIRF, Facts Finding Committee (FFC) and AICTE.
11. Exercise such other duties, as prescribed by or assigned by the Management from time to time.

#### **(iv) Training and Placement Officer**

The training and placement officer are the coordinator of placement and training cell. One faculty member from each department nominated by the respective H.O.D is currently a member of the cell. The cell meets once in every month to finalize the plan of activities for II, III, and IV-year students to improve the employability of students, the cell submits the plan for the approval of the Principal and Management. The activities of this officer comprise of (i) Training (ii) Placement and (iii) Alumni.

##### ***Training***

1. To create an awareness among the students about the requirements of various recruiting organizations.
2. To create awareness and train the students in communication skills.
3. To establish a “Centre for Career Guidance and Counseling” and to organize professional counseling by experts in career opportunities.

##### ***Placement***

1. To maintain the data base of various companies / prospective recruiters and recruiting agencies and correspond with them.
2. To coordinate with the HOD's, Exam branch, and the Principal to procure a list of the eligible students for jobs, projects, further studies and desirous of becoming entrepreneurs and guide them in the respective areas.
3. To organize regular mock interviews and group discussions in association with the language faculty.
4. To intimate the students about the placement campaign in various major cities in the country.

5. To correspond with various prospective employers with respect to Project Works, Seminars, Industry Visits and Job recruitment
6. To gather the information about further studies of various universities and display the same for higher studies.

### ***Alumni***

1. To educate the present outgoing batch of students about the alumni association and its relevance for the betterment of the students after their graduation.
2. To coordinate the filling up of the alumni proforma by the outgoing students.
3. To maintain an alumni database and conduct an alumni get together at least once in a year.
4. To send greetings or letters of appreciation to the alumni.

### **(v) In-Charge- Examination**

Examination in charge is the centre point for conducting a standard examination system in this Institution. His keen observation and proper supervision help to develop a standard assessment and evaluation system for an organization. His responsibilities include:

1. To coordinate the conduct of various examinations.
2. To inform the Principal regarding the scheduling, material requirement, procedures, invigilation status well in advance.
3. To coordinate with the administrative staff with regard to requirement of stationery, printing and other material required for the conduct of examinations.
4. To maintain total confidentiality and ethics in the conduct of the examinations.
5. To maintain all the records and information pertaining to the examinations.
6. To conduct regular results analysis with the help of administrative staff and inform the Principal.
7. To prepare a monthly, quarterly, half yearly and annual report and submit to the Principal.

### **(vi) Coordinator - Research & Development**

A research and development (R&D) coordinator perform a number of highly important roles within an organization. They are responsible for research, planning, and implementing new programs and protocols into their company or organization and overseeing the development of new products. His duties and responsibilities include:

1. To constitute a project screening committee – to process any project selected by the Staff & Students.

2. To maintain a database of the research activities carried out by the Staff & students.
3. To liaise with the outside institutions of repute for carrying out research and consultancy activities.
4. To ensure and encourage development of in-house projects.
5. To help the students in selecting live projects in their respective areas.

**(vii) Coordinator- Central Library**

The coordinator duties and responsibilities consist of the following.

1. To inform all the users the rules and regulations of the Library in terms of issue, renewal, the Do's and the Don'ts in the Library.
2. To organize library audit once in every year
3. To coordinate among student and staff and understand the library needs and inform the library about this.
4. To organize various functions and activities such as library week, or to install clubs such as reading club essentially to develop a very interactive and vibrant reading and library usage culture among the student and staff.
5. To recommend the required volumes, titles of books, Journals, Magazines, News papers, Audio video CD's and infrastructure as per AICTE/ JNTU norms.
6. To check the correctness in the stock register/ Accession register and prepare a monthly, quarterly, half yearly and annual report and submit to the Principal.
8. To bring to the notice of the Principal any complaints / suggestions from the students / staff.

**(viii) Coordinator- Games & Sports**

The Sports Coordinator at VIEW has overall responsibility for the leadership of all institutional sports and works with other staff to ensure that a diverse, well-managed sports program is in place for students. His/her main duties are:

1. To ensure the availability sufficient quantity of sports equipment through purchase as and when required by following the establish purchase procedures.
2. To coordinate the maintenance of records of the purchase i.e. quotation, purchase order, bills and stock register.
3. Any issue deemed fit must be brought to the notice of the Principal.

**10.1.2 (D) ACADEMIC AND ADMINISTRATIVE BODIES:**

The following is the list of academic and administrative bodies constituted to work towards to betterment of all stakeholders of the Organization.

**(a) Internal Quality Assurance Committee (IQAC)**

Internal Quality Assurance Cell (IQAC) has been promoting measures for institutional functioning towards quality enhancement through internalization of quality culture and institutionalization of best practices.

**Table 10.2 Composition of IQAC**

Sl. No	Designation	Recommendation of IQAC	Name of office bearer
1.	Chairperson	Head of the Institution	Dr.J.Sudhakar –Principal, VIEW
2.	Senior Teacher	One of the senior faculty as the Coordinator of the IQAC	Dr.Akanksha Mishra, Associate Professor, EEE
3.	Admin. Representative	Few Senior Administrative Officers	Dr. P.S.Ravindra, Dean-Admin Mr.P.Chandra Sekhar Babu,
4.	Senior faculty representatives	Three to eight teachers	1. Dr.K.Vijaya Kumar, HOD-CSE 2. Dr.Ch.Ramesh Babu, HOD-ECE 3. Dr.K.Durga S Prasad, HOD-EEE 4. Dr.B.Prakash, HOD-IT 5. Dr.M.Nagendrababu, HOD-MECH 6. Dr.K.Chaitanya, HOD-BS&H 7. Dr.M.Pardha Saradhi, HOD-MBA
5.	Management representative	One member from the Management	Prof.A.Sesha Rao-Academic Director
6.	Local Society nominee	One/two nominees from local society, Students and Alumni	Mr.U.Chitti Babu, D.G.M (HR), Visakha Dairy
	Alumini nominee		Ms.Sarika Bora, Senior Systems Engineer, Infosys Limited
	Student nominee		Ms.Chandana Sravani, III ECE
7.	Employer Nominee	One/two nominees from Employers/Industrialist/Stakeholders	Dr.M.Nagendrababu, Head-T&P
	Industrialist nominees		Girish Tiwari, Manager, Vizag Steel Plant
	Stakeholder Nominee		Mr.P.V.Satyanarayana Raju, RINL, Visakhapatnam

**Committee Frequency of Meetings:** As and when necessary

The prime tasks of the QCC are as follows:

1. Development and application of quality benchmarks/parameters for various academic and administrative activities of the institution
2. Arrangement for feedback response from students, parents and other stakeholders on quality-related institutional processes
3. Documentation of the various programmes/activities leading to quality improvement.
4. Development and maintenance of institutional database through College Management System for the purpose of maintaining /enhancing the institutional quality.
5. Prepare a consolidated report of all the status, in terms of losses, obsolete equipment, items recommended for writing-off, disposal of waste, general fitness of all equipment and so on.
6. Ensure research work papers are adequately documented and audit evidence is sufficient.
7. Conduct periodic training workshops to promote awareness of internal controls and to discuss changes in policies that will impact the system.
8. To give adequate counseling and guidance to students in their personal / academic / professional fronts through the Counseling and Guidance cell.

#### **b. Academic Planning and Advisory Committee**

The college academic committee is formed with the Principal and Heads of the department. The function of APAC is to make recommendations to the management of the college and to the governing board with regard to academic and professional matters. APAC has been working for the quality enrichment and attainment of expected academic outcomes. The Academic Planning and Advisory Committee takes-up the following activities.

1. Monitor submission of Lesson Plans, Issue of Attendance Registers, List of students, Class Time-Tables consisting of Tutorial classes, Sports counseling hours, GATE, CRT, PDP Classes, remedial time tables, subject revision time-table counseling.
2. Frame the necessary academic structure so as to achieve the objectives of the college and supervise the day to day administration of the college.
4. Facilitate the events such as faculty and student induction programmes, workshops, seminars and symposium, cultural activities.
5. To review the academic and related activities of the college.

6. To formulate master plan for campus development, facilitating implementation of the provision of the perspective plan.
7. To draw new schemes of development for the college.
8. To plan for resource mobilization through industry interaction, consultancy and extramural funding.
9. To promote research and extension activities in the college campus.
10. To plan for sustaining the quality of education, quality improvement and accreditation of the college.

**Committee Frequency of Meetings:** Two time a year

**Table 10.3** Composition of Academic Planning and Advisory Committee

Sl. No	Name of Committee Member	Designation	Position
1.	Dr.J.Sudhakar	Principal	Chairman
2.	Prof.A.Sesha Rao	Academic Director	Member
3.	Sri R.Sri Hari	Scientist-G, NSTL	External Member
4.	Dr.K.Vijaya Kumar	HoD-CSE	Member
5.	Dr.Ch.Ramesh Babu	HoD-ECE	Member
6.	Dr.K.Durga Syam Prasad	HoD-EEE	Member
7.	Dr.B.Prakash	HoD-IT	Member
8.	Dr.M.Nagendrababu	HoD-MECH	Member
9.	Dr.M.Pardha Saradhi	HoD-MBA	Member
10.	Dr.K.Chaitanya	HoD-BS&H	Member

### c. Examination Committee

The Prime tasks of the Committee are as follows:

1. Lesioning with examination section of JNTUK regarding the conduct of examinations (UG &PG), Spot Valuation.
2. Identification of detained candidates and promoted candidates based on credits and attendance
3. Estimation of stationary requirements for conduction of examinations
4. Monitoring and conduction of University and Internal Examinations

**Table 10.4** Composition of Examination Committee

Sl.No	Name of Committee Member	Designation	Position
1.	Dr.J.Sudhakar	Principal	Chief Superintendent
2.	Prof.A.Sesha Rao	Academic Director	Member
3.	Mr.A.Ganapathi Rao	Exam Cell in-charge	Member
4.	Mr. K. Chiranjeevi	Coordinator-UG	Member
5.	Mr.K.Santosh Kumar	Coordinator-PG	Member

6.	Dr.K.Vijaya Kumar	HoD-CSE	Member
7.	Dr.Ch.Ramesh Babu	HoD-ECE	Member
8.	Dr.K.DurgaSyamPrasad	HoD-EEE	Member
9.	Dr.B.Prakash	HoD-IT	Member
10.	Dr.M.Nagendrababu	HoD-MECH	Member
11.	Dr.M.Pardha Saradhi	HoD-MBA	Member
12.	Dr.K.Chaitanya	HoD-BS&H	Member

**Committee Frequency of Meetings:** Once after every examination session.

#### **d. Training and Placement Committee**

The Prime tasks of the Committee are as follows:

1. Provide campus drive placements for eligible students.
2. Develop the students with their behavioural skills, language and communication skills, in their four years of study and also counsel them for job opportunities in the country and abroad.
  1. Develop communication skills in students and improve the vocabulary and LSRW skills (Listening, Speaking, Reading & Writing), technical report writing and presentation skills.
  2. Prepare students for campus interviews, reasoning and aptitude tests.
  3. Maintain Alumni database and invite their valuable suggestions by conducting alumni meet regularly.

**Table 10.5 Composition of Training and Placement Committee**

<b>Sl.No</b>	<b>Name of Committee Member</b>	<b>Designation</b>	<b>Position</b>
1.	Dr.J.Sudhakar	Principal	Chairman
2.	Prof.A.Sesha Rao	Academic Director	Member
3.	Dr.K.Vijaya Kumar	HoD-CSE	Member
4.	Dr.Ch.Ramesh Babu	HoD-ECE	Member
5.	Dr.K.Durga Syam Prasad	HoD-EEE	Member
6.	Dr.B.Prakash	HoD-IT	Member
7.	Dr.M.Nagendrababu	HoD-MECH	Member
8.	Dr.M.Pardha Saradhi	HoD-MBA	Member
9.	Dr.K.Chaitanya	HoD-BS&H	Member
10.	Dr.K.V.Ramana Rao	Assistant Training Officer	Member
11.	Dr.M.Nagendrababu	Training and Placement Officer	Coordinator



**Committee Frequency of Meetings:** Once in a month**e. Library Committee**

The LC is responsible to:

- 1) Prepare the list of text books/Journals to be purchased for the current academic year.
- 2) Prepare yearly budget for Library and send recommendations to management
- 3) Conduct at least two meetings at the beginning of every semester to review the performance of all library procedures.
- 4) Review and enhance digital library resources.
- 5) Guide the librarian in the overall functioning of the central library both qualitatively and quantitatively.

**Table 10.6 Composition of Library Committee**

Sl.No	Name of Committee Member	Designation	Position
1.	Dr.J.Sudhakar	Principal	Chairman
2.	Prof.A.Sesha Rao	Academic Director	Member
3.	Dr.K.Vijaya Kumar	HoD-CSE	Member
4.	Dr.Ch.Ramesh Babu	HoD-ECE	Member
5.	Dr.K.Durga Syam Prasad	HoD-EEE	Member
6.	Dr.B.Prakash	HoD-IT	Member
7.	Dr.M.Nagendrababu	HoD-MECH	Member
8.	Dr.M.Pardha Saradhi	HoD-MBA	Member
9.	Dr.K.Chaitanya	HoD-BS&H	Member
10.	Mrs.A.L.Vineela	Librarian	Member
11.	Mrs.Yamini Padmamala	Assistant Librarian	Member
12.	Dr.K.Kushal Kumar	Assoc.Professor-EEE	Coordinator

**Committee Frequency of Meetings:** Once in a Semester**f. Research and Development Committee**

The R&DC is responsible to:

1. Review the proposals submitted by each department for R&D projects.
2. Guide the departments in submitting R&D proposals for funding agencies like AICTE/MHRD, DST, UGC, DRDO etc.,
3. Review the progress of R&D projects, if any
4. Conduct workshops, conferences, guest lectures on advanced research or emerging trends in industry needs.

**Table 10.7** Composition of Research and Development Committee

<b>Sl.No</b>	<b>Name of Committee Member</b>	<b>Designation</b>	<b>Position</b>
1.	Dr.J.Sudhakar	Principal	Chairman
2.	Prof.A.Sesha Rao	Academic Director	Member
3.	Dr.K.Vijaya Kumar	HoD-CSE	Member
4.	Dr.Ch.Ramesh Babu	HoD-ECE	Member
5.	Dr.K.Durga Syam Prasad	HoD-EEE	Member
6.	Dr.B.Prakash	HoD-IT	Member
7.	Dr.M.Nagendrababu	HoD-MECH	Member
8.	Dr.M.Pardha Saradhi	HoD-MBA	Member
9.	Dr.K.Chaitanya	HoD-BS&H	Member
10.	Dr.M.Nagendrababu	Assoc.Professor- MECH	Coordinator

**Committee Frequency of Meetings:** Twice in a Semester

**g. Other Statutory and Non-Statutory Committees**

In addition to above committees, the college has other committees to ensure proper development and management of academic, financial and general administrative affairs. All the below mentioned committees comprise of internal officials and are constituted to operationalize decisions taken by the statutory committees and also to manage day to day operations.

**Table 10.8** Composition of Other Statutory and Non-Statutory Committees

Sl.No	Committee Name	Name of Committee Members & Designation			Duties and Responsibilities
		Name of Faculty	Designation	Position	
1.	Admission Committee (AC)	Dr.J.Sudhakar	Principal	Chairman	a) Monitor admission procedures for students admitted under convener quota, management quota. b) Maintain admission register for all UG and PG students. c) Issue of code of conduct, academic rules & regulations, course structure & syllabus. d) Analyze admission trends and provide feedback/suggestions syllabus. e) Preparation & Submission of necessary documents to University & APSCHE. <b>Frequency of Meeting: Once in a Year</b>
2.		Prof.A.Sesha Rao	Academic Director	Member	
3.		Mr.N.Srikanth	Executive Director	Member	
4.		Dr.K.Vijaya Kumar	HoD-CSE	Member	
5.		Dr.Ch.Ramesh Babu	HoD-ECE	Member	
6.		Dr.B.Prakash	HoD-IT	Member	
7.		Dr.M.Nagendrababu	HoD-MECH	Member	
8.		Dr.M.Pardha Saradhi	HoD-MBA	Member	
9.		Dr.K.Chaitanya	HoD-BS&H	Member	
10.		Mr.S.A.Ramakrishna Raju	A.O.	Member	
11.		Dr.K.Durga Syam Prasad	HoD-EEE	Coordinator	
Sl.No	Committee Name	Name of Committee Members & Designation			Duties and Responsibilities
		Name of Faculty	Designation	Position	
1.	Student Welfare Committee (SWC)	Dr.J.Sudhakar	Principal	Chairman	a) To provide the necessary information about various competitive examinations to the students. b) To provide information about various careers available in the competitive world. c) To organize various career development seminars and workshops. d) To invite experts from various companies to interact with students. <b>Frequency of Meeting: Twice in a Semester</b>
2.		Prof.A.Sesha Rao	Academic Director	Member	
3.		Mr.G.Lakshmana	Asst.Prof-ECE	Member	
4.		Mrs.R.Pravallika	Asst.Prof -CSE	Member	
5.		Mr.K.Vamsi	Asst.Prof -EEE	Member	
6.		Mrs.S.Kalyani	Assoc.Prof -IT	Member	
7.		Mrs.K.Vahini	Asst.Prof -MECH	Member	
8.		Mrs.A.Venkata Lakshmi	Asst.Prof -MBA	Member	
9.		Mr.B.Nagabhushan Rao	Asst.Prof -BS&H	Member	
10.		Mrs.T.Sandhya Kumari	Assoc.Prof -ECE	Coordinator	

