

Curriculum for 2nd to 4th Year of UG Power Engineering Course

Contact hours, credit points and Marks in parenthesis are the requirements for Honours only.

2nd Year, 1st Semester

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

2nd Year, 2nd Semester

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

3rd Year, 1st Semester

Subject Code	Subject Name	Category	Contact L-T-P	Credit Points	Marks
PE/PC/B/T/311	Power Transfer System	PC	3-0-0	3	100
PE/PC/B/T/312	Thermal Power Generation	PC	4-0-0	4	100
PE/PC/B/T/313	Hydro Power Generation	PC	3-0-0	3	100
PE/PC/B/T/314	Non-Conventional Power Generation	PC	3-0-0	3	100
PE/PC/B/T/315	Control systems	PC	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	4-0-0	4	100
PE/PC/B/S/311	Power System Lab	PC	0-0-3	1.5	100
PE/PC/B/S/312	Thermodynamics and Heat Transfer Lab	PC	0-0-3	1.5	100
PE/PC/B/S/313	Nonconventional Power Lab	PC	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	Contact L-T-P	Credit Points	Marks
PE/PC/B/T/321	Measurements and Transducers	PC	3-0-0	3	100
PE/PC/B/T/322	Nuclear Power Generation	PC	3-0-0	3	100
(as given below)	Elective -I	PE	3-0-0	3	100
	Elective - II	PE	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	4-0-0	4	100
PE/PC/B/T/325	Energy Conservation and Sustainability	PC	3-0-0	3	100
PE/PC/B/S/321	Control and Transducer Lab	PC	0-0-3	1.5	100
PE/PC/B/S/322	Prime Mover Lab	PC	0-0-3	1.5	100
PE/PS/B/S/323	Mini Project	PS	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 |

4th Year, 1st Semester

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

4th Year, 2nd Semester

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

- | | |
|-------------------|------------------------------------|
| 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 |

Load distribution matrix for the four year course (figures in parenthesis in the last column indicate honors credits)

	Basic							Honors	Total
	HC	BS	ES	PC	PE	PS	OE		
1 st Yr	3	16	22.5	-	-	-	-	-	41.5
2 nd Yr 1 st Sem	-	6	1	16	-	-	-	-	23
2 nd Yr 2 nd Sem	3	-	3	17	-	-	-	-	23
3 rd Yr 1 st Sem	-	-	-	20.5	-	-	-	4	20.5 (4)
3 rd Yr 2 nd Sem	-	-	-	12	6	2	-	4	20(4)
4 th Yr 1 st Sem	3	-	-	3	3	6	3	4	18(4)
4 th Yr 2 nd Sem	-	-	-	1	3	6	3	8	13(8)
Total	9	22	26.5	69.5	12	14	6	20	159(20)