

GOVERNMENT COLLEGE OF ENGINEERING KARAD

(An Autonomous Institute of Government of Maharashtra)



DEPARTMENT OF MECHANICAL ENGINEERING

SCHEME OF INSTRUCTION FOR

FIRST YEAR

BACHELOR OF TECHNOLOGY IN MECHANICAL ENGINEERING

AS PER NEP-2020

W.E.F

AY 2023-24

Professor and Head of the
Dept. of Mechanical Engineering
Govt. College of Engineering, KARAD

GOVERNMENT COLLEGE OF ENGINEERING KARAD

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DEPARTMENT OF MECHANICAL ENGINEERING

INSTITUTE VISION

To emerge as a technical Institute of national repute driven by excellence in imparting value based education and innovation in research to face the Global needs of profession.

INSTITUTE MISSION

To create professionally competent engineers driven with the sense of responsibility towards nature and society.

DEPARTMENT VISION

"Be a nationally recognized mechanical engineering department that provides right academic ambience and nurtures innate talent of students"

DEPARTMENT MISSION

"Prepare engineering students for successful career by imparting knowledge, skills & right attitude."



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DEPARTMENT OF MECHANICAL ENGINEERING

PROGRAMME EDUCATIONAL OBJECTIVES (PEO)

PEO1	Solve problems related with mechanical engineering using knowledge of mathematics, basic sciences, mechanical and relevant engineering disciplines and skills developed during graduation studies
PEO2	Demonstrate an understanding about selected specific areas of mechanical engineering as a critical step in career development
PEO3	Function and communicate effectively, both individually and with multidisciplinary teams using professional ethics, social awareness and environmental concern
PEO4	Engage in lifelong learning for successful adaptation to technological changes due to research

PROGRAMME SPECIFIC OUTCOMES (PSO)

PSO1	Able to exhibit skills to cater industry requirements..
PSO2	Able to create a knowledge through project based learning
PSO3	Able to excel in multidisciplinary environment.



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PROGRAMME OUTCOMES (PO)

PO1	Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
PO2	Problem analysis: Identify, formulate, review research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
PO3	Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
PO4	Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
PO5	Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations
PO6	The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
PO7	Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
PO8	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
PO9	Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO10	Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
PO11	Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
PO12	Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Government College of Engineering, Karad

SCHEME OF INSTRUCTION & SYLLABI

Programme: B.Tech. Mechanical Engineering

Proposed Scheme of Instructions: First Year B. Tech. in Mechanical Engineering

Semester – I (w.e.f. 2023-24)

Sr. No.	Course Category	Course Code	Course Title	L	T	P	Contact Hrs/Wk	Course Credits	EXAM SCHEME			
									MSE	ISE	ESE	TOTAL
1	BSC	ME3101	Applied Mathematics - I	3	1	-	4	4	20	20	60	100
2	BSC	ME3102	Applied Physics	3	-	-	3	3	20	20	60	100
3	PCC	ME3103	Basic Mechanical Engineering	3	-	-	3	3	20	20	60	100
4	ESC	ME3104	Applied Mechanics	3	-	-	3	3	20	20	60	100
5	ESC	ME3105	Design Thinking	1	-	2	3	2	-	50	-	50
6	BSC	ME3106	Applied Physics Lab	-	-	2	2	1	-	25	-	25
7	PCC	ME3107	Basic Mechanical Engineering Lab	-	-	2	2	1	-	50	25	75
8	HSSM	ME3108	Professional Communication Skills	1	-	2	3	2	-	50	25	75
9	ESC	ME3109	Applied Mechanics Lab	-	-	2	2	1	-	25	-	25
10	CCA	ME3110	Yoga	-	-	2	2	1	-	50	-	50
11	VSEC	ME3111	Workshop practice I	-	-	2	2	1	-	50	50	100
			Total	14	1	14	29	22	80	380	340	800

L- Lecture

T-Tutorial

P-Practical

MSE- Mid Semester Examination

ISE - In Semester Evaluation

ESE- End Semester Examination (For Laboratory, End Semester 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	08	6	4	-	-	01	02	-	01
Cumulative Sum	08	6	4	-	-	01	02	-	01