Sl.No	Committee Name	Name of Committee Members & Designation			Duties and Responsibilities	
		Name of Faculty	Designation	Position		
1.	Extra-curricular Activities Committee (ECAC)	Dr.J.Sudhakar	Principal	Chairman	a) Plan and conduct National level/state level student seminars, workshop, live model exhibitions, sports, games and cultural events. b) Prepare a budget estimate for the conduct of various co-curricular and extracurricular activities. c) Select students to be deputed for co-curricular and extra-curricular activities outside the college. <b>Frequency of Meeting:</b> Twice in a Semester	
2.		Prof.A.Sesha Rao	Academic Director	Member		
3.		Dr.K.Vijaya Kumar	HoD-CSE	Member		
4.		Dr.Ch.Ramesh Babu	HoD-ECE	Member		
5.		Dr.K.Durga Syam Prasad	HoD-EEE	Member		
6.		Dr.B.Prakash	HoD-IT	Member		
7.		Dr.M.Nagendrababu	HoD-MECH	Member		
8.		Dr.M.Pardha Saradhi	HoD-MBA	Member		
9.		Dr.K.Chaitanya	HoD-BS&H	Member		
10.		Ms.M.Hema V. Lakshmi	Physical Director	Member		
11.		Department Association Members				Member (s)
12.		Dr.K.Kushal Kumar	Assoc.Prof.-EEE	Coordinator		
Sl.No	Committee Name	Name of Committee Members & Designation			Duties and Responsibilities	
		Name of Faculty	Designation	Position		
1.	College Development Committee (CDC)	Dr.J.Sudhakar	Principal	Chairman	a) Receive budgetary requirements consolidated by the Principal which are submitted by various HODs. b) Recommend proposals for infrastructural improvement periodically. c) Recommend APAC the new courses to be started. d) Initiate Programs for conduction GATE, CRT, PDP classes, Soft Skills Training, Certification Courses, Bridge Courses, Add-on Courses for the students. e) Act as a link between APAC and college administration. <b>Frequency of Meeting:</b> Once in aYear	
2.		Prof.A.Sesha Rao	Academic Director	Member		
3.		Mr.N.Srikanth	Executive Director	Member		
4.		Dr.K.Vijaya Kumar	HoD-CSE	Member		
5.		Dr.Ch.Ramesh Babu	HoD-ECE	Member		
6.		Dr.K.Durga Syam Prasad	HoD-EEE	Member		
7.		Dr.B.Prakash	HoD-IT	Member		
8.		Dr.M.Nagendrababu	HoD-MECH	Member		
9.		Dr.M.Pardha Saradhi	HoD-MBA	Member		
10.		Dr.K.Chaitanya	HoD-BS&H	Member		
11.		Dr.P.S.Ravindra	Dean-Admin	Member		

Sl.No	Committee Name	Name of Committee Members & Designation			Duties and Responsibilities
		Name of Faculty	Designation	Position	
1.	Purchase Committee (PC)	Dr.J.Sudhakar	Principal	Chairman	a) Accept and review the purchase proposals/quotations received from different departments. b) Conduct the negotiations with suppliers for the best quality & price. c) Make recommendations to the Management for placing the purchase orders. <b>Frequency of Meeting:</b> Twice in a Semester
2.		Prof.A.Sesha Rao	Academic Director	Member	
3.		Mr.N.Srikanth	Executive Director	Member	
4.		Dr.K.Vijaya Kumar	HoD-CSE	Member	
5.		Dr.Ch.Ramesh Babu	HoD-ECE	Member	
6.		Dr.K.Durga Syam Prasad	HoD-EEE	Member	
7.		Dr.B.Prakash	HoD-IT	Member	
8.		Dr.M.Nagendrababu	HoD-MECH	Member	
9.		Dr.M.Pardha Saradhi	HoD-MBA	Member	
10.		Dr.K.Chaitanya	HoD-BS&H	Member	
11.		Lab In-charge of Concerned Department		Member	
12.		Sr.Faculty of Concern Department		Member	
13.		Dr.P.S.Ravindra	Dean-Admin	Coordinator	
Sl.No	Committee Name	Name of Committee Members & Designation			Duties and Responsibilities
		Name of Faculty	Designation	Position	
1.	Faculty Recruitment Committee (FRC)	Dr.J.Sudhakar	Principal	Chairman	a) Recruit teaching and non-teaching faculty as per the requirement in each discipline fulfilling the cadre ratio of AICTE by following 3-tier procedures (written test/Interview, Teaching Demo and HR skills). b) Define the roles and responsibilities for all positions. c) Analyze recruitment trends and provide feedback to APAC <b>Frequency of Meeting:</b> Once in a Semester
2.		Prof.A.Sesha Rao	Academic Director	Member	
3.		Mr.N.Srikanth	Executive Director	Member	
4.		Dr.K.Vijaya Kumar	HoD-CSE	Member	
5.		Dr.Ch.Ramesh Babu	HoD-ECE	Member	
6.		Dr.K.Durga Syam Prasad	HoD-EEE	Member	
7.		Dr.B.Prakash	HoD-IT	Member	
8.		Dr.M.Nagendrababu	HoD-MECH	Member	
9.		Dr.M.Pardha Saradhi	HoD-MBA	Member	
10.		Dr.K.Chaitanya	HoD-BS&H	Member	
11.		Internal Examiner of the concerned Department		Member	
12.		External subject expert		Member	
13.		Dr.P.S.Ravindra	Dean-Admin	Coordinator	

Sl. No	Committee Name	Name of Committee Members & Designation			Duties and Responsibilities	
		Name of Faculty	Designation	Position		
1.	Alumni Committee	Dr.J.Sudhakar	Principal	President	a) To post updates regarding activities of college in social networks. b) Contact students to know about their designations, and their employers. c) To arrange guest lectures by the alumni to make the students understand the requirements of the corporate companies. d) Gather the information of passed out students pursuing higher degrees. <b>Frequency of Meeting: Once in Year</b>	
2.		Prof.A.Sesha Rao	Academic Director	Advisor		
3.		Mrs.T.Sandhya Kumari	Assoc.Prof-ECE	Vice President		
4.		Dr. Dominic Souri	Assoc.Prof-BS&H	Joint Secretary		
5.		Dr. S Ramesh	Assoc.Prof-MBA	Treasurer		
6.		Sr.Faculty from Each Department				Executive Member
7.		Dr.Ch.Ramesh Babu	HOD-ECE	Secretary		
Sl.No	Committee Name	Name of Committee Members & Designation			Duties and Responsibilities	
		Name of Faculty	Designation	Position		
1.	N.S.S. Committee	Dr.J.Sudhakar	Principal	Chairman	a) To plan and execute N.S.S. Programmes for the year. b) To conduct Special N.S.S. camp and to submit the audited statement of accounts at the end of the year. c) To distribute the work for the NSS volunteers for maintenance of cleanliness in and around the College. d) To take care of campus beautification	
2.		Prof.A.Sesha Rao	Academic Director	Member		
3.		Mrs.M.Dhana L.Bhavani	Asst.Prof-ECE	Member		
4.		Mr.D.Rajendra Dev	Asst.Prof -CSE	Member		
5.		Mrs.T.Sushma	Asst.Prof -EEE	Member		
6.		Mr.S.Sagar	Asst.Prof -IT	Member		
7.		Mrs.P.Prasanna Kumari	Asst.Prof -MECH	Member		
8.		Mrs.T.Suguna	Asst.Prof -MBA	Member		

9.		Dr.K.P.Suhasini	Assoc.Professor- BS&H	Programme Officer	and gardening. e) To maintain the records of the activities conducted and submit the same to the IQAC, JNTUK. <b>Frequency of Meeting:</b> As and when necessary
Sl.No	Committee Name	Name of Committee Members & Designation			Duties and Responsibilities
		Name of Faculty	Designation	Position	
1.	Scholarship Committee	Dr.J.Sudhakar	Principal	Chairman	a) To make the students aware of the various schemes / assistance / scholarships available for students. b) To scrutinize scholarship forms of the students and ensure to submit / process the same on time to the respective Department. c) To maintain the records and submit the same to the IQAC Committee. <b>Frequency of Meeting:</b> Once in Year
2.		Prof.A.Sesha Rao	Academic Director	Member	
3.		Dr.K.Vijaya Kumar	HoD-CSE	Member	
4.		Dr.Ch.Ramesh Babu	HoD-ECE	Member	
5.		Dr.K.Durga Syam Prasad	HoD-EEE	Member	
6.		Dr.B.Prakash	HoD-IT	Member	
7.		Dr.M.Nagendrababu	HoD-MECH	Member	
8.		Dr.M.Pardha Saradhi	HoD-MBA	Member	
9.		Dr.K.Chaitanya	HoD-BS&H	Member	
10.		Mr.K.Rajendra Prasad	Asst.Prof-ECE	Member	
11.		Mr.P.Mohan Ganesh	Asst.Prof-IT	Member	
12.		Mr.S.A.Ramakrishna Raju	A.O.	Member	
13.		Dr.P.S.Ravindra	Dean-Admin	Coordinator	
Sl.No	Committee Name	Name of Committee Members & Designation			Duties and Responsibilities
		Name of Faculty	Designation	Position	
1.	Institute Newsletter Committee	Dr.J.Sudhakar	Principal	Chairman	a) To assess the editorial quality of the content to be published which includes programs of the college, information regarding the events organized in the college under various committees. b) To collect the information from staff and students relevant for publication under various headings.
2.		Prof.A.Sesha Rao	Academic Director	Member	
3.		Dr.P.Sudhakar	Assoc.Prof-ECE	Member	
4.		Mrs.Rahimunnisa Shaik	Asst.Prof -CSE	Member	
5.		Mr.K.Vamsi	Asst.Prof -EEE	Member	
6.		Mr.B.Ajay Kumar	Asst.Prof -IT	Member	
7.		Mr.S.V.Satya Prasad	Asst.Prof -MECH	Member	

8.		Mrs.A.Venkata Lakshmi	Asst.Prof -MBA	Member	c) To get the magazine printed by the end of every quarter in and distribute the same to students and staff <b>Frequency of Meeting:</b> Once in every quarter
9.		Mr. B.Nagabhusana Rao	Asst.Prof -BS&H	Member	
10.		Mr. S.K.Chaitanya Ch	Asst.Prof - BS&H	Editor	
11.		Dr.T.Radha Kriahna Murty	Professor-BS&H	Chief Editor	
Sl.No	Committee Name	Name of Committee Members & Designation			Duties and Responsibilities
		Name of Faculty	Designation	Position	
1.	Discipline Committee	Dr.J.Sudhakar	Principal	Chairman	a) To maintain and enforce strict discipline within the college campus.
2.		Prof.A.Sesha Rao	Academic Director	Member	b) All the students should wear their ID Cards while they are in the campus and their respective class rooms.
3.		Dr.K.V.Ramana Rao	Asst.Prof-ECE	Member	c) To monitor the movement of the students in the college.
4.		Dr.P.Vijaya Bharathi	Asst.Prof -CSE	Member	d) To ensure that students maintain complete silence in the library.
5.		Mrs.K.Therissa	Assoc. Prof -EEE	Member	e) To maintain proper discipline in the college canteen and student waiting room during the college working hours.
6.		Mr. Ch.Ramasuri A N	Asst.Prof -IT	Member	<b>Frequency of Meeting:</b> As and when necessary
7.		Mr.V.Ananda Babu	Asst.Prof -MECH	Member	
8.		Mrs.M.Satyavathi	Asst.Prof -MBA	Member	
9.		Mr.S.Giri Babu	Asst.Prof -BS&H		
10.		Ms.M.Hema V. Lakshmi	Physical Director	Member	
11.		Dr.P.S.Ravindra	Dean-Admin	Member	
12.	Dr.K.Kushal Kumar	Assoc.Prof-EEE	Coordinator		
Sl.No	Committee Name	Name of Committee Members & Designation			Duties and Responsibilities
		Name of Faculty	Designation	Position	
1.	Website Maintenance Committee (WMC)	Dr.J.Sudhakar	Principal	Chairman	a) To administer data acquisition process, update and maintenance of the institute's website with regard to all activities related to Domain & Hosting.
2.		Prof.A.Sesha Rao	Academic Director	Member	b) To collect information & data reports from various academic departments & internal bodies and timely updates
3.		Mr.D.Tilak Raju	Asst.Prof-ECE	Member	c)To provide feedback and recommendations to the authority with regard to the website
4.		Mrs.G.Sandhya	Asst.Prof -CSE	Member	
5.		Mr.K.V.Sri Ram Prasad	Asst.Prof -EEE	Member	
6.		Mr.Gandi Netaji	Asst.Prof -IT	Member	
7.		Mr.A.V.Pradeep	Asst.Prof -MECH	Member	
8.		Mrs.M.Sowjanya	Asst.Prof -MBA	Member	



9.		Mr. K.Ramesh	Asst.Prof -BS&H	Member	maintenance activities from time to time. <b>Frequency of Meeting:</b> As and when necessary
10.		Dr.P.S.Ravindra	Dean-Admin	Member	
11.		Dr.B.Prakash	HoD-IT	Coordinator	

Sl.No	Committee Name	Name of Committee Members & Designation			Duties and Responsibilities
		Name of Faculty	Designation	Position	
1.	Entrepreneurship Development Committee (EDC)	Dr.J.Sudhakar	Principal	Chairman	a) To create an environment for self-employment, promote innovation and Entrepreneurship development through various programs b) To introduce the concept of Entrepreneurship as a part of the curriculum c) To promote employment opportunities. d) To provide a platform for interaction with entrepreneurs. e) To conduct skill industrial development training programs with updated technologies. <b>Frequency of Meeting:</b> Once in every semester
2.		Prof.A.Sesha Rao	Academic Director	Member	
3.		Dr.K.Vijaya Kumar	HoD-CSE	Member	
4.		Dr.Ch.Ramesh Babu	HoD-ECE	Member	
5.		Dr.K.Durga Syam Prasad	HoD-EEE	Member	
6.		Dr.B.Prakash	HoD-IT	Member	
7.		Dr.M.Nagendrababu	HoD-MECH	Member	
8.		Mr.V. Ananda Babu	Assoc. Prof-MECH	Member	
9.		Mr.P.V.Sarat	Asst. Prof- EEE	Member	
10.		Mr.R.Ravi	Asst. Prof- CSE	Member	
11.		Mr.G.Lakshmana	Asst. Prof- ECE	Member	
12.		Dr.S.Ramesh	Assoc. Prof-MBA	Coordinator	
Sl.No	Committee Name	Name of Committee Members & Designation			Duties and Responsibilities
		Name of Faculty	Designation	Position	
1.	Industry Institute Interaction Committee (IIIC)	Dr.J.Sudhakar	Principal	Chairman	a) To give industrial exposure to faculty members and students, thus enabling them to tune their knowledge to cope with the industrial culture. b) To assist the Departments in organizing workshops, conferences and symposia with joint participation of the industries. c) To organize industrial visits for Faculty members and students.
2.		Prof.A.Sesha Rao	Academic Director	Member	
3.		Mr.D.Tilak Raju	Asst. Prof-ECE	Member	
4.		Mr.I.Raju	Asst.Prof -CSE	Member	
5.		Mr.K.Vamsi	Asst.Prof -EEE	Member	
6.		Mr.P.Mohan Ganesh	Asst.Prof -IT	Member	
7.		Mr.A.V.Pradeep	Asst.Prof -MECH	Member	
8.		Mrs.T.Suguna	Asst.Prof -MBA	Member	

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9.		Dr.P.Sudhakar	Assistant P.O	Member	d) To assist the Departments in establishing rapport with industries for taking up mini projects and projects. <b>Frequency of Meeting:</b> As and when
10.		Dr.K.V.Ramana Rao	Assistant T.O	Member	
11.		Dr.M.Nagendrababu	HoD-T&P	Coordinator	

### 10.1.2 (E) Service Rules and Regulations

The Institute has a well-framed Human Resource Policies and Administrative Practices manual consisting *recruitment policies and procedures, duties and responsibilities, service rules and regulations and motivational incentives* which is revised from time to time. The last revision was done and published in October 2019 and displayed in institute website (<http://view.edu.in/admsrpp.php>). The following are the list of contents of the book.

Section	Name of the Content	Page No(s)
<b>I</b>	<b>INTRODUCTION</b>	<b>1-11</b>
	<i>1.1 About the Institution</i>	
	<i>1.2 Vision, Mission &amp; Core Values</i>	
	<i>1.3 Quality Policy</i>	
	<i>1.4 Governing Body</i>	
	<i>1.5 Human Resource Management Policy</i>	
	<i>1.6 Extent of Application</i>	
<b>II</b>	<b>HUMAN RESOURCE MANAGEMENT</b>	<b>12-28</b>
	<i>2.1. Planning for Human Resources</i>	
	<i>2.2. Classification of Human Resource in VIEW</i>	
	<i>2.3. Recruitment Policy &amp; Process</i>	
	<i>2.4 Salary, Welfare Measures/Allowances</i>	
<b>III</b>	<b>DUTIES AND RESPONSIBILITIES</b>	<b>29-63</b>
	<i>3.1 Duties and Responsibilities of Administrative Authorities</i>	
	<i>3.2 Duties and Responsibilities of Instructional/Teaching Staff</i>	
	<i>3.3 Duties and Responsibilities of Coordinators/In-Charges</i>	
	<i>3.4 Duties and Responsibilities of Various committees</i>	
	<i>3.5 Duties and Responsibilities of Non-Teaching Staff-Academics</i>	
	<i>3.6 Duties and Responsibilities of Supporting Staff-Academics</i>	
	<i>3.7 Duties and Responsibilities of Supporting Staff-Technical</i>	
	<i>3.8 Duties and Responsibilities of Supporting Staff-Administration</i>	
	<i>3.9 Duties and Responsibilities of Supporting Staff-Maintenance</i>	
	<i>3.10 Duties and Responsibilities of Supporting Staff-Transport</i>	
<b>IV</b>	<b>SERVICE RULES AND REGULATIONS</b>	<b>64-76</b>
	<i>4.1 Service Conditions</i>	
	<i>4.2 Custody of Certificates</i>	
	<i>4.3 Withdrawal of Original Certificates</i>	
	<i>4.4 Resignation</i>	
	<i>4.5 Termination</i>	
	<i>4.6 Service Certificate</i>	
	<i>4.7 Working Hours</i>	
	<i>4.8 Attendance</i>	
	<i>4.9 Meeting with Heads of Departments</i>	
	<i>4.10 Intra Departmental Meeting</i>	
	<i>4.11 Faculty Meeting</i>	

	<i>4.12 National &amp; Festival Holidays</i>	
	<i>4.13 Provisions for Leaves</i>	
<b>V</b>	<b>STAFF APPRAISAL POLICY</b>	<b>77-83</b>
<b>VI</b>	<b>PROMOTION POLICY</b>	<b>84-89</b>
<b>VII</b>	<b>MOTIVATIONAL INITIATIVES</b>	<b>90-99</b>
	<i>7.1 Faculty Awards</i>	
	<i>7.2 Cash Awards for Good Academic Performance</i>	
	<i>7.3 Cash prizes for regular attendance and best performance</i>	
	<i>7.4 Cash Benefits for In-House Trainers</i>	
	<i>7.5 Research Incentive Policy</i>	
<b>VIII</b>	<b>EXIT POLICY</b>	<b>100-102</b>
<b>IX</b>	<b>CODE OF CONDUCT</b>	<b>103-107</b>
	<b>ANNEXURES</b>	

The human recourse policies and administrative practices manual of the organization is published and kept for everyone's reference in College website. This allows for effective dissemination of the information to the concerned stakeholders. Few of the contents of hand book illustrated below.

