

Government College of Engineering, Karad

(an Autonomous Institute of Government of Maharashtra)

Scheme of Instructions and Syllabus

Scheme of Instructions for First Year M. Tech. course in Heat Power Engineering

Semester – I (w.e.f.: AY 2023 - 24)

Sr.	Course Category	Course Code	Course Title	L	T	P	Contact Hrs / week	Credits	Exam Scheme			
									MSE	ISE	ESE	TOTAL
1.	PCC	HP 2101	Thermodynamics and Combustion	3	-	-	3	3	20	20	60	100
2.	PCC	HP 2102	Advanced Heat Transfer	3	-	-	3	3	20	20	60	100
3.	PEC	HP 21*3	Program Elective - I	3	-	-	3	3	20	20	60	100
4.	PEC	HP 21*4	Program Elective - II	3	-	-	3	3	20	20	60	100
5.	MDC	RM2105	Research Methodology	2	-	-	2	2	20	20	60	100
6.	PCC	HP 2106	Lab Practice - I	-	-	4	4	2	--	25	25	50
7.	PEC	HP 2107	Lab Practice - II	-	-	4	4	2	--	25	25	50
8.	OEC	OE21*8	Open Elective	3	-	-	3	3	20	20	60	100
9.	MNC	AU21*9	Audit Course - I	2	-	-	2	-	--	-	-	-
Total				19	-	8	27	21	120	170	410	700

L- Lecture

T-Tutorial

P-Practical

MSE- Mid Semester Examination

ISE - In Semester Evaluation

ESE- End Semester Examination (For Laboratory End Semester performance)

Program Elective / Audit Course / Open Elective (*list is provided at the end of structure*)

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Semester – II (w.e.f.: AY 2023 -24)

Sr.	Course Category	Course Code	Course Title	L	T	P	Contact Hrs / week	Credits	Exam Scheme			
									MSE	ISE	ESE	TOTAL
1.	PCC	HP2201	Advanced Fluid Dynamics	3	-	-	3	3	20	20	60	100
2.	PCC	HP2202	Steam Engineering	3	-	-	3	3	20	20	60	100
3.	PEC	HP22*3	Program Elective - III	3	-	-	3	3	20	20	60	100
4.	PEC	HP22*4	Program Elective – IV	3	-	-	3	3	20	20	60	100
5.	PEC	HP22*5	Program Elective – V	3	-	-	3	3	20	20	60	100
6.	PCC	HP2206	Lab Practice – III	-	-	4	4	2	-	25	25	50
7.	PEC	HE2207	Lab Practice – IV	-	-	4	4	2	-	25	25	50
8.	P / S/ IT	HP2208	Seminar on Pre-Dissertation work	-	-	4	4	2	-	50	50	100
9.	MNC	AU22*9	Audit Course – II	2	-	-	2	-	-	-	-	-
			Total	17	-	12	29	21	200	300	400	700

L- Lecture

T-Tutorial

P-Practical

MSE- Mid Semester Examination

ISE- In Semester Evaluation

ESE- End Semester Examination (For Laboratory End Semester performance)

Program Elective / Audit Course / Open Elective (*list is provided at the end of structure*)

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Semester – III (w.e.f.: AY 2024-25)

Sr.	Course Category	Course Code	Course Title	L	T	P	Contact Hrs / week	Credits	Exam Scheme			
									MSE	TA / CA	ESE	TOTAL
1.	P / S / IT	HP2301	Dissertation – I	-	-	14	14	07	-	100	100	200
2.	PEC	HP2302 **	MOOC online course (8-12 weeks)	-	-	-	-	03	-	-	-	-
			Total	-	-	14	14	10	-	100	100	200

ISE - In- Semester Examination

ESE- End Semester Examination (For Laboratory: End Semester Performance)

** HP2302 is mandatory and will be decided by respective Guide in consultation with Programme Head.

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Semester – IV (w.e.f.: AY 2024-25)

Sr.	Course Category	Course Code	Course Title	L	T	P	Contact Hrs / week	Credits	Exam Scheme			
									MSE	TA / CA	ESE	TOTAL
1.	P / S / IT	HP2401	Dissertation – II	-	-	32	32	16	-	100*	200	300
			Total	-	-	32	32	16	-	100	200	300

ISE/CA- Teacher Assessment / Continuous Assessment

ESE- End Semester Examination (For Laboratory: End Semester Performance)

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List of Program Elective Courses

Semester – I		Semester – II		
Program Elective – I	Program Elective - II	Program Elective - III	Program Elective - VI	Program Elective - V
HP2113: Nuclear Engineering	HP2114: Air Conditioning System Design	HE2213: Refrigeration and cryogenics	HP2214: Computational Fluid Dynamics	HP2215: Engineering Experimental Techniques
HP2123: Energy Conservation and Management.	HP2124: Gas Turbines	HP2223: Design of Heat Exchangers	HP2224: Design of Solar and Wind System	HP2225: Advanced I. C. Engine
HP2133: Design of Fluid Power Systems	HP2134: Advanced Automobile Engineering	HP2233: Advanced Mathematical Methods in Engineering	HP2234: Energy Analysis of Thermal Systems	HP2235: Design of Pump, Compressor and turbine

List of Open Electives and Audit Courses

Semester – I		Semester – II	
Open Electives	Audit Course - I	Audit Course - II	
OE2118: Business Analytics	AU2119: Research Paper Writing	AU2219: Constitution of India	
OE2128: Industrial Safety	AU2129: Disaster Management	AU2229: Pedagogy Studies	
OE2138: Operations Research	AU2139: Sanskrit for Technical Knowledge	AU2239: Stress Management by Yoga	
OE2148: Cost Management of Engineering Projects	AU2149: Value Education	AU2249: Personality Development through Life Enlightenment Skills	
OE2158: Composite Materials			
OE2168: Waste to Energy			