Program Outcomes for UG & PG Programs

PROGRAM OUTCOMES FOR UG ENGINEERING PROGRAMS

PO1 *Engineering Knowledge*: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex *electronics and communication* engineering problems.

PO2 *Problem Analysis*: Identify, formulate, review research literature, and analyze complex *electronics and communication* engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO3 *Design/Development of Solutions*: Design solutions for complex *electronics and communication* 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.

PO4 *Conduct Investigations of Complex Problems*: 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.

PO5 *Modern Tool Usage*: 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.

PO6 *The Engineer and Society*: 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.

PO7 *Environment and Sustain ability*: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO8 *Ethics*: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO9 *Individual and Team Work*: Function effectively as an individual, and as a member or leader in diverse teams, and in multi-disciplinary settings.

PO10 *Communication*: 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.

PO11 *Project Management and Finance*: 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 multi-disciplinary environments.

PO12 *Life-long Learning*: 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.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

M.Tech –POWER AND INDUSTRIAL DRIVE

PROGRAMME OUTCOMES (POs)

PO1: Ability to evaluate and analyse problems related to Power Electronic Systems and incorporate the principles in the state of art systems for further improvement.

PO2: Design and conduct experiments, as well as analyze the power electronic converters & drives and interpret the data.

PO3: Function on multidisciplinary technological issues assimilating power electronics advancements.

PO4: Identify, formulate and model the power electronic systems as a solution to the problems in allied disciplines.

PO5: Communicate effectively on complex engineering activities with the engineering community and with society at large.

PO6: Recognize the need for and engage in life-long learning to update with or develop technologies to meet the growing and changing needs of society.

PO7: Use the techniques, skills, and modern engineering simulation tools necessary for the design and development of power converter topologies.

PO8: Propose, plan and execute projects subjected to financial, personnel and time constraints in allied fields assimilating power electronics advancements.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

M.Tech –POWER AND INDUSTRIAL DRIVE

PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

PEO1: Ability to identify, analyse, design and solve complex and emerging problems of Power Electronics and Drives.

PEO2: Attain industry leadership skills to cater to the changing needs of power electronic industry, academia, society and environment.

PEO3: Engage in life-long learning through independent study, projects, research and to work in multidisciplinary teams.

PROGRAMME SPECIFIC OUTCOMES (PSOs)

PSO1: Apply technical knowledge, skills and analytical ability to design, develop and test power electronic converters and drives using modern tools and technologies.

PSO2: Solve the real world problems in the emerging fields like smart grid, renewable energy interfaces, and electric vehicles and to develop innovative technologies relevant to social, ethical, economic and environmental issues.

VIGNAN'S INSTITUTE OF ENGINEERING FOR WOMEN VISAKHAPATNAM-49

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DEPARTMENT OF MECHANICAL ENGINEERING

M.Tech. (CAD/CAM)

PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

After 3-5 years of graduation, the graduate shall be able to

PEO 1: Turn into successful women engineer with sound technical knowledge in design andmanufacturing of mechanical systems.

PEO 2: Play a key role in research, innovation and entrepreneurship to address societal and environmentalissues.

PEO 3: Develop professional and ethical values in the working environment as a part of lifelong learningand practice.

PSOs OF THE DEPARTMENT

The students must attain the knowledge and skills to

PSO 1: Create and deploy new ideas on mechanical systems with optimal design, analysis and evaluationinusing modern CAD tools

PSO 2: Solve critical technical problems in core areas with the use of latest CAM tools and technologies

PROGRAMME OUTCOMES (POs):

At the end of the programme the student shall be able to

PO1: Gain essential fundamentals in the areas of computer aided design and manufacturing.

PO2: Apply novel ideas to examine problems encountered in computer aided design and manufacturing.

PO3: Identify, devise and resolve design and manufacturing problems.

PO4: Perform design and manufacturing in research orientation.

PO5: Deploy existing and advanced design and manufacturing software.

PO6: Team up with technical institutions, industry and R&D establishments in multidisciplinary teams.

PO7: Implement technical and management principles in engineering projects.

PO8: Write technical reports and articles and communicate efficiently.

PO9: Motivate in self and life-long learning and practice professional practice in specialized areas ofdesign and manufacturing.

PO10: Showcase the societal accountability with adherence to ethical values.

PO11: Compete others and do corrective actions wherever necessary.

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VIGNAN'S INSTITUTE OF ENGINEERING FOR WOMEN

Approved by AICTE, New Delhi & Affiliated to JNTUK, Kakinada

PG – VLSI & EMBEDDED SYSTEMS

PROGRAM OUTCOMES (POs)

Engineering Graduates will be able to:

PO1. Acquire in-depth knowledge in the field of VLSI &Embedded Systems with an ability to evaluate and analyse the existing knowledge for enhancement.

PO2. Analyse critical complex engineering problems and provide solutions through research.

PO3. Identity the areas for the development of Electronic hardware design for the benefit of the society.

PO4. Extract information pertinent to challenging problems through literature survey and by applying appropriate research methodologies, techniques and tools to the development of technological knowledge.

PO5. Select, learn and apply appropriate techniques, resources and modern engineering tools to complex engineering activities with an understanding of limitations.

PO6. Understand group dynamics, recognise opportunities and contribute positively to multidisciplinary work to achieve common goals for further learning.

PO7. Demonstrate engineering principles and apply the same to manage projects efficiently as a team after considering economical and financial factors.

PO8. Communicate with engineering community and society regarding complex engineering activities effectively through reports, design documentation and presentations.

PO9. Engage with commitment in life-long learning independently to improve knowledge and competence.