#### **A. Service Conditions**

The employees in the institute are governed by the service rules and regulations stipulated hereunder.

- a) The employees at Vignan's Institute of Engineering for Women have been classified into two categories, namely Teaching and Non- Teaching.
- b) The teaching fraternity has an extraordinary role to play in the academic life of VIEW, merely as teachers, researchers, counselors, and contributors in various academic affairs.
- c) The Non-Teaching fraternity is responsible to support and enable the academics at the institution.
- d) VIEW has various Departments of Engineering, Sciences, and Humanities. Each of these faculties consists of various roles and run under the supervision of Principal.
- e) A person shall be deemed to have been appointed to the service when his appointment is made to a post in accordance with the existing AICTE norms.
- f) Initially the appointment of the selected candidate will be temporary and placed on probation for a period of two years, after which the performance of the appointee will be reviewed to regularize the appointment. The period of probation can be extended by management in case of non- satisfactory performance

- g) If a person, having been appointed temporarily to a post is subsequently appointed regularly: he / she shall commence probation from the date of regular appointment.
- h) Any candidate appointed on temporary / ad- hoc basis, his / her services can be terminated without any notice and without giving any reason.
- i) The service conditions of the incumbent will be governed by the rules and regulations of the college issued from time to time.

**(i) Custody of Certificates**

The employee requires depositing the original certificates (SSC/ Intermediate / UG/ PG) (convocation) with the establishment section prior to or at the time of reporting duty, besides, the copies of experience certificate, relieving letter, salary certificate, PAN, Voter – ID and 4 passport size photographs require submitting.

**(ii) Withdrawal of Original Certificates**

- a. Withdrawal of educational certificates (all or part) for any purpose i.e. higher studies or any other purpose, a proof copy has to be enclosed along with the request letter.
- b. An undertaking letter should be submitted stating that she / he will return the certificates within the stipulated time or else salary will be held up for the concerned month till the submission of certificates.
- c. Those who are withdrawing certificates for higher studies should submit a copy of custodian within one week of date of issue of custodian.

**(iii) Working Hours**

- a. All employees are required to work for a minimum of 7 hours a day from Monday to Saturday.
- b. Working hours notified may be changed as per the requirement of the Institution from time to time and the employees shall comply accordingly.

**(iv) Attendance**

- a. All employees shall mark their attendance through biometrics and in respective Attendance Registers maintained in the office of the College.
- b. Employees reporting for duty more than 20 minutes late shall obtain permission from the Head of the Department / Principal. Without a formal permission they are deemed to be absent and will apply for leave.

- c. All employees are allowed to avail 2 hour permission in two days during a month. Exceed this liable to be treated as absent for the day.

**(v) Meeting with Heads of Departments**

Meeting with Heads of Departments is conducted once in a month to brief them about the latest developments in the college and also to get feedback from them regarding fulfillment of various targets set including the academic schedule. Minutes of the meeting shall be recorded and circulated among all the HOD's. Emergency meetings are organized whenever required.

**(vi) Faculty Meeting**

Total faculty meeting is conducted once in a semester. The agenda of the meeting is circulated among the faculty at least two days in advance to enable the participants to come prepared for a fruit full discussion without loss of time. The minutes of the meeting are recorded and circulated immediately after the meeting. Emergency meeting could be called for whenever required.

**(vii) National & Festival Holidays**

Institution will notify list of holidays at the beginning of calendar (year) as per the National and Festival Holidays Act.

**B. Leave Policy**

VIEW provides different kinds of leave to meet with the various eventualities of its employees. Availing of leave should be with proper notice so that the work of the organisation does not suffer. Leave shall not be claimed as a right. Leave sanctioning authorities have to use their discretion in sanctioning the leave so that the effect is minimum on the normal functioning of the college.

**General Information:**

- a) These rules shall be called the "Vignan's Institute of Engineering for Women, Leave Rules".
- c) A leave account shall be maintained for each employee in the appropriate form.
- d) Leave cannot be claimed as a matter of right. **The sanctioning authority has full discretion to refuse or revoke leave of any description when the exigencies of service so demand.**
- f) The sanctioning authority may recall an employee to duty before the expiry of his / her leave.

g) Unauthorized absence from duty may be treated as misbehavior involving disciplinary action.

h) For casual leaves, the HOD shall be the competent authority to grant leave to staff, the Principal shall be the competent authority to grant leave to all Heads. In the case of the Director and the Principal, the Secretary or the Chairman of the Governing Council will be the authority competent to sanction leave.

The following types of leaves are available for staff:

**(i) Casual Leave:**

- a) Every employee is eligible for 10 days of casual leave in a calendar year.
- b) Casual leave cannot be availed without obtaining prior approval. Sanction of casual leave shall be subject to work adjustment.
- c) The total period of absence on casual leave at a time, with or without combination of public holidays and compensatory casual leave shall not exceed 8 days.
- d) Casual leave can be combined with public holidays and compensatory casual leave, but not with any other kind of leave or vacation.
- e) Casual leave up to Two Days shall be sanctioned by the HOD subject to prior notice i.e. at least before one day.
- f) CL for more than Two Days shall be sanctioned by the HOD subject to prior intimation of at least one Week.
- g) Casual leave for more than Two Days where sufficient notice period of one week is not provided by the employee may only be sanctioned by the Principal under extraordinary situations subject to prior intimation of at least one day.
- h) Un-availed leave shall not be carried over to the next calendar year. It means that the casual leave may not be accumulated.
- i) In case of employees still serving the probation period, Casual Leave shall be sanctioned on pro-rata basis. It means that they shall be eligible for a maximum of one day of casual leave for every  $1\frac{1}{3}$  month of completed service subjected to a maximum of 10 days in a calendar year. This condition shall not be applied to permanent employees.
- j) Casual leaves for half day can be granted to an employee for the Forenoon or Afternoon session.

**(ii) Earned Leave:**

- a) All the permanent employees are eligible for 6 days of earned leave per every calendar year of completed service
- b) EL for a given calendar year shall be credited on the 1<sup>st</sup> of January of the following year provided that the staff should have completed **Two years** of uninterrupted service at VIEW by that time.
- c) Earned Leaves can be accumulated up to 120 days.
- d) Earned leave cannot be combined with casual leave or compensatory casual leave, but can be combined with pre-vacation and all other kinds of leaves. The maximum availability of earned leave utilization at a continuous stretch is 50% of overall ELs or 15 leaves whichever is less subject to a minimum of 3 ELs sanctioned by the HOD subject to prior intimation of at least one week. There should be a minimum 1-month gap between one slot to another slot for usage of ELs.
- e) However, if such maximum exceeds the available EL count, then the eligibility is the total available EL count.
- f) Accumulated leaves cannot be encashed at the time of working but can be encashed at the time of leaving the Institution.
- g) Principal is the authority to sanction earned leave to all faculty members.

**(iii) Maternity Leave:**

- a) All the women permanent employees are eligible for 120 days of paid maternity leave provided that they have completed probation service by the date of application.
- b) A woman permanent employee is eligible for maternity leave only twice in her entire service.
- c) Principal shall sanction maternity leave to all the women employees provided that the staff should apply with the prior notice of at least one Month.
- d) The salary for the period of maternity will be paid out in six equal installments after six months uninterrupted service from the date of rejoining. The employee should submit the Birth Certificate of the child at the time of rejoining.
- e) No leave beyond the expiry of maternity leave will be granted. However, in exceptional cases where the female employee is not in a position to join duty immediately on expiry of maternity leave due to weakness or other illness, leave without pay not exceeding 30 days



may be granted on production of medical certificate. Further leave beyond 30 days may be considered at the discretion of the GC/Committee.

**(iv) Paternity Leave:**

- a) All the men permanent employees are eligible for 7 days of paid paternity leave provided that they have completed probation service by the date of application.
- b) A man permanent employee is eligible for paternity leave only twice in his entire service.
- c) Paternity leave may be utilized only within a month of the date of birth of the child.
- d) Principal shall sanction paternity leave to men employees provided that the staff should apply with the prior notice of at least one Month.
- e) The salary for the period of paternity leave will be paid out after submitting the Birth Certificate of the child.

**(v) Marriage Leave:**

- a) All the Permanent employees are eligible for 15 days of marriage leave.
- b) Principal shall be the sanctioning authority to all the employees provided that the staff should apply with the prior notice of at least one Month.
- c) The salary for the period of marriage leave will be paid out after submitting the Marriage Certificate.

**(vi) Academic Leave:**

- a) All teaching staff members are eligible to attend two reputed conferences per year.
- b) Academic leave may be sanctioned for attending conferences, seminars and workshops etc. which help the faculty to achieve professional growth.
- c) Principal shall sanction academic leave to all the faculty members. However, the staff should submit necessary proofs such as the event invitation along with the application.
- d) All permanent staff members, who are at the verge of submitting their Ph.D thesis, may apply for one month of academic leave after pre-talk. However, such candidates should submit a proof of pre-talk proceedings for availing leave and proof of submission of thesis within three months from the date of application of the leave failing which the academic leave will be deducted from all other eligible leaves.
- e) The salary for the period of such doctorate thesis submission based academic leave will be paid out after submitting the proof of thesis submission.

**(vii) On Duty:**

- a) On duty for spot valuation shall be sanctioned only twice in a semester or a Maximum of 15 days per year whichever is applicable.
- b) On duty for any other Examination related works like observer, Lab external duties should not exceed 5 days in a year. If, exceeds 5 days the approval of HOD/Principal is mandatory.
- c) In addition to the above, “on duty” for any works assigned by HOD/Principal/Management may be approved by Principal. However, the staff should submit necessary proof of evidence along with the invitation/work/assignment.

**(viii) Emergency/Medical Leave:**

- a) Every permanent employee is eligible for 8 days of Emergency/Medical leave in a calendar year.
- b) Un-availed medical leave shall not be carried over to the next calendar year. It means the Medical leave shall not be accumulated.
- c) Medical leave cannot be claimed as a matter of right and sanction of Medical leave shall be subjected to severity of Health condition. That means prior approval/sanction is required or Evidences can be submitted within one week of reporting to the institute post the illness.
- d) Medical leave up to One Day shall be sanctioned by the HOD/Principal after completion of all casual leaves.
- e) Medical leave for More than One Day shall be sanctioned by the Principal only. However, the staff should intimate in-advance to the HOD & Principal wherever possible and also submit the necessary proof of evidences for medical illness within one week of reporting to the institute post the illness.
- f) Medical leave for a period exceeding 8 days shall be approved at the sole discretion of the principal in consultation with the management.

**(ix) Compensatory Casual Leave:**

- a) All the employees are eligible for compensatory casual leave if they have approved “OTs”.

b) The staff who has worked at least 6 continuous stretch or cumulative hours assigned/authorized by HOD/Principal/Management in holidays shall be sanctioned “OT”. The approved OT shall be compensated with CCL during the same calendar year.

c) Principal is the sole approving authority for OTs in consultation/approval of the HOD

**(x) Extra-ordinary Leave:**

a) Extra-ordinary leave may be granted to the employees on the recommendation of the Governing body on private affairs or academic affairs like short / long term assignments in India or abroad/Higher studies/Fellowship etc. They will not be entitled for any pay or allowance during this period.

**(xi) Special Casual Leave:**

a) All permanent employees are eligible for special casual leave not exceeding 6 days for the purpose of undergoing Family Planning Operation. He/she is required to produce proof of having undergone the operation for regularizing the leave availed.

b) Any humanitarian grounds issues such as miscarriage/loss of immediate family members may be also considered for special casual leave.

c) Principal, in consultation of the management, shall be the sole authority to sanction Special Casual Leave.

**(xii) Study Leave**

a) An employee may be granted study leave to enable him to undergo part time higher studies or course work or specialized training in a professional or technical subject and close connection with the branches of study relevant to the College and has bearing on the candidates’ area of specialization.

b) Study Leave shall not be granted to one, whose absence will cause cadre-difficulties, besides dislocation in the regular work of the college.

c) In case candidate pursues Ph.D. on part – time basis, study leave will be granted to fulfill the mandatory course work as stipulated by the University. The candidate may be given half pay during the study leave.

d) An employee availing himself of study leave for pursuing higher studies, shall furnish a bond in the prescribed form and on stamped paper to serve the College on return to duty they must serve in the College for a minimum period of one year. Otherwise, they have to pay double of salary received during the study leave.

e) They should make alternative arrangements for their theory and lab classes with prior approval. SL permission will be granted only if they make alternative arrangement for their classes, through a teacher handling subject for the same class.

**(xiii) Summer Vacation:**

a) Principal will be the competent authority to fix/suffix the summer vacation schedule in accordance with JNTUK schedule wherever applicable.

b) Each department has to maintain a skeletal staff to attend department works like invigilation duties, class work and other works assigned by HOD/Principal during the vacation as determined by the Principal.

c) Schedule of vacation for all the employees in a department is to be approved by the HOD.

d) By the time of declaring vacation, the staff should have at least 1 year of uninterrupted service at VIEW to avail summer vacation.

e) If any faculty attend spot valuation or engaged with any other examination related duties during the vacation, all those days will be included in summer vacation. No extra days will be allowed.

f) Vacation Eligibility criteria for Permanent Teaching staff:

One-week Vacation	The staff members who have $\geq 1$ and $< 2$ years of service at Vignan Group.
Two-week Vacation	The staff members who have $\geq 2$ and $< 3$ years of service at Vignan Group.
Four-week vacation	The staff members who have $\geq 3$ years of service at Vignan Group.

**(xiv) Other terms & conditions:**

a) Permanent Employee: An employee is considered to be permanent on completion of one year of uninterrupted service in the institute.

b) Temporary employees are not eligible to avail any kind of extraordinary leaves except casual leaves, academic leaves and On-duty.

c) The total number of staff availing “CL” of any department at any given point of time should not exceed  $1/3^{\text{rd}}$  of the total staff of the same department at such instance.

- d) If any employee would like to leave the organization by giving one-month notice, they will not be allowed to avail any type of leave except available CL as per pro-rata. If they use extra leaves, loss of pay will be implemented. They can compensate the extra leaves by working extra days to avoid loss of pay. One-month notice can be exempted by the Principal if staff resigned at the end of semester/academic year.
- e) Employees are advised to contact HR department to know the leave record and then apply for leave.
- f) Prefixing and Suffixing of Holidays: The leave under these rules (except casual leave) may be either prefixed or suffixed or both by Sundays/holidays but the intervening Sundays /holidays shall be included in such leave.
- g) Over Staying after Leave: An employee who remains absent after the expiry of his/her originally granted or subsequently extended leave is not entitled to salary for the period of absence including sanctioned leave period.

### **C. Recruitment Policy & Process**

#### **(i) Objective**

To have in place a competent staff selected on the principles and practices of equal opportunities with due representation to all sections of people represented by the organisation and with no discrimination on the basis of caste, creed, sex, race, or disability. All recruitment will be based on predetermined specific positions and competency.

#### **(ii) General Criteria Governing Recruitment**

- a. The minimum age for recruitment is 18 years. VIEW does not permit child labour in any of its establishments nor does it encourage child labour in any of its partner institutions.
- b. Age limit of up to 70 (Seventy) years for teaching staff and 65 (Sixty-Five) years for non-teaching staff is recommended. If service is required beyond the recommended age limit, it may be extended on an annual basis.
- c. VIEW reserves the right to do a background check on any person selected for employment.
- d. Persons selected for appointment should possess sound mental and physical health.
- e. Faculty Members are recruited based on the qualifications prescribed by AICTE Regulations, 2019 and subsequent amendments in these Regulations issued by AICTE from time to time.

- f. Non-teaching faculty/Administrative staff is recruited as per the state government's norms. At present the following criterion is being followed.

**(iii) Internal Appointments**

In order to avoid stagnation of the competent employees and encourage career growth, Management should develop mechanism for creating avenues for growth/promotion.

When a vacancy arises, internal appointment may be promoted as far as possible. But this is purely at the discretion of the E.D and Principal who may assess the situation objectively on the basis of the merits of the fresh requirements and actual staff position.

**(iv) Advertisement**

- a. The Dean of Administration will be responsible for initiating action such as advertising for the vacancy.
- b. For regular and contract posts, it is mandatory to advertise the vacancies in the newspaper or VIEW website ([www.view.edu.in](http://www.view.edu.in)).
- c. There should be a minimum of 10 days between the date of publication of the advertisement and interview.

**(v) Short listing**

- a. All applications are scrutinized to ensure that they conform to the minimum requirements of the position.
- b. Persons given as reference in the application may be contacted to further refine the short list.
- c. For a single post, from the suitable applications received, an appropriate number will be called for the interview process.
- d. Intimation for interview is sent thereafter.

**(vi) Assessment process**

The assessment process for teaching staff recruitment shall have all of the following assessments:

Round-1: Written Test

Round-2 Technical Round (Demo in front of Panel Members)

Round-3: HR Round (With Executive Director)

[It is only for shortlisted candidates from the above rounds].

