



TCET/FRM/IP-02/10

Semester Plan
(Theory)

Revision: A

Semester: VII

Course: MECH

Subject: MEC- 7012: Power Plant Engg.

Class: BE MECH -A & B

Sr. No.	Prerequisite/ Bridge course:	Duration (Week /Hrs)	Modes of Learning	Recommended Sources
1	Prerequisite Course: Thermodynamics & Heat Transfer	3 hours	Self Learning/ Revision	Textbooks: 1. Power Plant Engineering - By Arora & Domkundwar.

Class Room Teaching

Sr. No	Module No.	Lesson No.	Topics Planned (Technology to be used)	Teaching Aids Required	Planned /Completion Date	Resource Book Reference	Remarks
1	1	L 1.1	Introduction: Energy resources and their availability	Laptop , Projector, chalk , Board	10/7/2017	1.1	
2	1	L 1.2	types of power plants, selection of the plants	Laptop , Projector, chalk , Board	12/7/2017	1.1	
3	1	L 1.3	review of basic thermodynamic cycles used in power plants.	Laptop , Projector, chalk , Board	13/7/2017	1.1	
4	1	L 1.4	review of basic thermodynamic cycles used in power plants.	Laptop , Projector, chalk , Board	14/7/2017	1.1	
5	2	L 2.1	Hydro Electric Power Plants	Laptop , Projector, chalk , Board	17/7/2017	1.1	
6	2	L 2.2	Rainfall and run-off measurements and plotting of various curves for	Laptop , Projector, chalk , Board	18/7/2017	1.3	
7	2	L 2.3	Rainfall and run-off measurements and plotting of various curves for	Laptop , Projector, chalk , Board	21/7/2017	1.3	
8	2	L 2.4	power plants design	Laptop , Projector, chalk , Board	24/7/2017	1.3	
9	2	L 2.5	construction and operation of different components of hydro-electric power plants	Laptop , Projector, chalk , Board	26/7/2017	1.3	
10	2	L 2.6	site selection, comparison with other types of power plants	Laptop , Projector, chalk , Board	27/7/2017	1.3	
11	3	L3.1	Steam Power Plants	Laptop , Projector, chalk , Board	28/7/2017	1.1	
12	3	L3.2	Flow sheet and working of modern-thermal power plants	Laptop , Projector, chalk , Board	31/7/2017	1.1	
13	3	L3.3	super critical pressure steam stations	Laptop , Projector, chalk , Board	2/8/2017	1.1	
14	3	L3.4	site selection, coal storage, preparation	Laptop , Projector, chalk , Board	3/8/2017	1.1	
15	3	L3.5	coal handling systems, feeding and burning of pulverized fuel	Laptop , Projector, chalk , Board	4/8/2017	1.1	
16	3	L3.6	ash handling systems	Laptop , Projector, chalk , Board	7/8/2017	1.1	
17	3	L3.7	dust collection-mechanical dust collector and electrostatic precipitator	Laptop , Projector, chalk , Board	9/8/2017	1.1	
18	3	L3.8	dust collection-mechanical dust collector and electrostatic precipitator	Laptop , Projector, chalk , Board	10/8/2017	1.1	
19	4	L 4.1	Combined Cycles	Laptop , Projector, chalk , Board	11/8/2017	1.4	

