



Lecture Plan for the courses handled related to Renewable Energy Sources

S.No	Regulation	Year & Sem	Course Code	Course Name	Page No.
1.	R19	III B.Tech II Sem	R193202G	Renewable Energy Sources	2-4
2.	R16	III B.Tech I Sem	R1631022	Renewable Energy Sources	5-8
3.	R13	IV B.Tech I Sem	RT41021	Renewable Energy Sources & Systems	9-12



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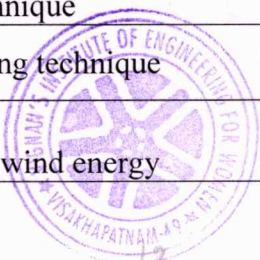
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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

LECTURE PLAN

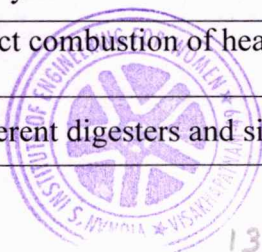
Course Name: Renewable Energy Sources	Course Code: R193202G
Year/ Sem : III B TECH II SEM	Regulation: R19

Lecture No.	Topic name	Source
Lecture 1	Unit-I Energy conversation principle	T.B: 1- Ch:02 Page No: 27-29
Lecture 2	Energy scenario (world and India)	T.B: 1- Ch:02 Page No: 34-37
Lecture 3	various forms of renewable energy	T.B: 1- Ch:02 Page No: 40-44
Lecture 4	Solar radiation: Outside earth's atmosphere , Earth surface	T.B: 1- Ch:02 Page No: 49-53
Lecture 5	Analysis of solar radiation data	T.B: 1- Ch:2 Page No: 49-53
Lecture 6	Geometry	T.B: 1- Ch:2 Page No: 53-60
Lecture 7	Radiation on tilted surfaces	T.B: 1- Ch:2 Page No: 69-71
Lecture 8	Numerical problems	T.B: 1- Ch:2 Page No: 68-69
Lecture 9	Numerical problems	T.B: 1- Ch:2 Page No: 68-69
Lecture 10	Unit-II Solar photovoltaic cell, module, array, construction.	R.B:5-Ch:6 Page no:172-177
Lecture 11	Developing technologies ,Cell I-V characteristics	R.B:5-Ch:6 Page no:166-168
Lecture 12	Equivalent circuit of solar cell	R.B:5-Ch:6 Page no:168-175
Lecture 13	Series resistance , Shunt resistance	R.B:5-Ch:6 Page no:172-175
Lecture 14	Applications and systems	R.B:5-Ch:6 Page no:188-190
Lecture 15	Balance of system components	R.B:5-Ch:6 Page no:185-186
Lecture 16	System design	R.B:5-Ch:6 Page no:176-177
Lecture 17	storage sizing, PV system sizing	R.B:5-Ch:6 Page no:185-187
Lecture 18	Maximum power point techniques: Perturb and observe (P&O) technique	R.B:5-Ch:6 Page no:185-189
Lecture 19	Hill climbing technique	R.B:5-Ch:6 Page no:185-190
Lecture 20	Unit-III Sources of wind energy	T.B: 1- Ch:06 Page No:227



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Lecture 21	Wind patterns	T.B: 1- Ch:06 Page No:228-229
Lecture 22	Types of turbines	T.B: 1- Ch:06 Page No:552-553
Lecture 23	Horizontal axis and vertical axis machines	T.B: 1- Ch:06 Page No:257-277
Lecture 24	Kinetic energy of wind	T.B: 1- Ch:06 Page No:231
Lecture 25	Betz coefficient	T.B: 1- Ch:06 Page No:239
Lecture 26	Tip speed ratio	T.B: 1- Ch:06 Page No:269-270
Lecture 27	Efficiency	R.B: 1- Ch:06 Page No:287-289
Lecture 28	Power output of wind turbine	Web process
Lecture 29	Selection of generator(synchronous, induction)	R.B: 1- Ch:06 Page No:293-296
Lecture 30	Maximum power point tracking.	Web process
Lecture 31	wind farms	Web process
Lecture 32	Power generation for utility grids.	Web process
Lecture 33	Unit-IV Basic working principle	T.B: 1- Ch:09 Page No:544
Lecture 34	Classification of hydro systems :Large,small,micro	T.B: 1- Ch:09 Page No:546
Lecture 35	Measurement of head and flow	T.B: 1- Ch:09 Page No:546
Lecture 36	Energy equation	Web process
Lecture 37	Types of Turbines	Web process
Lecture 38	Numerical problems.	Web process
Lecture 39	Tidal power- Basics	T.B: 1- Ch:09 Page No:510-513
Lecture 40	Kinetic energy equation	T.B: 1- Ch:09 Page No: 526-527
Lecture 41	Turbines for tidal power	Web process
Lecture 42	Turbines for tidal power	Web process
Lecture 43	Numerical problems	T.B: 1- Ch:09 Page No: 527-529
Lecture 44	Wave power - Basics	T.B: 1- Ch:09 Page No: 533-535
Lecture 45	Kinetic energy equation	T.B: 1- Ch:09 Page No:537
Lecture 46	Wave power devices , Linear generators	Web process
Lecture 47	Unit-V Biomass Energy	T.B: 1- Ch:07 Page No:313
Lecture 48	Fuel classification	T.B: 1- Ch:07 Page No:315-324
Lecture 49	Pyrolysis	T.B: 1- Ch:07 Page No:414
Lecture 50	Direct combustion of heat	T.B: 1- Ch:07 Page No:321
Lecture 51	Different digesters and sizing	T.B: 1- Ch:07 Page No:342-353