**(vii) Interview Panel**

The interview panel must meet in advance in order to prepare and agree questions, tests etc. to be asked to candidates and to ensure that similar questions and the same range of topics will be covered for each candidate for the same position.

For the test and interview – the appropriate panel must be constituted which should have subject specialists. The final interview panel will comprise of the appointing authority and subject specialists.

**(viii) Proceedings of Interview**

Detailed proceedings of the interview will be recorded by the Chairperson of the Interview Board and will be attested by the Interview Board Members.

**(ix) The Offer Letter**

Upon satisfactory performance of the candidate, the Offer Letter is sent to the selected candidate. Candidates should confirm their acceptance in writing. A regret letter might be sent to candidates not found suitable during the interview.

**(x) Letter of Appointment**

The selected candidate must bring the relieving order from the previous organisation before joining duty. An appointment letter duly signed by the Appointing Authority is issued to the candidate at the time of joining.

**(xii) Joining Report**

On joining, the candidate should give the joining report and signed by the Principal and forwarded to the Main Office.

**D. Staff Appraisal Policy****(i) Purpose**

In an effort to recognize and reward the performance of employees, it is the organization's philosophy that the principal component to enhance compensation shall be through annual increment based on performance evaluation by APAC.

**(ii) Application of the Policy**

- a. The policy applies to all teachers, including the Head of the Departments, employed by the Institution except those who have less than one-year service.
- b. All regular employees are eligible for yearly increment based on the results of their Performance Appraisal conducted annually.

c. All employees will be informed in writing about their annual increments after the Performance Appraisal.

**(iii) General Principles Underlying this Policy**

The performance of staff assessed through **3 criteria** for the purpose of annual increment.

Criteria No.	Element of Criteria	Max. Score	% of Weightage
I	Academic Results & Feedback	4 Marks	40%
II	Research & Development	3 Marks	30%
III	Supplementary Activities	3 Marks	30%
<b>Total</b>		<b>10 Marks</b>	<b>100%</b>

**Criterion -1** is mainly focused on the academic performance of staff which covers the teaching related activities, domain knowledge, semester results and students feed back in an academic year.

**Criterion -2** is mainly considered the faculty output in Research and Development activities in an academic year. Based on cadre of faculty, the expected output of R&D shall be categorized. R & D activities includes Research papers published in scholarly journals, Book publications, research projects, consultancy projects, organizing and attending conferences/seminars, workshops and FDPs.

**Criterion -3** covers curricular and extracurricular activities, counseling/mentoring of students, roles and contributions in Institutional Governance and administration, awards and achievements and Professional Development Activities.

The detailed evaluation procedure of each criterion is given in Institution manual.

**(iv) Grant/Award of Annual Increments:**

Increments shall be sanctioned by the Management as recommended by the Principal. The grant of number of increments is based on the score secured by the faculty out of the total score of 10.

Secured Score	Grade	No. of Increments
$\geq 7.5$	A+	3 (Three)
$<7.5$ & $\geq 6.5$	A	2 (Two)
$<6.5$ & $\geq 5$	B	1 (One)
$<5$	C	No Increment



**(v) Special Allowance**

a. Teaching Staff with a cadre of Assistant Professor secured  $<6.5$  &  $\geq 5$  marks (1 increment) and secured full marks in results as per Criteria-1 (3 out of 3), the faculty will be given a onetime special allowance of Rs.5,000/-

**(vi) Termination/Serving Notice to Teaching Staff**

a) If a teaching staff falls in 'B' grade in 2 continuous years, the Management/Principal have right to terminate or service one month notice to staff for termination due to lack of improvement in performance.

b) If a teaching staff falls in 'C' grade, the Management/Principal have right to terminate the faculty immediately or service one month notice to staff for termination. In special cases, the Principal shall allow an opportunity to improve the performance with in one academic year.

**(vii) Letter of Annual Increment:**

All employees will be informed in writing about their annual increments after the Performance Appraisal.

**E. Staff Promotion Policy**

Any progressive institution should make sufficient provision for the satisfactory promotion of personnel to higher positions. Opportunity for promotion to higher positions within an organisation gives personnel an opportunity to fully utilize their abilities and therefore serves as a basis for motivation.

**General Principles underlying this Policy**

- ✓ The promotion of an employee is purely based on the merit cum seniority basis and vacancy position in the concerned department.
- ✓ All promotions shall be subject to completion of minimum qualifying period and other requirements such as employee's current academic performance, their research work, number of publications, commitment of the staff to the improvement of the institution etc.
- ✓ Promotion shall not be influenced by the employee's race, religion or gender.
- ✓ The promotion from Assistant professor to Associate Professor and Associate Professor to Professor post are purely vacancy based.
- ✓ Promotion are considered by a Committee consisting of the following:
  - Principal of the college concerned

- Principal of another college within the group
  - HoD of the Department concerned
  - One Senior Professor of the Department and college concerned
  - HoD/Two Senior Faculty of concern Department of another college within the group
- ✓ The Screening Committee will review the performance appraisal, academic performance and other capabilities of each candidate and personally interview the candidates.
  - ✓ The Committee, based on the above factors, shall prepare a list of candidates recommended for promotion in the order of merit and submit for approval. The list will be placed before the Governing Council along with the Service Register of the individuals for approval. The approved candidates shall be promoted from the rank of Assistant Professor to Associate Professor or Associate Professor to Professor.
  - ✓ Those who are promoted shall be placed in the pay scale applicable to that category.
  - ✓ All decisions on promotions shall be taken up in the month of June-July every year. However, the revised pay will be implemented with effect from the date of acquired Doctorate Degree/Submission of Provisional Certificate in case of Associate Professor and date of next increment due in case of Professor.
  - ✓ Filling up of any post's consequent to retirement, resignation, termination, cessation of employment, transfer, demotion, promotion etc. of permanent incumbent shall not be automatic and will be done at the discretion of the Chairman/CEO/Principal.
  - ✓ For Non-Teaching staff, time-bound Grade Promotions as stipulated in the Pay Revision will be granted.

## **F. Welfare Facilities for Staff**

### **(i) Provident Fund**

VIEW is committed to comply with statutory provisions of Employees Provident Fund Deduction will be made from the salary of employees and will be deposited to the designated provident fund accounts along with the contribution of the organisation as per the provisions of the said Act. Employees must comply with the statutory requirements like nomination and can avail of such ensuing benefits as prescribed by law.

**(ii) Employees State Insurance (ESI)**

For Non-teaching Technical and Admin Staff - Employees State Insurance benefit (ESI) is covered for those employees who are coming under the purview of the ESI Act, 1948. The ESI benefits are Medical benefit, Sickness benefit, Maternity benefit, Disablement benefit, Dependents benefit, funeral expenses and other benefits.

**(iii) Group Medical Insurance**

To provide employee welfare through basic assurance of healthcare to employees and help them to meet unforeseen personal expenses arising from medical emergency. All regular and contractual employees of the Institute, including probationers will be covered. Annual entitlement of Group Medical Insurance is Rs.5,00,000/- (Rupees Five Lakh only). This can be used only by the individual or by the family members covered under this policy.

**(iv) Subsidized Transport Facility**

The institute buses are running on “No profit – No loss” basis.

- All the staff members who are drawing a salary of less than Rs.15,000 will be provided a free transport facility.
- The staff who are drawing a salary of above Rs.15,000 but less than Rs.20,000 will be given 50 per cent concession in transport charges.
- The staff who are drawing a salary of above Rs.20,000 will be given 40 per cent concession in transport charges.
- The applicable bus fees will be deducted from the salary of faculty.

**(v) Free boarding and Lodging**

Free boarding and lodging for certain faculties, Staff holding students hostel coordinator/student hostel sports coordinator/Assistant Warden Post.

**(vi) Free Tea / Coffee** is provided to the Teaching, Non-Teaching and Administrative staff during both the sessions.

**(vii) Non-Teaching staff, Maintenance Staff and the Drivers** are given free gifts, sweets and cloths during Deepavali festival.

**(viii) Travelling Allowance:**

Travelling allowance is in the nature of reimbursement of reasonable expenses incurred by the employee while travelling and halting at an outstation on official duty. All journeys shall

be authorized by the competent authority i.e. Principal and necessary approval shall be obtained prior to proceeding on an official tour.

The Principal may sanction TA advance subject to the maximum of 75% of the expected expenditure. The mode of travel applicable, the daily allowance payable and the rates of local conveyance and accommodation charges reimbursable to various categories of employees are as follows.

***Mode of Travel:***

- |                                      |   |                   |
|--------------------------------------|---|-------------------|
| 1. Director/Principal/Vice Principal | - | Airfare/First A/c |
| 2. Professor/HOD                     | - | Second A/c        |
| 3. Associate Professor               | - | Third A/c         |
| 4. Assistant Professor               | - | Sleeper           |

Reservation charges, AC/Super fast surcharge, cancellation charges, bedroll charges are reimbursable. Normal service charges for booking of tickets by travel agent are admissible.

The institution may reserve and book to and fro air tickets through local travel agents. For rail and bus tickets, the person intending to travel may take necessary advance for booking such tickets.

**(ix) Daily Allowance & Reimbursement of Accommodation**

<b>Cadre</b>	<b>Daily Allowance (Per day)</b>	<b>Reimbursement of Accommodation (Per day)</b>
Director/Principal/ Vice Principal	Rs.500	Rs.2000
Professor/HOD/Associate Professor	Rs.300	Rs.1500
Assistant Professor	Rs.200	Rs.800

**(x) Local Conveyance:**

Local Conveyance is applicable to the faculty who wish to attend WS/Conference/ FDP or any other duty assigned by Principal within the limits of the city. Travelling Allowance, DA and accommodation not applicable.

<b>Director/Principal/ Vice Principal</b>	<b>Professor/HOD/Associate Professor</b>	<b>Assistant Professor</b>
Rs.1000 per day	Rs.500 per day	Rs.300 per day

**G. Motivational Initiative Policies**

It is a natural thing that nobody acts without a purpose behind. Therefore, a hope for a reward is a powerful incentive to motivate employees. Besides monetary incentive, there are some other stimuli which can drive a person to better. This will include job satisfaction, job security, job promotion, and pride for accomplishment. Therefore, incentives really can sometimes work to accomplish the goals of a concern. Therefore, management is offering the following categories of incentives to motivate employees:

**(i) Faculty Awards**

The institute shall offer incentives in the form of Cash awards, Mementos, Certificates to staff. The policy of incentives and the eligibility conditions should be made known to all the concerned and all announcements in this regard will be made public. The following incentives shall be operative.

*1. Pratibha Award:*

“Academic Excellence Awards is a very commendable initiative”. It is very positive to have this common organization at VIEW at to award all-round efforts in academic excellence. Staff who makes an outstanding contribution to teaching & learning are awarded with “Pratibha (The Best Teacher) Award”. The award winners will be honored with a certificate and a cash award of Rs.5,000/- each.

**Parameters considered for assessment:**

- ✓ It will be rewarded subject wise i.e. the subject result during the academic year should be more than 5% of the last 3 years average result of the same subject (Or) the subject result must be 100% during the present academic year.
- ✓ Students feedback should be above 90%

*2. Sastra Award:*

To encourage and appreciate research, Sastra Awards are presented to VIEW faculty who make a mark in research publications and presentations. Faculty research work is honored with cash awards for their outstanding contributions.

*3. Vishista Seva Award:*

Employee’s retention is one of the strengths of VIEW. All teaching and non teaching staff of VIEW who served the organization for about Ten years and more in Vignan Group are

recognized for their service and are presented with Vishista Seva Award with a cash award of Rs.5000/-

#### 4. Vijetha Award:

Faculty at VIEW are recognized and honored for their individual academic and related achievements in their respective domains. Vijetha awards are presented to those faculties who have achieved awarded and recognitions in State/University/ /National/International Level are presented with Vijetha Award.

### (ii) Research Incentives

At Vignan's Institute of Engineering for Women, Research is an integral part of the academic activity carried within various undergraduate and postgraduate programs. These different activities and initiatives over the last one decade are consolidated to prepare this Policy of VIEW on Promotion of Research & Innovation, Consultancy & Extension Services.

#### 1. Incentive for book publications

1. Full text book with single author : INR 20000
2. Full text book with two authors : INR 10000 each author
3. Full text book with multiple authors : INR 5000 each author
4. Chapter Contribution : INR 3000

*Note:* Published book or chapters or monographs must have 'VIEW' as the affiliation.

#### 2. Incentive for Research Publication

If a research paper is published based on his/her work in hard copy or in electronic form in a refereed journal, he / she will pay an incentive as indicated below.

SCI Journal	10000
Un paid Scopus Journal	7,500

The publications will be considered only if they are indexed in Web of Science or in Scopus. If the paper is contributed by more than one author the incentive will be shared among the faculty

### (iii) Incentives for Presentation of Research Papers in Conferences/Seminars in India

- ✓ The International/ National conference must be of repute (viz. IEEE, Springer/Wiley etc.) and the hosting Institutions must be of Institutes of repute-IITs/IISc/NITs/IITs/ Universities/ Deemed Universities etc.
- ✓ The paper/article must be published in any National/International Journal/Conference proceedings.

- ✓ The faculty would be allowed OD + Registration fees on actual basis or Rs. 5,000/- whichever is less.
- ✓ TA/DA will be paid as per the Institute norms.
- ✓ In case of joint authorship only one faculty can avail the facility.
- ✓ Each faculty can present research papers in Conferences of repute twice in an academic year with financial assistance (limited to Rs. 10,000/- only).
- ✓ Maximum number of ODs is limited to one week during lean period. Number of ODs during the academic period is subject to prior approval of Principal.
- ✓ Only Oral presentation of research papers is acceptable.

**(iv) Incentives for Presentation of Research Papers in Conferences outside India/Abroad.**

- ✓ The faculty has to approach AICTE (which provides 100% funding subject to meeting their norms) for Travel Grant or other Funding Agencies of Govt. of India.
- ✓ It has been observed that some of the proposal may not meet AICTE norms besides paucity of funds with them because of their All India Scope. Therefore, VIEW may also consider funding for International Conferences on case to case basis, subject to 60% to be paid by the candidate and 40 % by VIEW with the candidate having at least 5 years service in VIEW. Also, the candidate should register for Ph.D after coming as soon as possible.
- ✓ The staff who wish to apply for incentives for paper presentation in the International conferences abroad need to get approval from Chairman/CEO at least one Month in advance.

**Note:**

1. The Incentive under the category of Presentation of Research Papers in Conferences in India/Abroad (6.3 & 6.4) will be paid only after submission of duly filled application and attaching copies of evidence countersigned by the HOD and R&D Coordinator.
2. However the faculty can apply for travel advance to the maximum of 75% of the expected expenditure subject to approval of the Principal.

**(v) Incentives for attending Workshops/FDPs**

- ✓ The Workshops/Symposium/FDPs hosting Institutions must be Institutes of repute- IITs/IISc/NITs/IITs/IIM/Universities/Deemed Universities etc.

- ✓ The faculty would be allowed OD+ Registration fees on actual basis or Rs. 5,000/- whichever is less, when the Workshops/Symposium/FDPs have minimum of 3 days duration.
- ✓ The faculty would be allowed OD+ Registration fees on actual basis or Rs. 3,000/- whichever is less, when the Workshops/Symposium/FDPs have less than 3 days duration.
- ✓ TA/DA will be paid as per the Institute norms.
- ✓ Each faculty can attend Workshops/ Symposium /FDPs of repute twice in an academic year with financial assistance. However, financial assistance is limited to Rs. 10,000/- only.
- ✓ Maximum number of ODs is limited to one week during lean period. Number of ODs during the academic period is subject to prior approval of Principal.
- ✓ Minimum service clause is not applicable to attend conference/symposium/FDP
- ✓ Faculties going for attending FDPs outside need to disseminate knowledge / information by organizing faculty Development Program (FDP)/ Student Development Program (SDP)/ Student Workshop/ Summer etc for the benefit of Faculty and Students in their respective departments.
- ✓ The OD and Registration claim under Research Incentive Schemes (RIS) of VIEW must be made within a month in the prescribed form.

**(vi) Incentive for Generation of Research Grants**

- ✓ Faculty members are expected to submit proposals for research grants from funding agencies. It is quite likely, that these projects may involve modernization of laboratories, acquiring of equipment required specific to the research study or conducting of surveys etc.
- ✓ The incentive will be linked to the total amount of research grant sanctioned by the sponsoring agency. The incentive will be 20% of the research grant received from the funding agency.
- ✓ Since the amount being released in phases, the incentive(s) paid is also proportional to the amount received by the Institute.



**(vii) Incentive for Consultancy work**

To encourage genuine consultancy work from the faculty, VIEW announces a policy whereby the faculty can claim 100% of the amount charged under the consultancy work. This is subject to the following conditions:

- ✓ Faculty should be the sole in-charge of the consultancy work
- ✓ The said consultancy work should be undertaken post the approval of the principal and the agreement should be undertaken between VIEW and the concerned third party
- ✓ The payment for the consultancy work should be credited to VIEW which will further be passed on to the faculty.

**(viii) Incentives for Professional Body Membership**

- ✓ All faculty members on roll of VIEW having more than Five SCI/ SCOPUS research papers, acquiring membership for National and International professional societies are eligible for reimbursement of 50% of cost of membership registration fee subject to Maximum of Rs.10,000.
- ✓ Maximum of Rupees Ten Thousand (Rs. 10,000) will be paid for International society membership and Rupees Five Thousand (Rs. 5,000) for National society membership and Rupees Two Thousand (Rs. 2,000) for State Level Membership.
- ✓ Incentive claim under Research Incentive Schemes (RIS) of VIEW must be made within a month of registration with the professional bodies.

**(ix) Incentives for Research Awards/Any recognition received by the faculty from reputed Professional Bodies and Agencies (For which Vignan has not provided any funding)**

Awards Received from Agencies	International Level	National Level	State level	University Level
Incentive (INR)	10000	5000	2000	1000

**(x) Incentive for Doctoral Research Guidance**

Description	Supervisor	Co-Supervisor
Incentive	10000	5000

**H. Staff Exit Policy**

The purpose of this policy is to identify academic, organizational or human resource factors that have contributed to an employee's decision to leave the employment. This also helps to enable the management to identify any trends requiring attention or any opportunities for improving the

management's ability to respond to employee issues. It enables the Institute to improve and continues to develop recruitment and retention strategies aimed at proper talent nurturing/management.

