

Government College of Engineering, Karad

SCHEME OF INSTRUCTION & SYLLABI

Programme: Mechanical Engineering

Scheme of Instructions: Third Year B. Tech. in Mechanical Engineering

Semester – V (w.e.f. 2025-26)

Sr. No.	Course Category	Course Code	Course Title	L	T	P	Contact Hrs/Wk	Course Credits	Exam Scheme			
									MSE	ISE	ESE	Total
1	PCC	ME3501	Manufacturing Engineering @	3	--	--	3	3	20	20	60	100
2	PCC	ME3502	Heat and Mass Transfer	3	--	--	3	3	20	20	60	100
3	PCC	ME3503	Theory of Machines @	3	-	--	3	3	20	20	60	100
4	PEC	ME35*4	Programme Elective - 01	3	--	--	3	3	20	20	60	100
5	MDM	##	Multi-disciplinary Minor - 03	3	--	--	3	3	20	20	60	100
6	OE	\$D/O/I	Open Elective -03	2	--	--	2	2	20/NA/NA	20/NA/50	60/100/50	100
7	PCC	ME3507	Heat and Mass Transfer Lab	--	--	2	2	1	-	25	25	50
8	PCC	ME3508	Theory of Machines Lab	--	--	2	2	1	-	25	-	25
9	PEC	ME35*9	Programme Elective – 01 Lab	--	--	2	2	1	-	25	-	25
10	MDM	##	Multi-disciplinary Minor – 03 Lab	--	--	2	2	1	-	50	-	50
11	VSEC	ME3511	Workshop Practice IV	--	--	2	2	1	-	25	25	50
Total				17	--	10	27	22	120	270	410	800

Note: Open Elective-03 can be offered as Offline or Online mode (MOOC)

any course offered from Department/Institute level MDM bucket

\$ D/O/I any course offered by Department/Online/Institute OE bucket

@ Duration of ESE is 3 hours

L	Lecture
T	Tutorial
P	Practical

MSE	Mid Semester Examination
ISE	In Semester Evaluation
ESE	End Semester Examination (For Laboratory End Sem performance)

Course Category	Basic Science Courses (BSC)	Engineering Science Courses (ESC)	Programme Core Course (PCC)	Programme Elective Course (PEC)	Open Elective other than particular program (OE/MDM)	Vocational and Skill Enhancement Course (VSEC)	Humanities Social Science and Management (HSSM)	Experiential Learning (EL)	Co-curricular And Extracurricular Activities (CCA)
Credits	-	-	11	4	6	1	-	-	-
Cumulative Sum	18	16	37	4	16	04	12	01	02

PROGRESSIVE TOTAL CREDITS: 88+22=110



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Programme: Mechanical Engineering

Scheme of Instructions: Third Year B. Tech. in Mechanical Engineering

Semester – VI (w.e.f. 2025-26)

Sr. No.	Course Category	Course Code	Course Title	L	T	P	Contact Hrs/Wk	Course Credits	Exam Scheme			
									MSE	ISE	ESE	Total
1	PCC	ME3601	Control Engineering	3	--	--	3	3	20	20	60	100
2	PCC	ME3602	Machine Design – I @	3	1	--	4	4	20	20	60	100
3	PCC	ME3603	Mechatronics	3	--	--	3	3	20	20	60	100
4	VSEC	ME3604	Metrology and Quality Control	3	--	--	3	3	20	20	60	100
5	PEC	ME36*5	Programme Elective - 02	3	--	--	3	3	20	20	60	100
6	MDM	##	Multi-disciplinary Minor - 04	2	--	--	2	2	20	20	60	100
7	PCC	ME3607	Control Engineering Lab	--	--	2	2	1	-	25	25	50
8	PCC	ME3608	Mechatronics Lab	--	--	2	2	1	-	25	25	50
9	VSEC	ME3609	Metrology and Quality Control Lab	--	--	2	2	1	-	25	25	50
10	EL	ME3610	Minor Project	--	--	2	2	1	-	50	-	50
Total				17	01	08	26	22	120	245	435	800

any course offered from Department/Institute level MDM bucket


@ Duration of ESE is 3 hours

L	Lecture
T	Tutorial
P	Practical

MSE	Mid Semester Examination
ISE	In Semester Evaluation
ESE	End Semester Examination (For Laboratory End Sem performance)

Course Category	Basic Science Courses (BSC)	Engineering Science Courses (ESC)	Programme Core Course (PCC)	Programme Elective Course (PEC)	Open Elective other than particular (OE/MDM)	Vocational and Skill Enhancement Course (VSEC)	Humanities Social Science and Management (HSSM)	Experiential Learning (EL)	Co-curricular And Extracurricular Activities (CCA)
Credits	-	-	12	3	2	04	-	01	-
Cumulative Sum	18	16	49	7	18	08	12	02	02

PROGRESSIVE TOTAL CREDITS: 110+22 =132


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SCHEME OF INSTRUCTION

Programme: Mechanical Engineering

Scheme of Instructions: **UG Degree Level**

(EXIT COURSE after TY of Engineering)

