

DEPARTMENT OF POWER ENGINEERING
CURRICULUM OF 2ND TO 4TH YEAR OF THE
UNDERGRADUATE ENGINEERING DEGREE PROGRAMME

2nd Year, 1st Semester

Subject Code	Subject Name	Category	Type	Contact L-T-P	Credit	Marks
FET/BS/B/Math/T/211	Mathematics III	BS	Basic	2-1-0	3	100
PE/BS/B/T/212	Chemistry of Energy Science	BS	Basic	3-0-0	3	100
PE/PC/B/T/213	Engineering Thermodynamics	PC	Basic	4-0-0	4	100
PE/PC/B/T/214	Fluid Mechanics	PC	Basic	3-0-0	3	100
PE/PC/B/T/215	Circuit Theory	PC	Basic	3-0-0	3	100
PE/PC/B/T/216	Electrical Generators and Transformers	PC	Basic	3-0-0	3	100
PE/PC/B/S/211	Machine Shop	PC	Basic	0-0-3	1.5	100
PE/PC/B/S/212	Engineering Graphics	PC	Basic	0-0-3	1.5	100
PE/ES/B/S/213	Mechanics Lab	ES	Basic	0-0-2	1	100
Total				19-0-8	23	900

2nd Year, 2nd Semester

Subject Code	Subject Name	Category	Type	Contact L-T-P	Credit Points	Marks
PE/HC/B/T/221	Engineering Economics and Costing	HC	Basic	3-0-0	3	100
PE/ES/B/T/222	Material Science	ES	Basic	3-0-0	3	100
PE/PC/B/T/223	Heat Transfer	PC	Basic	3-0-0	3	100
PE/PC/B/T/224	Applied Solid Mechanics and Mechanisms	PC	Basic	3-0-0	3	100
PE/PC/B/T/225	Digital and Power Electronics	PC	Basic	3-0-0	3	100
PE/PC/B/T/226	Electrical Motors and Drives	PC	Basic	4-0-0	4	100
PE/PC/B/S/221	Fluid Mechanics Lab	PC	Basic	0-0-3	1.5	100
PE/PC/B/S/222	Electrical Machine Lab	PC	Basic	0-0-2	1.0	100
PE/PC/B/S/223	Computational Lab	PC	Basic	0-0-3	1.5	100
Total				19-0-8	23	900

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3rd Year, 1st Semester

Subject Code	Subject Name	Category	Type	Contact L-T-P	Credit Points	Marks
PE/PC/B/T/311	Power Transfer System	PC	Basic	3-0-0	3	100
PE/PC/B/T/312	Thermal Power Generation	PC	Basic	4-0-0	4	100
PE/PC/B/T/313	Hydro Power Generation	PC	Basic	3-0-0	3	100
PE/PC/B/T/314	Non-Conventional Power Generation	PC	Basic	3-0-0	3	100
PE/PC/B/T/315	Control systems	PC	Basic	3-0-0	3	100
PE/PE/H/T/316A PE/PE/H/T/316B	Elective - IH Manufacturing Science Advanced Topics in Electrical Machines	PE	Hons	4-0-0	4	100
PE/PC/B/S/311	Power System Lab	PC	Basic	0-0-3	1.5	100
PE/PC/B/S/312	Thermodynamics and Heat Transfer Lab	PC	Basic	0-0-3	1.5	100
PE/PC/B/S/313	Nonconventional Power Lab	PC	Basic	0-0-3	1.5	100
Total				16(4)-0-10	20.5 (4)	800 (100)

3rd Year, 2nd Semester

Subject Code	Subject Name	Category	Type	Contact L-T-P	Credit Points	Marks
PE/PC/B/T/321	Measurements and Transducers	PC	Basic	3-0-0	3	100
PE/PC/B/T/322	Nuclear Power Generation	PC	Basic	3-0-0	3	100
(as given below)	Elective -I	PE	Basic	3-0-0	3	100
	Elective - II	PE	Basic	3-0-0	3	100
PE/PE/H/T/324A PE/PE/H/T/324B PE/PE/H/T/324C	Elective-II-H Advanced Power Cycles Optimization Techniques Smart grid systems	PE	Hons	4-0-0	4	100
PE/PC/B/T/325	Energy Conservation and Sustainability	PC	Basic	3-0-0	3	100
PE/PC/B/S/321	Control and Transducer Lab	PC	Basic	0-0-3	1.5	100
PE/PC/B/S/322	Prime Mover Lab	PC	Basic	0-0-3	1.5	100
PE/PS/B/S/323	Mini Project	PS	Basic	0-0-4	2.0	100
Total				15(4)-0-10	20 (4)	800 (100)

Subjects in Professional Elective I and II Basket (Any two to be chosen among the offered subjects from the following list)

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|-------------------|--------------------------------------|
| a) PE/PE/B/T/323A | Thermal Power Plant Systems |
| b) PE/PE/B/T/323B | Power System Analysis and Operation |
| c) PE/PE/B/T/323C | IC Engine and Gas Turbine |
| d) PE/PE/B/T/323D | Microprocessors and Microcontrollers |
| e) PE/PE/B/T/323E | Fluidized Bed Boiler |

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4th Year, 1st Semester

Subject Code	Subject Name	Category	Type	Contact L-T-P	Credit Points	Marks
PE/HC/B/T/411	Energy Planning, Management, Audit and Acts	HC	Basic	3-0-0	3	100
PE/PC/B/T/412	Protection & Switchgear	PC	Basic	3-0-0	3	100
PE/PE/B/T/413A	Elective-III Information sensing & Control in Power Plant	PE	Basic	3-0-0	3	100
PE/PE/B/T/413B	High Pressure Boiler					
PE/PE/H/T/414A	Elective-III-H Design and Analysis of Thermal Systems	PE	Hons	4-0-0	4	100
PE/PE/H/T/414B	Electric Power Automation and Utilization					
PE/PE/H/T/414C	Experimental Techniques and Measurements					
	Open Elective- I	OE	Basic	3-0-0	3	100
PE/PS/B/S/411	Project	PS	Basic	0-0-9	4.5	300
PE/PS/B/S/412	Seminar	PS	Basic	0-0-3	1.5	100
Total				12(4)-0-12	18 (4)	800 (100)

4th Year, 2nd Semester

Subject Code	Subject Name	Category	Type	Contact L-T-P	Credit Points	Marks
PE/PE/B/T/421A	Elective-IV Combustion	PE	Basic	3-0-0	3	100
PE/PE/B/T/421B	Design of Hybrid Energy Systems					
PE/PE/B/T/421C	Fluid Power and Control					
(as given below)	Elective IV-H	PE	Hons	4-0-0	4	100
	Elective V-H	PE	Hons	4-0-0	4	100
	Open Elective-II	OE	Basic	3-0-0	3	100
PE/PC/B/S/421	Environmental Pollution Lab	PC	Basic	0-0-2	1	100
PE/PS/B/S/422	Project	PS	Basic	0-0-12	6	400
Total				6(8)-0-14	13 (8)	700 (200)

Subjects in Professional Elective IV-H and V-H Basket (any two to be chosen from those offered from the following list) –

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|-------------------|------------------------------------|
| a) PE/PE/H/T/422A | Turbomachines |
| b) PE/PE/H/T/422B | Digital Signal Processing |
| c) PE/PE/H/T/422C | Computational Fluid Dynamics |
| d) PE/PE/H/T/422D | Digital Control Systems |
| e) PE/PE/H/T/422E | Advanced topics in Fluid Mechanics |
| f) PE/PE/H/T/422F | Fluid flow and gas dynamics |