This policy covers the procedures to be adopted when any employee of the Institute leave employment for whatever reason.

**Scope:**

This policy applies in the case where in the employees who resign and get relived after serving or getting the notice period served.

**Objectives of the Policy:**

The purpose of conduction of the exit interview is to:

- a) Try and retain the employee by addressing his/her grievance and expectations
- b) Try and find out exact reasons for resignation and
- c) To suggest to Management remedial measures to reduce further attrition.

**Voluntary Participation and Confidentiality**

Employees are responsible for participating in the exit interview process on a voluntary basis. If an employee chooses to participate in an exit interview, he/she will be encouraged to be honest, candid, and contractive in their responses. The information received through Exit Interviews will be confidential. No specific information that could possibly be traced back to an ex-employee will be disseminated or discussed.

**Exit by Resignation**

- a) If any staff member wants to resign from the job, the concerned staff member shall give a minimum of one month / 30 days advance notice or as per the conditions specified in the appointment order about his / her intention of leaving job, only at the end of the academic year to the Principal in writing.
- b) In case, where the end of notice period falls during the course of a semester, he / she may be relieved only at the end of the semester.
- c) The un-availed leave at the credit of the staff member shall not be adjusted towards the notice period.
- d) In case if, he / she takes leave for a day, then the leave availed will be treated as on loss of pay with the cut in the salary for the day during the notice period.

- e) While getting relieved, files, materials and documents, etc., entrusted to him / her shall be handed over to the person nominated by the HOD under proper acknowledgement.
- f) The staff member can apply for his/her the relieving order from the Institution only after the submission of “No Dues Certificate” in the prescribed form along with a copy of handing over charge record in case if he/she happens to be in-charge of the laboratory.
- g) Any staff member may be relieved immediately if he / she gets a Government Job or the concerned individual’s spouse is transferred or he / she is getting married. But this is subject to the discretion of the management after assessing the merit of the request.
- h) The Principal reserves the right to waive – off / reduce the notice period.
- i) The Principal will arrange an Exit interview with the staff after the acceptance of his/her resignation with a view to obtain a candid feedback.

**Exit by Termination**

- a. The Institution may terminate the services of an employee under special circumstances, such as reduced workload, performance not satisfactory as seen from the feedback and report of HODs, or if found medically unfit, after giving one month notice or pay in lieu thereof.
- b. No such Notice shall be necessary, if the termination is as a result of proven misconduct after an enquiry conducted in accordance with the college Rules.

**Procedure and Reporting of Policy:**

1. A committee comprising of Academic Director, Principal and Dean of Administration should conduct the exit interview after the confirmed leaving date has been received by HR Department of any particular staff member.
2. The employee will be asked a standard set of question and given a chance to discuss additional information they feel would be beneficial for the Institute working.
3. Academic Director, Principal will fill the exit interview form in prescribed format (Annexure- II).
4. The information will be analyzed regularly by Human Resources Department to identify areas or determine trends that may need to be addressed. Periodically, human resources Department will share their analysis and recommendations with designated members of the Staff/Dean-Admin/Principal/Academic Director.
5. The analysis and review will include

- Appropriate statistical information regarding the number and distribution of employee departures during the preceding year and her/his reasons for leaving;
- An analysis and discussion of any trends or common themes which are suggested by the exit interview feedback.
- A summary of any actions or interventions taken during the year on the basis of exit interview information.

**Issue of Service Certificate:**

Every permanent employee shall be entitled to a Service Certificate at the time of leaving the service of the Institution. Such Certificate shall be valid if it is issued and signed by the Principal.

**10.1.3. DECENTRALIZATION IN WORKING AND GRIEVANCE REDRESSAL MECHANISM (10)**

*(List the names of the faculty members who have been delegated powers for taking administrative decisions. Mention details in respect of decentralization in working. Specify the mechanism and composition of grievance redressal cell including Anti Ragging Committee & Sexual Harassment Committee)*

**10.1.3 (A) Decentralization in working:**

A core team of about 20 members owns and lead the major processes in the institute to see that all these processes are intact. The responsibilities of the decision makers are discussed in Table 10.9. In decentralization every member has freedom for their responsibilities, which helps in speedy completion of assigned tasks.

**Table 10.9 List of faculty members who are administrators/decision**

Sl. No	Name	Responsibility
1.	Prof.A.Sesha Rao	Academic Director
2.	Dr.J.Sudhakar	Principal
3.	Dr.P.S.Ravindra	Dean of Administration
4.	Dr.B.Prakash	Head of Department-Information Technology
5.	Dr.K.Vijaya Kumar	Head of Department-Computer Science & Engineering
6.	Dr.K.Durga Syam Prasad	Head of Department-Electrical & Electronics Engineering
7.	Dr.Ch.Ramesh babu	Head of Department-Electronics & Communication Engg.

8.	Dr.M.Nagendrababu	Head of Department-Mechanical Engineering
9.	Dr.K.Chaitanya	Head of Department-Basic Sciences & Humanities
10.	Dr.M.Pardha Saradhi	Head of Department-Master of Business Administration
11.	Mr.A.Ganapathi Rao	In-charge: Examinations
12.	Dr.Akanksha Mishra	Coordinator-IQAC
13.	Dr.M.Nagendrababu	In-charge- Training and Placements & Coordinator-R&D
14.	Mr.I.Raju	In-charge- System Cell
15.	Dr.S.Ramesh	In-charge- Entrepreneurship Development Cell
16.	Dr.K.Kushal Kumar	In-charge- Discipline Cell, Library & Physical Education
17.	Dr.K.Jyothsna	In-charge- Women Grievance & Anti-Sexual Harassment Cell
18.	Mrs.S.Kalyani	In-charge- Grievance and Redressal Cell (GRC)
19.	Mr.K.Suryanarayana Rao	In-charge- Anti Ragging Cell
20.	Mr.Y.Sai Krishna	Campus Manager

### 10.1.3 (B) Mechanism of Grievance Redressal Cell

The Institution has set up the following cells to address any grievance received from students and staff and recommends appropriate action to the authorities.

- (i) Grievance and Redressal Cell (GRC)
- (ii) Anti Ragging Cell (ARC)
- (iii) Women Grievance & Anti-Sexual Harassment Cell

#### (i) Grievances Redressal Cell (GRC)

As per All India Council for Technical Education Establishment of Mechanism for Grievance Redressal Regulations, 2012, F. No. 37-3/Legal/2012, dated 25.05.2012. Vignan's Institute of Engineering for Women is committed to providing a harmonious & fair learning environment. Students and Staff have access to processes that allow for appeals, complaints and grievances that are to be resolved. Student and staff grievance resolution process seeks to facilitate their formal resolution of grievances as close as possible to the source of the aggrieved person's dissatisfaction, though there will be instances when either students may choose to lodge a formal appeal or a grievance needs to go to a higher authority for resolution.

The institute has the following mechanism to analyze the grievances.

1. Suggestion boxes are placed on all corridors in the Institute to lodge the feedback/complaint/suggestion of all stakeholders.
2. The committee should meet once in a month to investigate the complaints raised by students and staff, if any.
3. The duty of Grievance Redressal Cell is to provide a fair representation for all the concerned parties.
3. During the course of the investigation, the investigator will maintain careful notes of interviews with the aggrieved member and relevant witnesses.
4. In addition to the written statements and testimony of the student and the faculty member, the committee may collect and consider any information it deems relevant and hear from anyone it deems to have relevant information. Both the student and faculty member may suggest the names of persons with relevant information, but the committee makes the final decision about whom to interview.
5. The proceedings and the committee's deliberations will be confidential and not to be open to the public.
6. After investigation upon grievances received, the committee members prepare a report and forwarded to Principal for further action.
7. Thereafter, the principal on reviewing and understanding the level of the problem forwards the same to the management committee for necessary action.

**Table 10.10** Composition of Grievances Redressal Cell

Sl.No	Name of the Staff	Designation	Role
1	Dr.J.Sudhakar	Principal	Chairman
2	Prof.A.Sesha Rao	Academic Director	Member
3	Dr.K.Vijaya Kumar	HoD-CSE	Member
4	Dr.Ch.Ramesh Babu	HoD-ECE	Member
5	Dr.K.Durga Syam Prasad	HoD-EEE	Member
6	Dr.B.Prakash	HoD-IT	Member
7	Dr.M.Nagendrababu	HoD-MECH	Member
8	Dr.M.Pardha Saradhi	HoD-MBA	Member
9	Dr.K.Chaitanya	HoD-BS&H	Member
10	Dr.T.Radhakrishna Murty	Professor-BS&H	Member
11	Mrs.P.Vijaya Bharathi	Assoc. Professor-CSE	Member
12	Mrs.T.Sandhya Kumari	Assoc. Professor-ECE	Member
13	Dr.K.Jyothsna	Assoc. Professor-BS&H	Member

14	Mrs. K. Therissa	Assoc. Professor-EEE	Member
15	Mrs.S.Kalyani	Assoc. Professor-IT	I/c. Grievance Cell

**Table 10.10 (A)** Some of the actions taken by Grievance cell

<b>Complaints</b>	<b>Actions</b>
Students and faculty have complained that most of the buses are overcrowded	Seat allocation was introduced and additional buses were procured
Students and staff have complained against the old infrastructure in the washrooms	All the washrooms have been renovated with new flooring and plumbing.
Students and faculty requested for freezing water machines to have cool water in the campus	Four Freezing water machines have purchased and one in each floor
Students have complained against the medical kit in departments	Arranged separate medical kits in each department for students and staff.
Students have complained against the Shortage of beds in the rest rooms	Additional beds arranged in all rest rooms in the campus
Students have complained to Extend the CCTV Cameras in corridors in all floors	CCTV Cameras installed in all the four floors
Placing Trash Bins in Class room and wash rooms and surroundings of the campus	Trash bins are placed in all class rooms, wash rooms and other appropriate places in campus

### **(ii) Anti-ragging Cell:**

As per All India Council for Technical Education notified Regulation for prevention and prohibition of ragging in AICTE approved Technical Institutions vide No. 37-3/ Legal/ AICTE/ 2009 dated 01.07.2009 Anti Ragging Cell established in the Institution to monitor, direct and oversee the functions and performance of the Anti-Ragging Squads in prevention and curbing of ragging in the institution.

### **Ragging Prevention at VIEW**

- Anti-ragging squad is constituted as per AICTE guidelines.
- Names, telephone nos. of authorities have been put on web site. In case of any emergency student can contact the authority.
- Staff members do the necessary counselling from Time-to-time Sensitize.
- Surprise / Routine visits to hostel, College canteen, common room & other sensitive area by the committee members.

The committee comprises of following members.

**Table 10.11** Composition of Anti-ragging Cell

Sl. No	Name	Designation	Position	Phone No.
1	Dr.J.Sudhakar	Principal	Chairman	9133300346
2	Mr.M.Joga Rao	Police Representative	S.I. Duvvada Police Station	9440796053
3	Mr.M.S.V.Prasad	Representatives of Local Media	Field Officer	9959087088
4	Dr.K.Durga Shyam	HoD-EEE	Faculty	9550014738
5	Mrs.Ch.R.S.Valli	Hostel Warden	Mgt. Represen.	9550299709
6	Mr.Y.Sai Krishna	Campus	Non-Teaching Staff	9133300354
7	Sri.K.Bhaskara Rao	Parent Representative	Member	8977489200
8	Sri.E.Eswara Rao,	Parent Representative	Member	8341169171
9	Mr.K.Suryanarayana	Asst.Prof, BS&H	Coordinator	9642352326
10	Ms.K.Sri Rekha	III Year Class Representative	Student Member-CSE	9391197198
11	Ms.K.Vinusha	III Year Class Representative	Student Member-ECE	9392449988
12	Ms.K.Padmavathi	III Year Class Representative	Student Member-EEE	9515266516
13	Ms.Bhagya Sri	III Year Class Representative	Student Member-IT	9493399749
14	Ms.K.Surya Prabha	III Year Class Representative	Student Member-ME	9398429433
15	Ms.Palli Bhargavi	II Year Class Representative	Student Member-MBA	9392462313

**Table 10.12** Institute level Anti-Ragging Squads

Sl.No	Name	Designation	Position	Phone No.
1	Mrs. Ch. Padma Vani	Assoc.Prof, ECE	Chair Person	9866194699
2	Mrs.M.Mamatha Laxmi	Asst.Prof, CSE	Member	9246621037
3	Ms.B. M. Pushpa Latha	Assoc.Prof, EEE	Member	9640782871
4	Mr. A.V. Pradeep	Asst.Prof, ME	Member	9866317946
5	Dr.K.Jyothsna	Asso.Prof, BS&H	Member	9063001918
6	Dr. G.V.Ramakrishna Rao	Assoc.Prof, MBA	Member	9642144268



**Duties & Responsibilities**

1. Should meets often to discuss the steps to be taken to prevent ragging in the campus.
2. Mandatorily, anti-ragging undertaking is taken from students and their parents at the time of admission.
3. Awareness programs are conducted to the students in association with AP legal Services Authority, Local Police, Progressive Psychologists Association and various NGOs about ragging act, punishments and consequences.
4. Posters depicting the anti-ragging act and its punishments are displayed on all notice boards, corridors and at the canteen.
5. Contact numbers of the anti-ragging committee members are displayed at various sensitive places across the campus.

**(iii) Women Grievance & Anti-Sexual Harassment Committee/Cell (WG & ASHC):**

A Women Grievance & Anti-sexual Harassment committee is established in the college to ensure safe and healthy working environment for the female students and staff. The cell plays dual role. The Cell is required to work in the direction of providing help to any female complaining of discrimination, either gender discrimination or otherwise, any kind of abuse, loneliness, peer pressure, groupism, home sickness, insecurity and/or inferiority complex in terms of physical appearance, hostel issues, harassment from room-mates, adjusting and adopting to the new environment etc.

The Cell also deals with issues relating to sexual harassment at the college as per the guidelines of Sexual Harassment of Women at Workplace (Prevention, Prohibition & Redressal) Act, 2013. It is applicable to all students, staff and faculty. The following is also sexual harassment and is covered by the committee:

- Eve-teasing, Unsavory remarks,
- Jokes causing or likely to cause awkwardness or embarrassment,
- Innuendos and taunts, Gender based insults or sexist remarks,
- Unwelcome sexual overtone in any manner such as over telephone (obnoxious telephone calls) and the like,
- Touching or brushing against any part of the body and the like,
- Displaying pornographic or other offensive or derogatory pictures, cartoons, pamphlets or sayings,

- Forcible physical touch or molestation and Physical confinement against one's will and any other act likely to violate one's privacy.

**Table 10.13** Composition of Women Grievance and Anti-Sexual Harassment Committee

Sl. No	Name	Designation	Position	Phone No.
1	Dr.K.Jyothsna	Assoc.Prof-BS&H	President	8985367040
2	Dr.Akanksha Mishra	Assoc.Prof-EEE	Vice-President	9704559874
3	Mrs.K.Vahini	Asst.Prof-MECH	Secretary	9491992944
4	Mrs.P.Rajya Lakshmi	Advocate	Adviser	9290442757
5	Dr.P.Vijaya Bharathi	Assoc.Prof-CSE	Dept.Coordinator	9849819662
6	Mrs.T.Sandhya Kumari	Assoc.Prof-ECE	Dept.Coordinator	9949873848
7	Ms.B. M. Pushpa Latha	Assoc.Prof-EEE	Dept.Coordinator	9640782871
8	Mrs.S.Kalyani	Assoc. Prof-IT	Dept.Coordinator	9491162578
9	Mrs.K.Vahini	Asst.Prof- MECH	Dept.Coordinator	9491992944
10	Mrs.M.Satyavathi	Asst.Prof-MBA	Dept.Coordinator	9032991981
11	Dr.K.P.Suhasini	Assoc.Prof-BS&H	Dept.Coordinator	9885218954

#### **Mechanism for complaints on Sexual Harassment:**

A written complaint is required to be taken from the aggrieved person, necessary action to be taken, preferably to settle the matter through counselling and conciliation as soon as possible. In case the matter is not so sorted, inquiry to be conducted and matter to be sorted out within 10 days from the date of complaint. The members to be vigilant all the time and ensure that there is no such incident taking place in campus by creating awareness and having an open dialogue with all the students. Following are the Guidelines to be strictly followed

- The complainant will have to submit a written and signed complaint addressed to the Presiding officer of the Cell
- The students/staff can give a complaint through e-mail to [viewfeminawing@gmail.com](mailto:viewfeminawing@gmail.com)
- The counselor will call the complainant for a personal meeting, usually within a week from the submission of the written complaint
- The members of the Cell will discuss the complaint
- If the case falls outside the purview of the Cell, the complainant will be informed to Director
- If the case comes under the purview of the Cell, an enquiry committee will be set up

- The Committee will submit a report and recommend the nature of action to be taken at the earliest by Director
- If any legal action is required with the help of advocate member of the cell complaint is forwarded to police.

#### 10.1.4 DELEGATION OF FINANCIAL POWERS (10)

*(Institution should explicitly mention financial powers delegated to the Principal, Heads of Departments and relevant in-charges. Demonstrate the utilization of financial powers for each year of the assessment years)*

Institution should explicitly mention financial powers delegated to the Principal, Dean-Admin and Heads of Departments. Demonstrate the utilization of financial powers for each year of the assessment years

#### **Finance Committee:**

Finance Committee of the institution shall be the key body which will monitor and manage the financial sustainability of the institution. Finance committee is an advisory body to the Governing Body and reports/recommends from time to time regarding the matters related to budget estimates, income from fees etc. The term of the members of the finance committee will be for the two years and shall be re-constituted by the Principal.