Sr. No.	Course Category	Course Code	Course Title	L	T	P	Contact Hrs / Wk	Course Credits	Mode of Learning
1	EL (INTR)	ME-EC-0301	Industrial Training / Internship *	-	-	-	-	4	Offline
2	PCC	ME-EC-0302	Computer Aided Engineering Lab (ANSYS and MATLAB)	-	-	8	8	4	Offline
		OR							
		ME-EC-0303	Workshop (Non-conventional machining)	-	-	8	8	4	Offline
			Total					08	

*Industrial training of 4 weeks duration

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Basket of Programme Core Courses (PCC)

List of PCC courses offered Semester wise						
Semester I						
Sr.	Course Code	Course	L	T	P	Credits
1	ME3103	Basic Mechanical Engineering	3	-	-	3
2	ME3107	Basic Mechanical Engineering Lab	-	-	2	1
Semester III						
3	ME3302	Engineering Thermodynamics	3	-	-	3
4	ME3303	Material Engineering	3	-	-	3
5.	ME3308	Engineering Thermodynamics Lab	-	-	2	1
6	ME3309	Material Engineering Lab	-	-	2	1
7	ME3310	Machine Drawing Lab	-	-	2	1
Semester IV						
8	ME3401	Fluid Mechanics & Machines	3	-	-	3
9	ME3402	Strength of Materials	3	-	-	3
10	ME3403	Numerical Methods	2	-	-	2
11	ME3404	Machine Tools and Processes	3	-	-	3
12	ME3409	Computer Aided Drafting Lab	-	-	2	1
13	ME3410	Fluid Mechanics & Machines Lab	-	-	2	1
Semester V						
14	ME3501	Manufacturing Engineering @	3	-	-	3
15	ME3502	Heat and Mass Transfer	3	-	-	3
16	ME3503	Theory of Machines @	3	-	-	3


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17	ME3507	Heat and Mass Transfer Lab	-	-	2	1
18	ME3508	Theory of Machines Lab	-	-	2	1
Semester VI						
19	ME3601	Control Engineering	3	-	-	3
20	ME3602	Machine Design – I @	3	1	-	4
21	ME3603	Mechatronics	3	-	-	3
22	ME3607	Control Engineering Lab	-	-	2	1
23	ME3608	Mechatronics Lab	-	-	2	1
Semester VII						
24	ME3701	Machine Design - II	3	1	-	4
25	ME3702	Finite Element Analysis	3	-	-	3
26	ME3706	Finite Element Analysis Lab	-	-	2	1
Semester VIII						
27	ME3801	Industrial Automation and Robotics	3	-	-	3
28	ME3805	Industrial Automation and Robotics Lab	-	-	2	1
TOTAL						61



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Basket of Programme Elective Courses (PEC)

Elective 01 (Sem. V)	Elective 02 (Sem. VI)	Elective 03 (Sem. VII)	Elective 04 (Sem. VIII)	Elective 05 (Sem. VIII)
ME3514: Renewable Energy Engineering	ME3615: Operations Research	ME3713: Kinematics & Dynamics of Machines	ME3812: Total Quality Management	ME3813: Mechanical Vibrations
ME3524: Industrial Instrumentation	ME3625: Entrepreneurship Development	ME3723: Industrial Fluid Power	ME3822: Process Planning & Cost Estimation	ME3823: Computational Fluid Dynamics
ME3534: Internal Combustion Engines	ME3635: Additive Manufacturing	ME3733: Non-Conventional Machining	ME3832: Power Plant Engineering	ME3833: Mechanical System Design
ME3544: Turbo Machinery	ME3645: Product Design and Development	ME3743: Automobile Engineering	ME3842: Industrial Engineering	ME3843: Refrigeration and Air Conditioning


Basket of respective Programme Elective Laboratory Courses (PEC-Lab)

Elective 01 Lab (Sem. V)	Elective 03 Lab (Sem. VII)	Elective 05 Lab (Sem. VIII)
ME3519: Renewable Energy Engineering Lab	ME3717: Kinematics & Dynamics of Machines Lab	ME3816: Mechanical Vibrations Lab
ME3529: Industrial Instrumentation Lab	ME3727: Industrial Fluid Power Lab	ME3826: Computational Fluid Dynamics Lab
ME3539: Internal Combustion Engines Lab	ME3737: Non-Conventional Machining Lab	ME3836: Mechanical System Design Lab
ME3549: Turbo Machinery Lab	ME3747: Automobile Engineering Lab	ME3846: Refrigeration and Air Conditioning Lab


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Basket of Vocational Skill Enhancement Courses (VSEC)

List of VSEC Courses offered Semester wise						
Semester I						
Sr.	Course Code	Course	L	T	P	Credits
1	ME3111	Workshop practice I	--	--	2	1
Semester II						
2	ME3211	Workshop practice II	--	--	2	1
Semester IV						
3	ME3311	Workshop practice III	--	--	2	1
Semester V						
4	ME3511	Workshop Practice IV	--	--	2	1
Semester VI						
5	ME3604	Metrology and Quality Control	3	-	-	3
6	ME3609	Metrology and Quality Control Lab	-	-	2	1
Semester VII						
7	ME3710	Computer Integrated Manufacturing Lab	--	--	2	1
TOTAL						09


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