PO10. Acquire professional and intellectual integrity, professional code and conduct, ethics of research and scholarship by considering the research outcomes to the community for sustainable development of society.

PO11. Observe and examine critically the outcomes and make corrective measures, and learn from mistakes without depending on external feedback.

PO12. Able to plan, conduct an organized and systematic study on significant research topic within the field of VLSI &Embedded Systems and its allied field.

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

PG –VLSI& EMBEDDED SYSTEMS

PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

Graduates will be able to -

PEO 1: To educate and train the graduates with knowledge and skills necessary to formulate, design and solve problems in analog, digital & mixed signal VLSI, Embedded system design, VLSI signal processing & Hardware Software Co-Design.

PEO 2: Pursue career in research in the various fields of VLSI and Embedded System domain through self-learning on cutting edge technologies.

PSOs OF THE DEPARTMENT

PSO 1: To design and develop VLSI circuits by learning advanced design techniques and algorithms to optimse design parameters requirement.

PSO 2: Integration of embedded co-design for design methodologies in embedded & IoT applications.

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M.TECH – DIGITAL ELECTRONICS AND COMMUNICATION SYSTEMS

PROGRAM OUTCOMES (POs)

Engineering Graduates will be able to:

PO1. Acquire in-depth knowledge in the field of Communication Systems with an ability to evaluate and analyse the existing knowledge for enhancement.

PO2. Analyse critical complex engineering problems and provide solutions through research.

PO3. Identity the areas for the development of communication system design for the benefit of the society.

PO4. Extract information pertinent to challenging problems through literature survey and by applying appropriate research methodologies, techniques and tools to the development of technological knowledge.

PO5. Select, learn and apply appropriate techniques, resources and modern engineering tools to complex engineering activities with an understanding of limitations.

PO6. Understand group dynamics, recognise opportunities and contribute positively to multidisciplinary work to achieve common goals for further learning.

PO7. Demonstrate engineering principles and apply the same to manage projects efficiently as a team after considering economical and financial factors.

PO8. Communicate with engineering community and society regarding complex engineering activities effectively through reports, design documentation and presentations.

PO9. Engage with commitment in life-long learning independently to improve knowledge and competence.

PO10. Acquire professional and intellectual integrity, professional code and conduct, ethics of research and scholarship by considering the research outcomes to the community for sustainable development of society.

PO11. Observe and examine critically the outcomes and make corrective measures, and learn from mistakes without depending on external feedback.

PO12. Able to plan, conduct an organized and systematic study on significant research topic within the field of Communication Systems and its allied field.

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

M.TECH – DIGITAL ELECTRONICS AND COMMUNICATION SYSTEMS

PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

Graduates will be able to -

PEO 1: To educate and train the graduates with knowledge and skills necessary to formulate, design and solve problems in digital electronics and communication domain.

PEO 2: Pursue career in research in the various fields of digital electronics and communication domain through self-learning on cutting edge technologies.

PSOs OF THE DEPARTMENT

PSO 1: To design and develop digital circuits by learning advanced logical functions to optimse design parameters requirement.

PSO 2: Apply advanced algorithm in communication systems to design complex applications.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

M.Tech. (CSE)

PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

After 3-5 years of graduation, the graduate shall be able to

PEO 1: Have knowledge and expertise to analyze data and networks using latest tools and technologies.

PEO 2: Acquire the knowledge on modern tools to solve hardware and software solutions.

PSOs OF THE DEPARTMENT

The students must attain the knowledge and skills to

PSO 1: Comprehend latest tools and techniques of Computer Engineering so that they can analyze, design and create computing products and solutions for real life problems.

PSO 2: Expose to learn life skills and Intrapersonal development activities to face the dynamically changing technology.

PSO 3: Solve interdisciplinary activities, with professional attitude and ethics, communication to work under team and to ability to solve social issues through their Employment. Higher Studies and Research.

PROGRAM OUTCOMES (POs):

At the end of the programme the student shall be able to

PO1: Demonstrate a degree of mastery over the area as per the specialization of the program. The mastery should be at a level higher than the requirements in the appropriate bachelor program.

PO2: Expose contemporary research which meets the research and development needs of the industry and they are able to carry out *research* and *intellectual endeavors* of the highest standards that advances the theoretical knowledge and are of immediate and long-range practical significance.

PO3: Develop *strong reasoning skills* to enable them to take successful decisions in key management and marketing positions and get exposed to *cutting edge developments* incomputing technology.

PO4: Develop *communication skills* so that they are able to express ideas clearly and persuasively, in written and oral forms.

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PO5: W*ork with others*, in both, professional and social settings and will raise the *curiosity*,the *desire*, the *awareness*, the *competence* and the *ability* among themselves to keep learning throughout life.

PO6: Expose *global view* so that they can appreciate diversity in the world and in intellectual pursuits which will be attained by inculcating in them an understanding of the *human,social and business context* in which they will utilize their engineering skills.

PO7: Write and present a substantial technical report/document.

PO8: Have a thorough grounding in the *key principles* and *practices of computing*, and willhave applied their computer engineering skills and knowledge of foundational principles to the design and implementation of practical systems by actively getting engaged into *learning*, *understanding*, and *applying new ideas* and *technologies* as thefield evolves.

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DEPARTMENT OF MANAGEMENT STUDIES

Program Outcomes:

PO1: Apply knowledge of Management theories and practices to solve business problems.

PO2: Foster analytical and critical thinking abilities for data-based decision making

PO3: Ability to develop value based leadership skills

PO4: Ability to understand, analyze and communicate global economic legal and ethical aspects of business

PO5: Ability to lead themselves and others in the achievement of organizational goals contributing effectively to a team environment.

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