**Table 10.14** Composition of Finance Committee

Sl. No	Name of Committee Member	Designation	Position
1.	Dr.J.Sudhakar	Principal	Chairman
2.	Prof.A.Sesha Rao	Academic Director	Member
3.	Mr.N.Srikanth	Executive Director	Member
4.	Dr.P.S.Ravindra	Dean-Admin	Member
5.	Mr.Suresh	Head of Accounts-VIEW	Member
6.	Mr.I.Rama Rao	External Auditor	Member
7.	Mr.Suresh	Statutory Auditor, LES	Member

The functions of the finance Committee are as follows:

1. To monitor and manage the budget estimation relating to the Income from fees collected etc.,
2. To manage the annual budgets and utilization reports submitted by the individual departments
3. Audited account for the above and Department level Financial Delegation

**Financial powers delegated to the Principal, Dean-Admin, Heads of Departments and relevant in-charges**

1. The Principal of the institution have complete financial powers pertaining to the college.
2. The Principal acts as the joint signatory of all the college financial accounts.
3. The Principal is empowered to sanction the requisite amount of money after getting approval from the Finance committee.
4. Dean of Administration can spend up to Rs. 10,000. In addition to it all pre approved recurring expenses can be cleared by DoA.
5. The HODs are delegated to use Rs 5,000 contingency in emergency purchases and repairs for the smooth running of the department.
6. Annual Budget for the institution is prepared by the Finance committee at the beginning of the year, by considering the possible income and expenditure involved. It is approved in the GB meeting.
7. The HOD is the in-charge for the equipments and stores attached to the department concerned. HOD prepares the lists of items of stores to be replenished at periodical intervals and arrange for the purchase of stores.
8. As stated in table 10.9 above, Institution purchase committee carefully scrutinizes and allocates required funds to each department after acquiring proposals from all the departments regarding their requirements for the academic year.
9. The Purchase Committee will go through the quotes and recommendations of the user and advise the concerned HOD. The concerned HOD will forward the recommendations of the Purchase Committee along with remarks to the Principal.
10. The Dean-Admin will scrutinize the comparative statement and give his remarks and send the file back to the concerned department. The HOD shall take copies of the comparative statement and the quotations and send the originals to Purchase Department for further action.
11. The Dean-Admin will place order after taking approval of Principal & Executive Director.
12. Vouchers support all transactions. All bills/invoices/vouchers are scrutinized by account staff and approved by the Dean-Admin and Principal.
13. The bill payments are passed after ensuring proper verification/evaluation of the items. Only duly authorized persons to operate the transactions through the bank.

14. Audited financial statements including Income and Expenditure Account, Balance Sheet etc. are prepared by qualified auditors and submitted to banks and other regulatory agencies.

**Utilization of financial powers for each of the assessment years:**

The following table demonstrates the Financial Utilizations by Principal, Dean Admin, and HODs for the last 3 assessment year i.e.2017-18, 2018-19 and 2019-20.

**Table 10.15** Financial Utilizations by Principal, Dean Admin, and HOD

	<b>HOD</b>	<b>Dean-Admin</b>	<b>Principal</b>
<b>CAY (2019-20)</b>	Utilization: 1. Printers Cartridge Refilling cost 2. Hospitality expenses like tea coffee, Lunch, Snacks for external laboratory examiners and for panel members in Project Viva Voice. 3. Postage and Cell charges for parents and for official Correspondence. 4. Maintenance and Miscellaneous expenses.	Utilization: 1. Institution buildings. 2. Approval for rent, rates and taxes 3. Insurance and others, if any 4. Postage, Telephone charges 5. Electricity charges 6. Printing and Stationary 7. College maintenance 8. Games & expenses 9. Travelling & conveyance 10. Transportation Charges	Utilization: 1. Advertisement & Publicity expenditure 2. Purchase of books and periodicals for library 3. Approval of cost of functions & celebrations 4. Payment of affiliation fees etc. 5. Purchase of A.C. machinery. 6. Purchase of building construction material 7. Purchase of 300 computers and peripherals 8. Purchase of machinery 9. Purchase of vehicles 10. Approvals for research projects related expenditure 11. Purchase of online journals for the digital library 12. Approval for regular salaries.
<b>CAY m1 (2018-19)</b>	Utilization: 1. Printers Cartridge Refilling cost 2. Hospitality expenses like tea/coffee, Lunch, Snacks for External Laboratory Examiners and for Panel Members in Project Viva Voice. 3. Postage and Call charges for Parents and for official correspondence. 4. Maintenance and Miscellaneous expenses.	Utilization: 1. Institution buildings. 2. Approval for rent, rates and taxes 3. Insurance and others, if any 4. Postage, Telephone charges 5. Electricity charges 6. Printing and Stationary 7. Garden maintenance 8. Repair & maintenance 9. College maintenance 10. Games & expenses	Utilization: 1. Advertisement & Publicity expenditure 2. Purchase of books and periodicals for library 3. Approval of cost of functions & celebrations 4. Payment of affiliation fees etc. 5. Purchase of A.C. machinery. 6. Purchase of building construction material 7. Purchase of 250 computers and

			peripherals 8. Purchase of electrical equipment 9. Purchase of furniture & fixtures for the class rooms and labs 10. Purchase of lab equipment 11. Purchase of office equipment 12. Purchase of machinery
<b>CAY m2 (2017-18)</b>	Utilization: 1. Printers Cartridge Refilling cost 2. Hospitality expenses like tea/coffee, Lunch, Snacks for External Laboratory Examiners and for Panel Members in Project Viva Voice. 3. Postage and Call charges for Parents and for official correspondence. 4. Maintenance and Miscellaneous expenses.	Utilization: 1. Institution buildings. 2. Approval for rent, rates and taxes 3. Insurance and others, if any 4. Postage, Telephone charges 5. Electricity charges 6. Printing and Stationary 7. Garden maintenance 8. Repair & maintenance 9. College maintenance	Utilization: 1. Advertisement & Publicity expenditure 2. Purchase of books and periodicals for library 3. Approval of cost of functions & celebrations 4. Payment of affiliation fees etc. 5. Purchase of A.C. machinery. 6. Purchase of building construction material 7. Purchase of computers and peripherals 8. Purchase of electrical equipment

**10.1.5. TRANSPARENCY AND AVAILABILITY OF CORRECT/UNAMBIGUOUS INFORMATION IN PUBLIC DOMAIN (5)**

*(Information on policies, rules, processes and dissemination of this information to stakeholders is to be made available on the web site)*

Effective governance, leadership and management are evident from its long history of disturbance-free performance in imparting quality technical education. It is mainly because of the highly responsive compact management which gets constant inputs and feedback from the administrative and academic heads, experts, alumni, faculty, students, and supporting staff.

**Information on the policies, rules, processes:**

1. The Institution has its own HR policies, Service Rules and Processes that are disseminated to the stake holders through the institutional website <http://view.edu.in/admsrpp.php>
2. The Vision, Mission and objectives of the institution are displayed in the College campus at Notice boards, Department Notice boards, Canteen, Hostel building, library and other prime locations to engross the attention of all students, faculty, staff and visitors. The same is also communicated through college website and Newsletter to all the stakeholders for wide publicity.
3. The web-site ([www.view.edu.in](http://www.view.edu.in)) of the institution publishes the information pertaining to the institute and programs for circulation to stakeholders and the general public.
4. Annual audited reports are published and available to the stakeholders and public in the college website.
5. The student admissions are transparently filled through a separate single window system of the government of Andhra Pradesh. Admission to UG is done through APEAMCET and admission to PG programs is done through APPGCET & APICET.

**Dissemination of the information about student, faculty and staff**

1. Information such as Internal marks scored by students, Shortage of attendance, if any, examination schedule, availability of scholarships, opportunities for students etc. are promptly displayed on Notice Boards.
2. Criteria for student scholarships, faculty awards etc. are informed well in advance so that equal opportunity is given to all individuals concerned.
3. At the beginning of every academic year the college brings out a broucher, which contain all the information like departments profile, faculty details, students result, achievements, placement records and other information required by a student to carry out her studies in the college.



4. Notices or Circulars concerned to students are circulated in the class rooms and displayed on the notice boards.
5. Circulars or notifications from the university regarding academic matters are sent to all the Heads of the departments and circulated among the faculty members and students.
6. The institution is transparent in providing timely information to its staff enabling better connectivity and proficiency in day-to-day academic and administrative works.
7. An SMS alert is sent to parents/guardians if their ward fails to attend the classes.
8. Regularly we intimate to parents/ guardian regarding the attendance and academic progress of their wards through registered post with acknowledgement.

**10.2. Budget Allocation, Utilization, and Public Accounting at Institute level (30)**

*(Summary of current financial year's budget and actual expenditure incurred (for the institution exclusively) in the three previous financial years)*

Total Income at Institute level: for CFY, CFY<sub>m1</sub>, CFY<sub>m2</sub> and CFY<sub>m3</sub>

CFY: Current Financial Year,

CFY<sub>m1</sub>: (Current Financial Year minus 1),

CFY<sub>m2</sub>: (Current Financial Year minus 2) and

CFY<sub>m3</sub>: (Current Financial Year minus 3)

**Table 1 CFY 2019-2020**

<b>Total Income:</b>				<b>Actual Expenditure (till...)</b>			<b>Total No. of students:</b>
<b>100,408,508</b>				<b>152,832,520</b>			<b>2368</b>
<b>Fee</b>	<b>Govt.</b>	<b>Grant(s)</b>	<b>Other Sources (specify)</b>	<b>Recurring including Salaries</b>	<b>Non recurring</b>	<b>Special Projects/ Any other, specify</b>	<b>Expenditure per student:</b>
99,535,825	0	300000	572,683	107,401,404	45,431,116	0	64541

**Table 2 CFYm1 2018-2019**

<b>Total Income:</b>				<b>Actual Expenditure (till...)</b>			<b>Total No. of students:</b>
<b>100,050,510</b>				<b>144,356,363</b>			<b>2455</b>
<b>Fee</b>	<b>Govt.</b>	<b>Grant(s)</b>	<b>Other Sources (specify)</b>	<b>Recurring including Salaries</b>	<b>Non recurring</b>	<b>Special Projects/ Any other, specify</b>	<b>Expenditure per student:</b>
99,285,460	0	400,000	365,050	114,019,867	30,336,496	0	58801

**Table 3 CFYm2 2017-2018**

<b>Total Income:</b>				<b>Actual Expenditure (till...)</b>			<b>Total No. of students:</b>
<b>93,429,180</b>				<b>127,738,841</b>			<b>2357</b>
<b>Fee</b>	<b>Govt.</b>	<b>Grant(s)</b>	<b>Other Sources (specify)</b>	<b>Recurring including Salaries</b>	<b>Non recurring</b>	<b>Special Projects/ Any other, specify</b>	<b>Expenditure per student:</b>
91,145,210	0	1,674,360	609,610	100,792,728	26,946,113	0	54196

**Table 4 CFYm3 2016-2017**

<b>Total Income:</b>			86,558,949	<b>Actual Expenditure (till...)</b>			110,617,386	<b>Total No. of students:</b> 2171
<b>Fee</b>	<b>Govt.</b>	<b>Grant(s)</b>	<b>Other Sources (specify)</b>	<b>Recurring including Salaries</b>	<b>Non recurring</b>	<b>Special Projects/ Any other, specify</b>	<b>Expenditure per student:</b>	
84,161,866	0	0	2,397,083	89,567,189	21,050,197	0	50,952	

**Table 5** Summary of budget allocation and expenses

<b>Item</b>	<b>Budgeted in 2019-20</b>	<b>Actual Expenses in 2019-20</b>	<b>Budgeted in 2018-19</b>	<b>Actual Expenses in 2018-19</b>	<b>Budgeted in 2017-18</b>	<b>Actual Expenses in 2017-18</b>	<b>Budgeted in 2016-17</b>	<b>Actual Expenses in 2016-17</b>
Infrastructure Built-Up	28,000,000	27,061,417	19,840,000	19,820,565	23,500,000	22,996,824	18,000,000	17,570,228
Library	166,500	164,809	425,000	395,030	800,000	714,159	825,000	776,399
Laboratory Equipment	1,200,000	1,078,060	3,000,000	2,804,536	300,000	273,600	370,000	360,257
Laboratory Consumable	48,000	46,928	120,000	113,839	80,000	73,406	120,000	105,948
Teaching and non-Teaching staff salary	62,000,000	65,524,922	70,000,000	71,416,461	58,501,456	61,527,649	50,000,000	52,233,443
Maintenance and Spares	7,100,000	6,990,615	3,500,000	3,380,388	2,500,000	2,440,988	1,700,000	1,583,479
R&D	3,250,000	3,144,921	2,700,000	2,557,792	3,000,000	2,664,954	2,100,000	2,078,543
Training and Travel	200,000	193,352	180,000	163,357	288,000	285,027	500,000	467,375
Miscellaneous Expense	14,250,000	14,203,173	5,200,000	5,010,987	600,000	575,274	425,000	416,038
Admin & Finance costs	36,000,000	34,424,324	40,000,000	38,693,408	36,250,000	36,186,960	36,000,000	35,025,677
<b>Total</b>	<b>152,214,500</b>	<b>152,832,520</b>	<b>144,965,000</b>	<b>144,356,363</b>	<b>125,819,456</b>	<b>127,738,841</b>	<b>110,040,000</b>	<b>110,617,386</b>

**10.2.1. ADEQUACY OF BUDGET ALLOCATION (10)**

*(The institution needs to justify that the budget allocated during assessment years was adequate)*

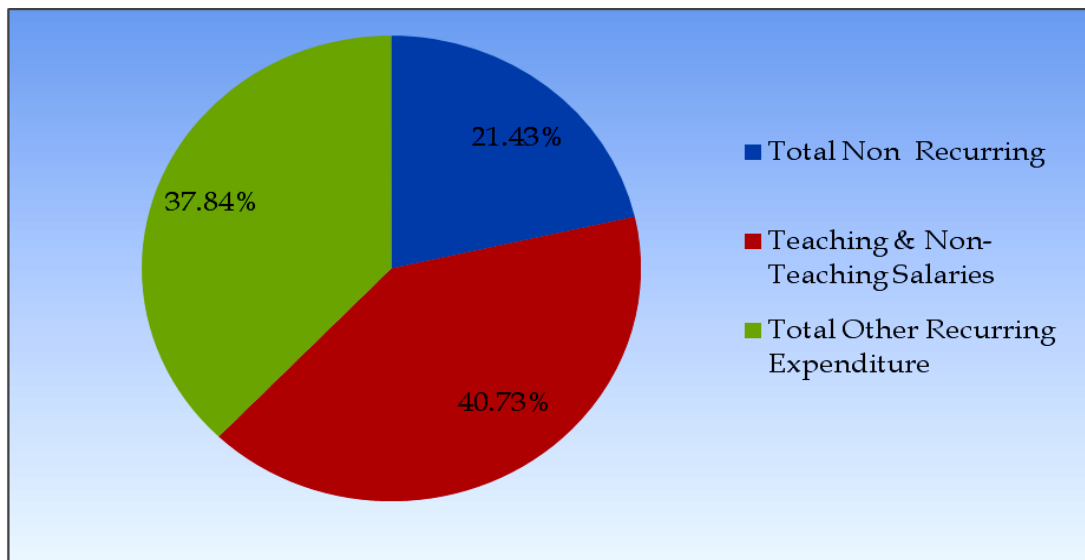
The yearly budget is prepared according to the needs & requirements of the departments taking into consideration of annual intake of students, laboratory & infrastructure developments. The components of budget include salaries of all staff, purchase of equipment's, establishment of new labs, maintenance of labs, research and development, training and placement, student's activities and sports, purchase of books etc.

Formal budget estimates will be prepared by each department and will be reviewed in HODs meeting with the Principal and Dean of Administration. After deliberations, formal budget made altered in departments and forwarded to Dean of Administration for preparing the final budget at the college level. The final budget is sent to Management through the Principal for approval and sanction.

The Management, who in consultation with the Governing Body and after due diligence, sanction almost 100% of budget which was proposed by the institute to fulfil the requirements of various departments. The budget allocation and utilization for the last three years are adequate. The budget allocation to the Institute for the last 4 years are presented in the below tables.