PROGRESSIVE TOTAL CREDITS: 22

Signature
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SCHEME OF INSTRUCTION & SYLLABI

Programme: B.Tech. Mechanical Engineering

Proposed Scheme of Instructions: First Year B. Tech. in Mechanical Engineering

Semester – II (w.e.f. 2023-24)

Sr. No.	Course Category	Course Code	Course Title	L	T	P	Contact Hrs/Wk	Course Credits	EXAM SCHEME			
									MSE	ISE	ESE	TOTAL
1	BSC	ME3201	Applied Mathematics - II	3	1	-	4	4	20	20	60	100
2	BSC	ME3202	Applied Chemistry	3	-	-	3	3	20	20	60	100
3	ESC	ME3203	Engineering Graphics	3	-	-	3	3	20	20	60	100
4	ESC	ME3204	Basic Electrical & Electronics	3	-	-	3	3	20	20	60	100
5	HSSM	ME3205	Indian Knowledge Systems (MOOC)	-	-	-	-	2	-	-	100	100
6	ESC	ME3206	Programming For Problem Solving	2	-	-	2	2	20	20	60	100
7	BSC	ME3207	Applied Chemistry Lab	-	-	2	2	1	-	25	-	25
8	ESC	ME3208	Engineering Graphics Lab	-	-	2	2	1	-	50	-	50
9	ESC	ME3209	Programming for Problem Solving Lab	-	-	2	2	1	-	25	-	25
10	CCA	ME3210	NCC/NSS/CSP/E-Cell activity	-	-	2	2	1	-	50	-	50
11	VSEC	ME3211	Workshop II	-	-	2	2	1	-	25	25	50
			Total	14	1	10	25	22	100	275	425	800

L- Lecture

T-Tutorial

P-Practical

MSE- Mid Semester Examination

ISE- In Semester Evaluation

ESE- End Semester Examination (For Laboratory End Semester 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	08	10	-	-	-	01	02	-	01
Cumulative Sum	16	16	4	-	-	02	04	-	02

PROGRESSIVE TOTAL CREDITS: 22+22 =44

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SCHEME OF INSTRUCTION

Programme: Mechanical Engineering

Scheme of Instructions: **UG Certificate Level**

(EXIT COURSE after FY 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-0101	Industrial Training / Internship *	-	-	-	-	4	Offline
2	PCC	ME-EC-0102	Machine Maintenance Lab	-	-	8	8	4	Offline
		OR							
		ME-EC-0103	Vehicle Maintenance Lab	-	-	8	8	4	Offline
		OR							
		ME-EC-0104	Modelling and Drafting Lab	-	-	8	8	4	Offline
			Total					08	

*Industrial Training of 4 weeks duration

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Basket of Basic Sciences Courses (BSC)

List of BSC courses offered Semester wise						
Semester I						
Sr.	Course Code	Course	L	T	P	Credits
1	ME3101	Applied Mathematics - I	3	1	--	4
2	ME3102	Applied Physics	3	--	--	3
3	ME3106	Applied Physics Lab	--	--	2	1
Semester II						
4	ME3201	Applied Mathematics - II	3	1	--	4
5	ME3202	Applied Chemistry	3	--	--	3
6	ME3207	Applied Chemistry Lab	--	--	2	1




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Basket of Engineering Sciences Courses (ESC)

List of ESC courses offered Semester wise						
Semester I						
Sr.	Course Code	Course	L	T	P	Credits
1	ME3104	Applied Mechanics	3	--	--	3
2	ME3105	Design Thinking	2	--	--	2
3	ME3109	Applied Mechanics Lab	-	-	2	1
Semester II						
4	ME3203	Engineering Graphics	3	--	--	3
5	ME3204	Basic Electrical & Electronics	3	--	--	3
6	ME3206	Programming For Problem Solving	2	--	--	2
7	ME3208	Engineering Graphics Lab	--	--	2	1
8	ME3209	Programming for Problem Solving Lab	-	-	2	1

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


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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	ME3110	Workshop practice I	--	--	2	1
Semester II						
2	ME3210	Workshop practice II	--	--	2	1



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