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Lecture 52	Fixed dome digesters and types	T.B: 1- Ch:07 Page No:353-355
Lecture 53	Fixed dome digesters and types	T.B: 1- Ch:07 Page No:353-355
Lecture 54	Floating drum digesters	T.B: 1- Ch:07 Page No:355-357
Lecture 55	Floating drum digesters	T.B: 1- Ch:07 Page No:355-357
Lecture 56	Fuel cell	T.B: 1- Ch:10 Page No:561
Lecture 57	Classification	T.B: 1- Ch:10 Page No:566
Lecture 58	Efficiency	T.B: 1- Ch:10 Page No:581
Lecture 59	VI characteristics	T.B: 1- Ch:10 Page No:575
Lecture 60	Geothermal	T.B: 1- Ch:08 Page No:439
Lecture 61	Classification	T.B: 1- Ch:10 Page No:443-456
Lecture 62	Dry rock and aquifer	T.B: 1- Ch:10 Page No:463-464
Lecture 63	Energy analysis	Web process

Text Book:

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2. Solar Energy: Principles of Thermal Collection and Storage, S. P.Sukhatme and J. K. Nayak, TMH, New Delhi, 3rd Edition.
3. Renewable Energy Resources, John Twidell and Tony Weir, Taylor and Francis -second edition, 2013.
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3. Renewable Energy Technologies /Ramesh & Kumar /Narosa.
4. Renewable energy technologies – A practical guide for beginners –Chetong Singh Solanki, PHI.
5. Non conventional energy source –B.H. Khan- TMH-2nd edition.

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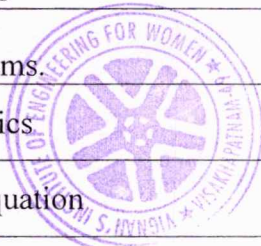
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LECTURE PLAN

Course Name: Renewable Energy Sources	Course Code: R1631022
Year/ Sem : III B TECH I SEM	Regulation: R16

Lecture No.	Topic name	Source
Lecture 1	Unit-1 Energy conversation principle	T.B: 1- Ch:02 Page No: 25-29
Lecture 2	Energy scenario (world and India)	T.B: 1- Ch:02 Page No: 30-32
Lecture 3	various forms of renewable energy	T.B: 1- Ch:02 Page No: 35-40
Lecture 4	Solar radiation: Outside earth's atmosphere , Earth surface	T.B: 1- Ch:02 Page No: 49-53
Lecture 5	Analysis of solar radiation data	T.B: 1- Ch:2 Page No: 49-53
Lecture 6	Geometry	T.B: 1- Ch:2 Page No: 53-60
Lecture 7	Radiation on tilted surfaces	T.B: 1- Ch:2 Page No: 69-71
Lecture 8	Numerical problems	T.B: 1- Ch:2 Page No: 68-69
Lecture 9	Numerical problems	T.B: 1- Ch:2 Page No: 68-69
Lecture 10	Unit-II Liquid flat plate collections	T.B: 1- Ch:02Page No:(76-79)
Lecture 11	Performance analysis	T.B: 2- Ch:03 Page No:(109-111)
Lecture 12	Transmissivity	T.B: 1- Ch:03 Page No:90
Lecture 13	Absorptivity product collector efficiency factor	T.B: 1- Ch:03 Page No:90-91
Lecture 14	Collector heat removal factor	T.B: 2- Ch:03 Page No:91-94
Lecture 15	Numerical problems	T.B: 1- Ch:03 Page No:100-102
Lecture 16	Introduction to solar air heaters	R.B: 1- Ch:03 Page No:81-86
Lecture 17	Concentrating collectors	R.B: 1- Ch:03 Page No:109-138
Lecture 18	Solar pond and solar still	R.B: 1- Ch:03 Page No:138
Lecture 19	Solar thermal plants.	Internet
Lecture 20	Unit-III Solar photovoltaic cell, module, array, construction.	R.B:5-Ch:6 Page no:172-177
Lecture 21	Developing technologies ,Cell I-V characteristics	R.B:5- Ch:6 Page no:166-168