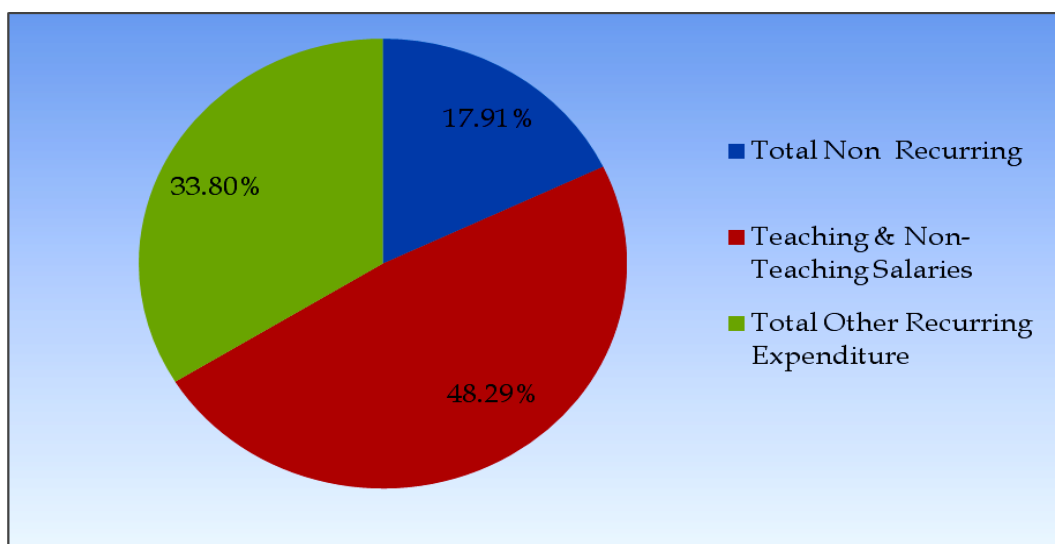
Table 1 CFY 2019-2020

Item	Budgeted	Percentage of Allocation
Infrastructure Built-up	28,000,000	18.40
Library	166,500	0.11
Laboratory Equipment	1,200,000	0.79
Research & Development	3,250,000	2.14
<b>Total Non-Recurring</b>	<b>32,616,500</b>	<b>21.43</b>
<b>Teaching &amp; Non-Teaching Salaries</b>	<b>62,000,000</b>	<b>40.73</b>
Maintenance and Spares	7,100,000	4.66
Laboratory Consumables	48,000	0.03
Training & Travel	200,000	0.13
Miscellaneous Exp.	14,250,000	9.36
Administration and Finance Cost	36,000,000	23.65
Total Other Recurring Expenditure	<b>57,598,000</b>	<b>37.84</b>
<b>TOTAL</b>	<b>152,214,500</b>	<b>100.00</b>



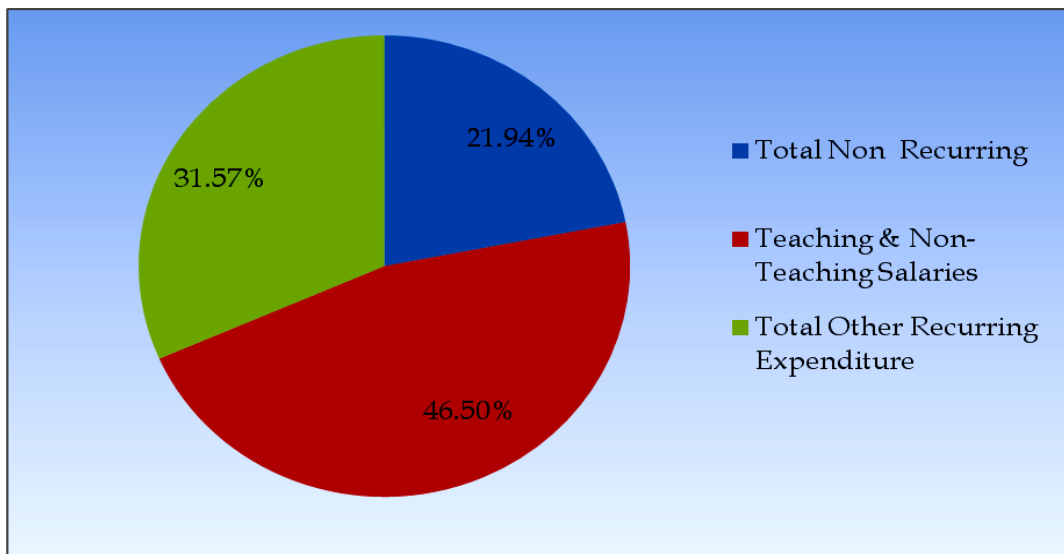
**Table 2 CFYm1 2018-2019**

<b>Item</b>	<b>Budgeted</b>	<b>Percentage of Allocation</b>
Infrastructure Built-up	19,840,000	13.69
Library	425,000	0.29
Laboratory Equipment	3,000,000	2.07
Research & Development	2,700,000	1.86
<b>Total Non-Recurring</b>	<b>25,965,000</b>	<b>17.91</b>
<b>Teaching &amp; Non-Teaching Salaries</b>	<b>70,000,000</b>	<b>48.29</b>
Maintenance and Spares	3,500,000	2.41
Laboratory Consumables	120,000	0.08
Training & Travel	180,000	0.12
Miscellaneous Exp.	5,200,000	3.59
Administration and Finance Cost	40,000,000	27.59
Total Other Recurring Expenditure	<b>49,000,000</b>	<b>33.80</b>
<b>TOTAL</b>	<b>144,965,000</b>	<b>100.00</b>



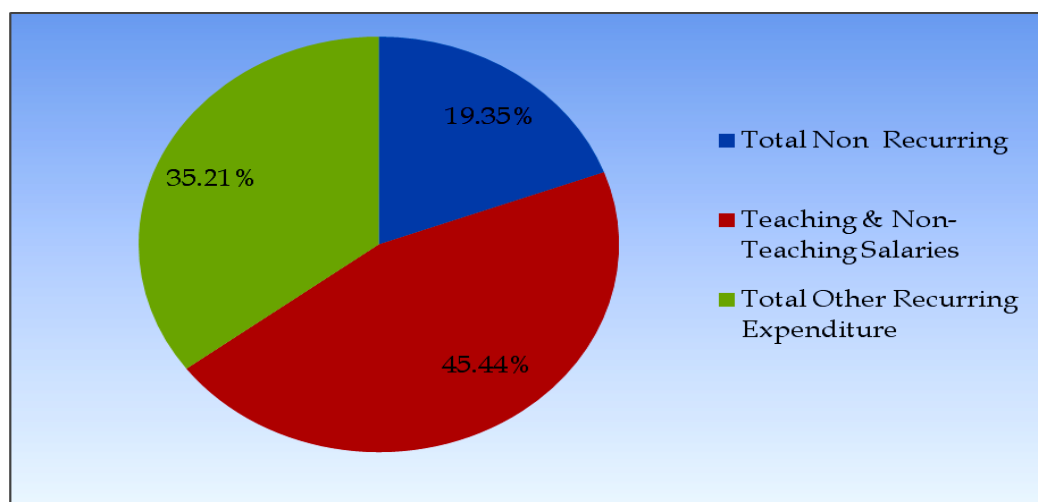
**Table 3 CFYm2 2017-2018**

<b>Item</b>	<b>Budgeted</b>	<b>Percentage of Allocation</b>
Infrastructure Built-up	23500000	18.68
Library	800000	0.64
Laboratory Equipment	300000	0.24
Research & Development	3000000	2.38
<b>Total Non-Recurring</b>	<b>27,600,000</b>	<b>21.94</b>
<b>Teaching &amp; Non-Teaching Salaries</b>	58501456	46.50
Maintenance and Spares	2500000	1.99
Laboratory Consumables	80000	0.06
Training & Travel	288000	0.23
Miscellaneous Exp.	600000	0.48
Administration and Finance Cost	36250000	28.81
Total Other Recurring Expenditure	<b>39,718,000</b>	<b>31.57</b>
<b>TOTAL</b>	<b>125819456</b>	<b>100.00</b>



**Table 4 CFYm3 2016-2017**

Item	Budgeted	Percentage of Allocation
Infrastructure Built-up	18000000	16.36
Library	825000	0.75
Laboratory Equipment	370000	0.34
Research & Development	2100000	1.91
<b>Total Non-Recurring</b>	<b>21,295,000</b>	<b>19.35</b>
<b>Teaching &amp; Non-Teaching Salaries</b>	<b>50000000</b>	<b>45.44</b>
Maintenance and Spares	1700000	1.54
Laboratory Consumables	120000	0.11
Training & Travel	500000	0.45
Miscellaneous Exp.	425000	0.39
Administration and Finance Cost	36000000	32.72
Total Other Recurring Expenditure	<b>38,745,000</b>	<b>35.21</b>
<b>TOTAL</b>	<b>110040000</b>	<b>100.00</b>

**Table 5 Summary of Budget Allocation**

Head of Expenditure	2019-20	2018-19	2017-18	2016-17
Teaching and Non-Teaching Salaries	40.73%	48.29%	46.5%	45.44%
Administration and Finance Cost	23.65%	27.59%	28.81%	32.72%
Other recurring Expenditure	14.19%	6.21%	2.75%	2.49%
Non-recurring Expenditure	21.43%	17.91%	21.94%	19.35%
<b>Total Expenditure</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
<b>Total Expenditure per student</b>	<b>64,541</b>	<b>58,801</b>	<b>54,196</b>	<b>50,952</b>



**Analysis on Adequacy:**

- The total budget allocation and utilization have followed established norms in terms of contribution to salaries, administrative expenditure and Non-Recurring expenditure to the total expenditure.
- Total budget of the institution has increased by 38% in the past 4 years which is in lines with the increase in student strength
- Total salary expenditure is at a healthy range of 40.73% to 48.29% of the total recurring expenditure in the assessment years
- Total administrative and finance cost is within a range of 23.65% to 32.72% which is as per the accepted standards and it also indicates that the institute has been growing.
- Total nonrecurring expenditure is within a range of 17.91% to 21.94% of the total expenditure of the institution showcasing the commitment towards growth and preparations for the future.
- The average expenditure per student has been growing consistently at an average of 8.21% over the past 4 years which indicating a healthy growth and development in all parameters.

**10.2.2. UTILIZATION OF ALLOCATED FUNDS (15)**

*(The institution needs to state how the budget was utilized during assessment years)*

The budget sanctioned by the Management of the Institution was effectively utilized as can be seen from the table above. The budgets have been approved after detailed inputs have been taken from all the stakeholders. The fact that the Institution has been consistently receiving zero deficiency report since the inception shows effective utilization of the funds allocated as part of the budgets. The detail budget utilization for the four years summarized below.

**Table 1 CFY 2019-2020**

<b>Item</b>	<b>Budgeted</b>	<b>Utilization</b>	<b>% of Utilization</b>
Infrastructure Built-up	28,000,000	27,061,417	96.65
Library	166,500	164,809	98.98
Laboratory Equipment	1,200,000	1,078,060	89.84
Research & Development	3,250,000	3,144,921	96.77
<b>Total Non-Recurring</b>	<b>32,616,500</b>	<b>31,449,206</b>	<b>96.42</b>
<b>Teaching &amp; Non-Teaching Salaries</b>	<b>62,000,000</b>	<b>65,524,922</b>	<b>105.69</b>
Maintenance and Spares	7,100,000	6,990,615	98.46
Laboratory Consumables	48,000	46,928	97.77
Training & Travel	200,000	193,352	96.68
Miscellaneous Exp.	14,250,000	14,203,173	99.67

Administration and Finance Cost	36,000,000	34,424,324	95.62
Total Other Recurring Expenditure	<b>50,498,000</b>	<b>48,867,777</b>	<b>96.77</b>
<b>TOTAL</b>	<b>152,214,500</b>	<b>152,832,520</b>	<b>100.41</b>

Table 2 CFYm1 2018-2019

Item	Budgeted	Utilization	% of Utilization
Infrastructure Built-up	19,840,000	19,820,565	99.90
Library	425,000	395,030	92.95
Laboratory Equipment	3,000,000	2,804,536	93.48
Research & Development	2,700,000	2,557,792	94.73
<b>Total Non-Recurring</b>	<b>25,965,000</b>	<b>25,577,923</b>	<b>98.51</b>
<b>Teaching &amp; Non-Teaching Salaries</b>	70,000,000	71,416,461	102.02
Maintenance and Spares	3,500,000	3,380,388	96.58
Laboratory Consumables	120,000	113,839	94.87
Training & Travel	180,000	163,357	90.75
Miscellaneous Exp.	5,200,000	5,010,987	96.37
Administration and Finance Cost	40,000,000	38,693,408	96.73
Total Other Recurring Expenditure	<b>45,500,000</b>	<b>43,981,591</b>	<b>96.66</b>
<b>TOTAL</b>	<b>144,965,000</b>	<b>144,356,363</b>	<b>99.58</b>

Table 3 CFYm2 2017-2018

Item	Budgeted	Utilization	% of Utilization
Infrastructure Built-up	23,500,000	22,996,824	97.86
Library	800,000	714,159	89.27
Laboratory Equipment	300,000	273,600	91.20
Research & Development	3,000,000	2,664,954	88.83
<b>Total Non-Recurring</b>	<b>27,600,000</b>	<b>26,649,537</b>	<b>96.56</b>
<b>Teaching &amp; Non-Teaching Salaries</b>	58,501,456	61,527,649	105.17
Maintenance and Spares	2,500,000	2,440,988	97.64
Laboratory Consumables	80,000	73,406	91.76
Training & Travel	288,000	285,027	98.97
Miscellaneous Exp.	600,000	575,274	95.88
Administration and Finance Cost	36,250,000	36,186,960	99.83
Total Other Recurring Expenditure	<b>37,218,000</b>	<b>37,120,667</b>	<b>99.74</b>
<b>TOTAL</b>	<b>125,819,456</b>	<b>127,738,841</b>	<b>101.53</b>

Table 4 CFYm3 2016-2017

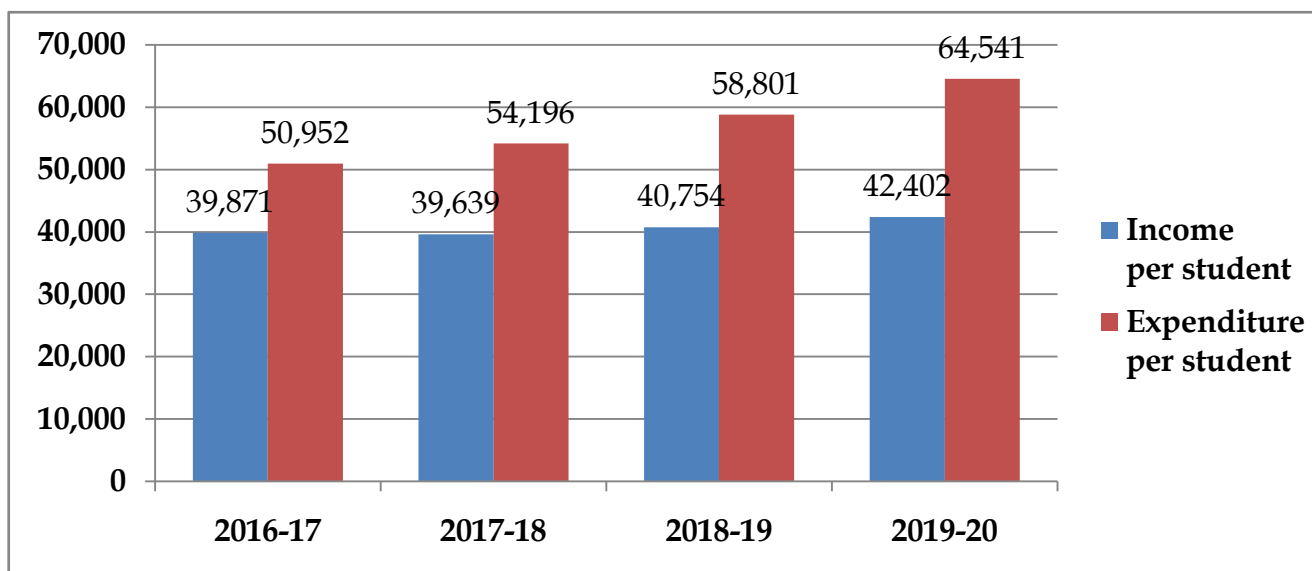
Item	Budgeted	Utilization	% of Utilization
Infrastructure Built-up	18,000,000	17,570,228	97.61
Library	825,000	776,399	94.11
Laboratory Equipment	370,000	360,257	97.37
Research & Development	2,100,000	2,078,543	98.98

<b>Total Non-Recurring</b>	<b>21,295,000</b>	<b>20,785,426</b>	<b>97.61</b>
<b>Teaching &amp; Non-Teaching Salaries</b>	50,000,000	52,233,443	104.47
Maintenance and Spares	1,700,000	1,583,479	93.15
Laboratory Consumables	120,000	105,948	88.29
Training & Travel	500,000	467,375	93.48
Miscellaneous Exp.	425,000	416,038	97.89
Administration and Finance Cost	36,000,000	35,025,677	97.29
Total Other Recurring Expenditure	<b>37,045,000</b>	<b>36,015,038</b>	<b>97.22</b>
<b>TOTAL</b>	110,040,000	110,617,386	100.52

<b>Financial Year</b>	<b>Total Income</b>	<b>Total Expenditure</b>	<b>Adjustment from Other Units</b>	<b>Income per student</b>	<b>Expenditure per student</b>
2019-20	100,408,508	152,832,520	52,424,012	39,871	50,952
2018-19	100,050,510	144,356,363	44,305,853	39,639	54,196
2017-18	93,429,180	127,738,841	34,309,661	40,754	58,801
2016-17	86,558,949	110,617,386	24,058,437	42,402	64,541

**Table 5 Income and Expenditure**

<b>Financial Year</b>	<b>Total Income</b>	<b>Total Expenditure</b>	<b>Adjustment from Other Units</b>	<b>Income per student</b>	<b>Expenditure per student</b>
2019-20	100,408,508	152,832,520	52,424,012	39,871	50,952
2018-19	100,050,510	144,356,363	44,305,853	39,639	54,196
2017-18	93,429,180	127,738,841	34,309,661	40,754	58,801
2016-17	86,558,949	110,617,386	24,058,437	42,402	64,541



**Utilization:**

- Total utilization of allocated funds to majority elements has been at a healthy range of 92% to 106% of the budgeted expenditure in the past 4 years
- Salaries at the institution have increased by 31.04% from 2016-17 to 2019-20 indicating an average growth of 10% per annum indicating a healthy improvement in staff numbers and also healthy increments for the staff members.
- An appropriate utilization of allocated fund to Infrastructure Built-up has been taken place in all the assessment Years, which indicates the institute is able to accrue a significant portion of the nonrecurring expenditure from internal accruals indicating a healthy growth.
- Total nonrecurring expenditure has increased from 2.07 crores to 3.14 crores due to the focus of the institution on infrastructure improvement and establishing state of the facilities
- The expenditure over income of the institute stand for the cost incurred for infrastructure development which is adjusted from the other units of Lavu Educational society which indicates the commitment of the institution towards its vision to provide competent women technical power keeping the demands of the industry along with providing a robust economic boost to the family in the form of a technically educated and trained woman professional.

**10.2.3. AVAILABILITY OF THE AUDITED STATEMENTS ON THE INSTITUTE'S WEBSITE (5)**

*(The institution needs to make audited statements available on its website)*

A team of Auditors audits the account of the Institute including Income and Expenditure Account, Balance Sheet etc. A copy of the report is submitted to the Institute. This report is placed in the institute's website every year immediately after receiving from the auditors.