20	4	L 4.2	Constant pressure gas turbine power plants	Laptop , Projector, chalk , Board	14/8/2017	1.4	
21	4	L 4.3	Arrangements of combined plants (steam & gas turbine power plants)	Laptop , Projector, chalk , Board	16/8/2017	1.4	
22	4	L 4.4	powering systems with gas production from coal,	Laptop , Projector, chalk , Board	18/8/2017	1.4	
23	4	L 4.5	using PFBC systems, with organic fluids	Laptop , Projector, chalk , Board	24/8/2017	1.4	
24	4	L 4.6	parameters affecting thermodynamic efficiency of combined cycles. Problems	Laptop , Projector, chalk , Board	30/8/2017	1.4	
25	5	L 5.1	Nuclear Power Plants	Laptop , Projector, chalk , Board	31/8/2017	1.4	
26	5	L 5.2	Principles of nuclear energy	Laptop , Projector, chalk , Board	1/9/2017	1.4	
27	5	L 5.3	basic nuclear reactions, nuclear reactors-PWR, BWR	Laptop , Projector, chalk , Board	4/9/2017	1.4	
28	5	L 5.4	CANDU, Sodium graphite, fast breeder	Laptop , Projector, chalk , Board	6/9/2017	1.4	
29	5	L 5.5	homogeneous; gas cooled	Laptop , Projector, chalk , Board	7/9/2017	1.4	
30	5	L 5.6	Advantages and limitations, nuclear power station, waste disposal.	Laptop , Projector, chalk , Board	8/9/2017	1.4	
31	6	L 6.1	Power Plant Economics: Load curve, different terms and definitions	Laptop , Projector, chalk , Board	11/9/2017	1.4	
32	6	L 6.2	cost of electrical energy	Laptop , Projector, chalk , Board	13/9/2017	1.4	
33	6	L 6.3	tariffs methods of electrical energy	Laptop , Projector, chalk , Board	14/9/2017	1.4	
34	6	L 6.4	performance & operating characteristics of power plants- incremental rate	Laptop , Projector, chalk , Board	15/9/2017	1.4	
35	6	L 6.5	input-out put curves, efficiency	Laptop , Projector, chalk , Board	20/9/2017	1.4	
36	6	L 6.6	heat rate, economic load sharing, Problems	Laptop , Projector, chalk , Board	22/9/2017	1.4	
Remark:		Syllabus Coverage:		Practice Session: 2		Content Beyond Syllabus:	
Course:		No. of (lectures planned)/(lecture taken):					
Advanced course: Renewable Energy Sources				20 Hours	Online course on RES	Web sources: 1. NPTEL- https://onlinecourses.nptel.ac.in Textbook reference: 1. Solar Energy: Principles of Thermal Collection and Storage by S,P Sukhatme, Tata McGraw Hill	

Text Books:

- 1.1 Power Plant Engineering - Dr P C sharma
- 1.2 Power Plant Engineering - Arora & Domkundwar

Reference Books:

- 1.2 Power Plant Engineering, A K Raja, Amit Praksh Shrivastava, Manish Dwivedi, New Age International Publishers
- 1.3 Power Plant Familiarization, Manual of Central Training Resources Unit of NTPC India, 1991
- 1.4 Power Plant Engineering, 2nd ed, P.K. Nag , Tata McGraw-Hill Pub. Com., New Delhi.
- 1.5 Hydro-Electric and Pumped Storage Plants, M G Jog, New Age International Publishers
- 1.6 A Text Book of Power Plant Engineering, R.K. Rajput, Laxmi Publications
- 1.7 A Course in Power Plant Engineering, Arora, Domkundwar, DhanpatRai & Co.

Digital Reference:

3.1 www.nptel.ac.in

3.2 Study material for Energy Auditor and Energy Manager Examination, Bureau of Energy Efficiency (www.beeindia.in)

Name & Signature of Faculty

Signature of HOD

Signature of Principal /Dean (Academics)

Date:

Date:

Date:

Note:

1. Plan date and completion date should be in compliance
2. Courses are required to be taught with emphasis on resource book, course file, text books, reference books, digital references etc.
3. Planning is to be done for 15 weeks where 1st week will be AOP, 2nd -13th for effective teaching and 14th -15th week for effective university examination oriented teaching, mock practice session and semester consolidation.
4. According to university syllabus where lecture of 4 hrs/per week is mentioned minimum 55 hrs and in case of 3 lectures per week minimum 45 lectures are to be engaged are required to be engaged during the semester and therefore accordingly semester planning for delivery of theory lectures shall be planned.
5. In order to improve score in NBA, faculty members are also required to focus course teaching beyond university prescribed syllabus and measuring the outcomes w.r.t learning course and programme objectives.
6. Text books and reference books are available in syllabus. Here only additional references w.r.t. non -digital/ digital sources can be written (if applicable)
7. Technology to be used in class room during lecture shall be written below the topic planned within the bracket.