Lecture 22	Equivalent circuit of solar cell	R.B:5-Ch:6 Page no:168-175
Lecture 23	Series resistance , Shunt resistance	R.B:5-Ch:6 Page no:172-175
Lecture 24	Applications and systems	R.B:5-Ch:6 Page no:188-190
Lecture 25	Balance of system components	R.B:5-Ch:6 Page no:185-186
Lecture 26	System design	R.B:5-Ch:6 Page no:176-177
Lecture 27	Storage sizing, PV system sizing	T.B: 1- Ch:06 Page No:200
Lecture 28	Maximum power point techniques: Perturb and observe (P&O) technique	T.B: 1- Ch:06 Page No:218
Lecture 29	Hill climbing technique	T.B: 1- Ch:06 Page No:220
Lecture 30	Unit-IV Sources of wind energy	T.B: 1- Ch:06 Page No:227
Lecture 31	Wind patterns	T.B: 1- Ch:06 Page No:228-229
Lecture 32	Types of turbines	T.B: 1- Ch:06 Page No:552-553
Lecture 33	Horizontal axis and vertical axis machines	T.B: 1- Ch:06 Page No:257-277
Lecture 34	Kinetic energy of wind	T.B: 1- Ch:06 Page No:231
Lecture 35	Betz coefficient	T.B: 1- Ch:06 Page No:239
Lecture 36	Tip speed ratio	T.B: 1- Ch:06 Page No:269-270
Lecture 37	Efficiency	R.B: 1- Ch:06 Page No:287-289
Lecture 38	Power output of wind turbine	Web process
Lecture 39	Selection of generator(synchronous, induction)	R.B: 1- Ch:06 Page No:293-296
Lecture 40	Maximum power point tracking.	Web process
Lecture 41	Wind farms	Web process
Lecture 42	Power generation for utility grids.	Web process
Lecture 43	Unit-V Basic working principle	T.B: 1- Ch:09 Page No:544
Lecture 44	Classification of hydro systems :Large,small,micro	T.B: 1- Ch:09 Page No:546
Lecture 45	Hydro Power Plant	Internet
Lecture 46	Measurement of head and flow	T.B: 1- Ch:09 Page No:546
Lecture 47	Energy equation	Web process
Lecture 48	Types of Turbines	Web process
Lecture 49	Numerical problems.	Web process
Lecture 50	Tidal power- Basics	T.B: 1- Ch:09 Page No:510-513
Lecture 51	Kinetic energy equation	T.B: 1- Ch:09 Page No: 526-527



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Lecture 52	Turbines for tidal power	Web process
Lecture 53	Turbines for tidal power	Web process
Lecture 54	Numerical problems	T.B: 1- Ch:09 Page No: 527-529
Lecture 55	Wave power - Basics	T.B: 1- Ch:09 Page No: 533-535
Lecture 56	Kinetic energy equation	T.B: 1- Ch:09 Page No:537
Lecture 57	Wave power devices , Linear generators	Web process
Lecture 58	Unit-VI Biomass Energy	T.B: 1- Ch:07 Page No:313
Lecture 59	Fuel classification	T.B: 1- Ch:07 Page No:315-324
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Lecture 63	Fixed dome digesters and types	T.B: 1- Ch:07 Page No:353-355
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Lecture 65	Floating drum digesters	T.B: 1- Ch:07 Page No:355-357
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Lecture 69	Efficiency	T.B: 1- Ch:10 Page No:581
Lecture 70	VI characteristics	T.B: 1- Ch:10 Page No:575
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Lecture 73	Dry rock and aquifer	T.B: 1- Ch:10 Page No:463-464
Lecture 74	Energy analysis	Web process

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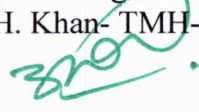



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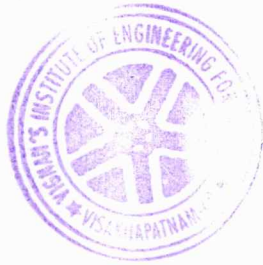
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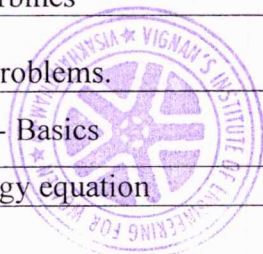
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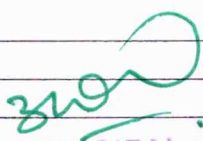
LECTURE PLAN

Course Name: Renewable Energy Sources & Systems	Course Code: RT41021
Year/ Sem : IV B TECH I SEM	Regulation: R13

Lecture No.	Topic name	Source
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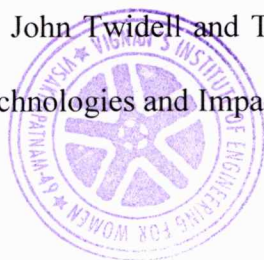



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