The audited reports are available on the college website at <http://view.edu.in/admar.php>

**Availability of The Audited Statements on the Institute's Website:**

<b>Year</b>	<b>Available (Yes/No)</b>	<b>Website link</b>
2019-20	YES	<a href="http://view.edu.in/admar.php">http://view.edu.in/admar.php</a>
2018-19	YES	<a href="http://view.edu.in/admar.php">http://view.edu.in/admar.php</a>
2017-18	YES	<a href="http://view.edu.in/admar.php">http://view.edu.in/admar.php</a>
2016-17	YES	<a href="http://view.edu.in/admar.php">http://view.edu.in/admar.php</a>

**10.3 Program Specific Budget Allocation, Utilization (30)**

Total Income at Institute level: For CFY,CFYm1,CFYm2 & CFYm3

CFY: (Current Financial Year),

CFYm1 : (Current Financial Year minus 1),

CFYm2 : (Current Financial Year minus 2) and

CFYm3 : (Current Financial Year minus 3

**Table 1 :: CFY 2019-20**

Total Budget:		37,841,400	Actual expenditure:		37,691,804	Total No. of students:	584
Non-Recurring	Recurring		Non-Recurring	Recurring		Expenditure per student	
11,711,400	26,130,000		11,204,295	26,487,508		64541	

**Table 2 :: CFYm1 2018-19**

Total Budget:		35,560,000	Actual expenditure:		35,574,582	Total No. of students:	605
Non-Recurring	Recurring		Non-Recurring	Recurring		Expenditure per student	
7,556,000	28,004,000		7,476,000	28,098,582		58801	

**Table 3 :: CFYm2 2017-18**

Total Budget:		31,448,622	Actual expenditure:		31,812,770	Total No. of students:	587
Non-Recurring	Recurring		Non-Recurring	Recurring		Expenditure per student	
6,793,500	24,655,122		6,710,805	25,101,965		54196	

**Table 4 :: CFYm3 2016-17**

Total Budget: 28,019,000		Actual expenditure: 28,125,655		Total No. of students:	552
Non-Recurring	Recurring	Non-Recurring	Recurring	Expenditure per student	
5,484,000	22,535,000	5,352,238	22,773,417	50952	

**Table 5 :: Summary of allocation and expenses**

	<b>Budgeted in 2019-20</b>	<b>Actual Expenses in 2019-20</b>	<b>Budgeted in 2018-19</b>	<b>Actual Expenses in 2018-19</b>	<b>Budgeted in 2017-18</b>	<b>Actual Expenses in 2017-18</b>	<b>Budgeted in 2016-17</b>	<b>Actual Expenses in 2016-17</b>
Laboratory Equipment	280,000	265,873	700,000	691,138	75,000	68,139	94,000	91,599
Software	842,000	841,527	678,000	675,386	21,733	20,046	15,000	14,956
Laboratory Consumable	12,000	11,573	30,000	28,054	22,000	18,281	30,000	26,938
Maintenance and Spares	1,750,000	1,724,037	850,000	833,049	620,000	607,917	420,000	402,616
R&D	800,000	775,605	650,000	630,332	675,000	663,694	530,000	528,492
Training and Travel	53,000	47,685	45,000	40,257	72,000	70,985	125,000	118,835
Miscellaneous Expenses	70,100	70,056	63,750	61,744	30,000	28,654	22,000	21,156
<b>Total</b>	<b>3,807,100</b>	<b>3,736,357</b>	<b>3,016,750</b>	<b>2,959,960</b>	<b>1,515,733</b>	<b>1,477,716</b>	<b>1,236,000</b>	<b>1,204,593</b>



**10.3.1. ADEQUACY OF BUDGET ALLOCATION (10)**

*(Program needs to justify that the budget allocated over the assessment years was adequate for the program)*

Every year, the Departmental Core Committee chaired by HoD will work in coordination with the Principal's office to review the budget needed for smooth operations of the Department. The budgets are proposed for the next academic year. They are proposed taking into consideration the establishment of new labs, purchase of equipment's, salaries of faculties, lab maintenance activities, conducting Workshops, Seminars, Research, Training & Travel and all other Miscellaneous expenses. The HoD presents the budget proposal in HoDs meeting and finalized budget forwarded to the Dean-Admin to prepare the final budget of the institution. Management members, who in consultation with the Governing Body and after due diligence, sanction the budget for the next academic year. Allocations are made as per the availability of funds, of the management. The Department monitors the expenses so that the necessities are met without exceeding the allocated budget. The budget allocation to the department for the last 4 years are presented in the below tables.

**Table 1 :: CFY 2019-20**

<b>Items</b>	<b>Budgeted</b>	<b>% of Allocation</b>
Laboratory Equipment	280,000	7.35
Software	842,000	22.12
Laboratory Consumable	12,000	0.32
Maintenance and Spares	1,750,000	45.97
R&D	800,000	21.01
Training and Travel	53,000	1.39
Miscellaneous Expense	70,100	1.84
<b>Total Expenditure</b>	<b>3,807,100</b>	<b>100.00</b>

**Table 2 :: CFYm1 2018-2019**

<b>Items</b>	<b>Budgeted</b>	<b>% of Allocation</b>
Laboratory Equipment	700,000	23.20
Software	678,000	22.47
Laboratory Consumable	30,000	0.99
Maintenance and Spares	850,000	28.18

R&D	650,000	21.55
Training and Travel	45,000	1.49
Miscellaneous Expense	63,750	2.11
<b>Total Expenditure</b>	<b>3,016,750</b>	<b>100.00</b>

**Table 3 :: CFYm2 2017-2018**

<b>Items</b>	<b>Budgeted</b>	<b>% of Allocation</b>
Laboratory Equipment	75,000	4.95
Software	21,733	1.43
Laboratory Consumable	22,000	1.45
Maintenance and Spares	620,000	40.90
R&D	675,000	44.53
Training and Travel	72,000	4.75
Miscellaneous Expense	30,000	1.98
<b>Total Expenditure</b>	<b>1,515,733</b>	<b>100.00</b>

**Table 4 :: CFYm3 2016-2017**

<b>Items</b>	<b>Budgeted</b>	<b>Percentage of Allocation</b>
Laboratory Equipment	94,000	7.61
Software	15,000	1.21
Laboratory Consumable	30,000	2.43
Maintenance and Spares	420,000	33.98
R&D	530,000	42.88
Training and Travel	125,000	10.11
Miscellaneous Expense	22,000	1.78
<b>Total Expenditure</b>	<b>1,236,000</b>	<b>100.00</b>

**Analysis on Adequacy:**

- The total budget allocated as per the requirements of the Department to meet the established norms of statutory bodies.
- Total budget of the department has increased in the past 4 years which is in lines with the increase in student strength.

- In order to develop effective teaching-learning process among the students and staff, allocated majority of department budget towards lab equipment and software during the last two years.
- All the labs are well established and maintain the consistency of labs, allocated major budget for maintenance and spares.
- To develop employability as well as entrepreneurship skills including **Product Development Training** and also promote more research activities among the students and staff, faculty members are motivated to participate workshops and FDPs, so that spent more budget for R&D.

### 10.3.2 UTILIZATION OF ALLOCATED FUNDS (20)

*(Program needs to state how the budget was utilized during the last three assessment years)*

Funds provided to the departments are properly utilized to develop the infrastructure of the department to achieve better programme outcomes. The process implemented above helps in ensuring meticulous planning is done before the start of the semester. Zero deficiency has been noticed by AICTE and JNTUK after repeated inspections of our facilities. This shows effective implementation of the budgets. The budget utilization of allocated funds to the department for the last 4 years are presented in the below tables.

**Table 1 :: CFY 2019-20**

<b>Item</b>	<b>Budgeted</b>	<b>Utilization</b>	
Laboratory Equipment	280,000	265,873	94.95
Software	842,000	841,527	99.94
Laboratory Consumable	12,000	11,573	96.45
Maintenance and Spares	1,750,000	1,724,037	98.52
R&D	800,000	775,605	96.95
Training and Travel	53,000	47,685	89.97
Miscellaneous Expense	70,100	70,056	99.94
<b>Total Expenditure</b>	<b>3,807,100</b>	<b>3,736,357</b>	<b>98.14</b>

**Table 2 :: CFYm1 2018-2019**

<b>Item</b>	<b>Budgeted</b>	<b>Utilization</b>	
Laboratory Equipment	700,000	691,138	98.73
Software	678,000	675,386	99.61
Laboratory Consumable	30,000	28,054	93.51
Maintenance and Spares	850,000	833,049	98.01
R&D	650,000	630,332	96.97
Training and Travel	45,000	40,257	89.46
Miscellaneous Expense	1,275,000	1,234,887	96.85
<b>Total Expenditure</b>	<b>4,228,000</b>	<b>4,133,102</b>	<b>97.76</b>

**Table 3 :: CFYm2 2017-2018**

<b>Item</b>	<b>Budgeted</b>	<b>Utilization</b>	
Laboratory Equipment	75,000	68,139	90.85
Software	21,733	20,046	92.24
Laboratory Consumable	22,000	18,281	83.10
Maintenance and Spares	620,000	607,917	98.05
R&D	675,000	663,694	98.33
Training and Travel	72,000	70,985	98.59
Miscellaneous Expense	30,000	28,654	95.51
<b>Total Expenditure</b>	<b>1,515,733</b>	<b>1,477,716</b>	<b>97.49</b>

**Table 4 :: CFYm3 2016-2017**

<b>Item</b>	<b>Budgeted</b>	<b>Utilization</b>	<b>Percentage of Utilization</b>
Laboratory Equipment	94,000	91,599	97.45
Software	15,000	14,956	99.71
Laboratory Consumable	30,000	26,938	89.79
Maintenance and Spares	420,000	402,616	95.86
R&D	530,000	528,492	99.72
Training and Travel	125,000	118,835	95.07
Miscellaneous Expense	22,000	21,156	96.17
<b>Total Expenditure</b>	<b>1,236,000</b>	<b>1,204,593</b>	<b>97.46</b>

**Utilization:**

- Proposed budget sanctioned by the management, we purchased the lab equipment and software and also given training to the students as well as faculty as per the vision and mission of the Department.
- Total utilization has been at a healthy range of 97.46% to 98.14% of the budgeted expenditure in the past 4 years.
- The department is able to accrue a significant portion of the nonrecurring expenditure from internal accruals indicating a healthy growth.
- To meet the curriculum requirements, established CEED laboratory with necessary computers and equipment.
- Total expenditure of the department drastically increased in the last 4 years due to the focus of the department on infrastructure improvement and establishing state of the facilities.

**10.4. Library and Internet (20)**

*(Indicate whether zero deficiency report was received by the Institution for all the assessment years. Effective availability/ purchase records and utilization of facilities/equipment etc. to be documented and demonstrated)*

The Institute Central Library aims to providing access to its Printed resources as well as Electronic Resources for the use of faculty and Students at the college campus. The Staff and students have unlimited access to a wealth of Information found in resources like books, magazines, Journals, Hand Books, Annual reports and the Internet. In addition, the library offers specious seating arrangements and a calm ambience for learning.

**Zero Deficiency:****Table 10.16** Zero Deficiency report

<b>Academic Year</b>	<b>Zero deficiency report received by the Institute from AICTE</b>	<b>Application No.</b>
2019-20	YES	1-4261476817
2018-19	YES	1-3514059264
2017-18	YES	1-3325461133
2016-17	YES	1-2812749429

**Library Data Base****Table 10.17 Details of Library**

Carpet area of library (in m2)	571.91Sq. Mts
Reading space (in m2)	275 sq Mts
Number of seats in reading space	175
Number of users (issue book) per day	210 – Issues & Returns (App)
Number of users (reading space) per day	350 (App)
Timings: During working day	7:30 am to 5:30 pm
Number of library staff	03 +1
Number of library staff with a degree in Library	02
Library Management	01
Computerization for search, indexing	Yes
Issue/return records bar coding used	Yes
Library services on Internet	Yes
DELNET Membership	Yes
Archives	Question Papers, Projects, CDs, News paper Clippings, Syllabus etc

**Library Expenditure****Table 10.18 Expenditure Details of Library**

<b>Academic Year</b>	<b>Books</b>	<b>Journals (E-Journals + Hard Journals)</b>	<b>Other Expenditure</b>	<b>Total Expenditure</b>
2019-20	301890.00	76680.00	74574.00	453144.00
2018-19	434438.00	224696.00	64785.00	723919.00
2017-18	855706.00	176376.00	150550.00	1182632.00
2016-17	652491.00	97452.00	46880.00	796823.00

**10.4.1. QUALITY OF LEARNING RESOURCES (HARD/SOFT) (10)**

The central Library is a proud partner in the Institute's march towards its vision playing a vital role in acquisition, organization and dissemination of knowledge. The main thrust of the library continues to be the improvement of the quality of services and facilities, achieving higher degree of user's satisfaction and modernization of its activities and operations. The Central Library is totally Air Conditioned, presently covers a total user area of 571.91 sq. mtrs, with a seating capacity of 175 and caters to the information needs of the faculty, staff and students. The Central Library has Text book section, Circulation section, Reference books, Periodical Section with rich collection of Journals and books. The separate departmental libraries are establishment in each department for quick access purpose in addition to the central library.

**Library Collection:**

The Vignana Vahini Library has a huge collection of 27784 books with 5676 titles on various subjects including technical, managerial and humanities and reference books covering biographies, dictionaries, yearbooks etc. The library subscribes 108 National, International print journals and Magazines, 5230 e-journals, and holds over 1018 project reports. The Learning materials, Previous Question Papers, Project Reports of all departments are made available

**Library e-Resources:**

The Digital Library has 15 computers and several E- Resource of e-journals, e-books, video lectures (like NPTEL), audio lectures of various publisher are made available in the Digital Library for effective teaching learning process.

**Library Automation and Security:**

The Central Library employs Barcode technology for access control, automatic issue and return of library books. Automation of library services enables library staff to assist the students for more time in their search for quality learning resources.

***10.4.1.1 Relevance and availability of learning resources:***

The procurement of the books is decided based on the library advisory committee which consists of all the departments. Selected students from III and IV year of Engineering are also members of the library advisory committee. This committee recommends the titles and authors which are relevant for the courses, and of latest publications. The committee also recommends on the procurement of e-books and e-journals. We implement all the recommendations of the advisory committee.

The following table gives the number of titles and volumes available in central library.

<b>No of Titles and Volumes: 30-06-2020</b>		
<b>No. of Titles: 5676</b>		
<b>No. of Volumes: 27784</b>		
<b>Academic Year</b>	<b>No. of Titles added</b>	<b>No. of Volumes added</b>
2019-20	126	555
2018-19	124	1039
2017-18	183	1708
2016-17	181	1702

The below table gives the number of titles and volumes program wise in the central library.

**Table 10.19** Program Wise Number of Titles and Volumes

<b>S. No</b>	<b>Subject</b>	<b>No. of Titles</b>	<b>No. of Volumes</b>
1	Computer Science Engineering	927	4324
2	Information Technology	813	3312
3	Electronics and Communications Engineering	921	4314
4	Electrical and Electronics Engineering	826	3819
5	Mechanical Engineering	712	3013
6	Master of Business Administration	731	5027
7	Sciences & Humanities	318	2762
8	General Books	428	1213
	<b>Total</b>	<b>5676</b>	<b>27784</b>
9	E-Books	1784	1784
10	<u>Book Bank Books:</u>		
	i) SC BOOKS	93	165
	ii) ST BOOKS	25	25



**Scholarly Journal Subscription:**

Academic Year	No. of Total Technical Journals/Magazines subscribed (Hard Copy)	Internationally acclaimed titles in (Softcopy)
2019-20	108	<ul style="list-style-type: none"> <li>• IEEE</li> <li>• IEI</li> <li>• J-Gate</li> <li>• DELNET</li> <li>• N-Digital</li> </ul>
2018-19	104	<ul style="list-style-type: none"> <li>• IEEE</li> <li>• IEI</li> <li>• J-Gate</li> <li>• DELNET</li> <li>• N-Digital</li> </ul>
2017-18	101	<ul style="list-style-type: none"> <li>• IEEE</li> <li>• IEI</li> <li>• J-Gate</li> <li>• DELNET</li> <li>• N-Digital</li> </ul>

**Availability of Digital Library Contents:**

Following digital contents are made available

Content	Accessibility	
NPTEL Video Lecture	Access Provided to NPTEL Video Lecture Content	YES, through local Server
National Digital Library of India (NDL) IIT Kharagpur	Membership to NDL Digital Library of India	YES
Availability over Intranet /Internet	YES	
No. of users per day:	25 - 35 Per Day	

**10.4.1.2 Accessibility to Students:**

1. The Library is open for all users from 7.30 am to 5.30 pm. The library hours are extended on the basis of need during examinations.
2. Regular class time tables of all programs allot one period a week for library study.
3. The students utilize the library study period. In addition, many students spend many more hours in the library studying on their own.
4. The use of library by students is generally more during examination period.

5. Digital Library is also available to the students with free internet Access.
6. The library provides IP enabled access to a large number of full texts online journal databases from the various publishers.
7. In the library the staff helps the students to register National Digital Library for self learning. The staff also helps the students to register with NDL.

#### ***10.4.1.3 Support to students for self learning activities***

1. A digital library is setup to facilitate online access of the information.
2. The search and download functions are free of cost for all the users.
3. Students can access digital resources through the systems and download the required books / publications.
4. NPTEL (National Project on Technology Enhanced Learning): Access to online learning material prepared by IIT and other esteemed institutions are hosted on institution server.
5. Institute is registered as member of National Digital Library (NDL) & DELNET
6. Each student is given 3 library cards using which he/she can lend 3 books for 15 days.
7. The borrowed books can be renewed before the due date



**10.4.2. INTERNET (10)**

The entire campus is Wi-Fi enabled to all the students and faculty members. A state-of-the-art campus network with a 60 Mbps Leased line Internet connection offer unlimited access of Internet for the students and staff round the clock, for their educational and research needs.

**Table 10.19** Details of Internet

<b>S. No</b>	<b>Particulars</b>	
1	Name of Internet Provider	Idea Cellular Limited and Bharti Airtel Limited
2	Available Bandwidth	60 Mbps
3	WiFi Availability	40 Mbps (Reliance Jio) Wi-Fi connectivity is available in and around the campus
4	Internet access in labs, classrooms, library and office of all	Yes. Internet is accessible in all computer labs, classrooms, Library and department offices
5	Security Arrangements	Quick heal Antivirus with firewall protection