

# Government College of Engineering, Karad

## SCHEME OF INSTRUCTION & SYLLABI

### Programme: Mechanical Engineering

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

Semester – III

Sr. No.	Course Category	Course Code	Course Title	L	T	P	Contact Hrs / Wk	Course Credits	EXAM SCHEME				
									CT-1	CT-2	TA/CA	ESE	TOTAL
1	HSMC	ME2301	Engineering Economics	3	-	-	3	3	15	15	10	60	100
2	BSC	ME2302	Mathematics for Mechanical Engineering	3	-	-	3	3	15	15	10	60	100
3	PCC	ME2303	Engineering Thermodynamics	3	-	-	3	3	15	15	10	60	100
4	PCC	ME2304	Fluid Mechanics & Machines	3	-	-	3	3	15	15	10	60	100
5	PCC	ME2305	Machine Tools and Processes	3	-	-	3	3	15	15	10	60	100
6	PCC	ME2306	Engineering Thermodynamics Lab	-	-	2	2	1	-	-	25	25	50
7	PCC	ME2307	Fluid Mechanics & Machines Lab	-	-	2	2	1	-	-	25	25	50
8	ESC	ME2308	Machine Drawing Lab	2	-	2	4	1	-	-	50	25	75
9	ESC	ME2309	Workshop Practice II	-	-	2	2	1	-	-	25	50	75
10	P/S/IT	ME2310	Industrial Training	-	1	-	-	1			50	-	50
			<b>Total</b>	<b>16</b>	<b>01</b>	<b>08</b>	<b>24</b>	<b>20</b>	<b>75</b>	<b>75</b>	<b>225</b>	<b>425</b>	<b>800</b>

L- Lecture

T-Tutorial

P-Practical

CT1- Class Test 1

TA/CA- Teacher Assessment/Continuous Assessment

CT2- Class Test 2

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

Course Category	HSMC (Hum., Soc. Sc, Mgmt.)	BSC (Basic Sc.)	ESC (Engg. Sc.)	PCC (Programme Core Courses)	PEC (Programme Elective Courses)	OEC (Open Elective courses from other discipline)	MCC (Mandatory Courses)	Project / Seminar / Industrial Training
<b>Credits</b>	03	03	02	11	--	--	--	01
<b>Cumulative Sum</b>	06	21	18	11	--	--	--	01

**PROGRESSIVE TOTAL CREDITS: 37+20 =57**

# Government College of Engineering, Karad

## SCHEME OF INSTRUCTION & SYLLABI

### Programme: Mechanical Engineering

#### Scheme of Instructions: Second Year B. Tech. in Mechanical Engineering

#### Semester – IV

Sr. No.	Course Category	Course Code	Course Title	L	T	P	Contact Hrs /Wk	Course Credits	EXAM SCHEME				
									CT-1	CT-2	TA/CA	ESE	TOTAL
1	OEC	ME2401	Industrial Instrumentation	3	-	-	3	3	15	15	10	60	100
2	ESC	ME2402	Programming for Problem Solving	3	1	-	3	3	15	15	10	60	100
3	PCC	ME2403	Strength of Materials	3	1	-	4	3	15	15	10	60	100
4	PCC	ME2404	Kinematics & Theory of Machines @	3	1	-	4	3	15	15	10	60	100
5	PCC	ME2405	Material Engineering	3	-	-	3	3	15	15	10	60	100
6	OEC	ME2406	Industrial Instrumentation Lab	-	-	2	2	1	-	-	50	-	50
7	PCC	ME2407	Material Engineering Lab	-	-	2	2	1	-	-	25	25	50
8	ESC	ME2408	Computer Aided Drafting Lab	-	-	2	2	1	-	-	25	-	25
9	ESC	ME2409	Workshop Practice – III	-	-	2	2	1	-	-	25	25	50
10	MCC	ME2410	Environmental Science	2	-	-	2	Audit	15	15	10	60	100
11	HSMC	ME2411	Technical Communication	-	1	-	1	1			25	-	25
			<b>Total</b>	<b>17</b>	<b>04</b>	<b>08</b>	<b>29</b>	<b>20</b>	<b>90</b>	<b>90</b>	<b>210</b>	<b>410</b>	<b>800</b>

L- Lecture

T-Tutorial

P-Practical

CT1- Class Test 1

TA/CA- Teacher Assessment/Continuous Assessment

CT2- Class Test 2

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

Course Category	HSMC (Hum., Soc. Sc, Mgmt.)	BSC (Basic Sc.)	ESC (Engg. Sc.)	PCC (Programme Core courses)	PEC (Programme Elective courses)	OEC (Open Elective courses from other discipline)	MCC (Mandatory Courses)	Project / Seminar / Industrial Training
Credits	01	--	05	10	--	04	Yes	01
Cumulative Sum	07	21	23	21	--	04	--	01

**PROGRESSIVE TOTAL CREDITS: 57+20 =77**

# Government College of Engineering, Karad

## SCHEME OF INSTRUCTION & SYLLABI

### Programme: Mechanical Engineering

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

#### Semester – V

Sr. No.	Course Category	Course Code	Course Title	L	T	P	Contact Hrs / Wk	Course Credits	EXAM SCHEME				
									CT-1	CT-2	TA/CA	ESE	TOTAL
1	OEC	ME2501	Operations Research	3	-	-	3	3	15	15	10	60	100
2	PCC	ME2502	Metrology & Quality Control	3	-	-	3	3	15	15	10	60	100
3	PCC	ME2503	Heat Transfer	3	-	-	3	3	15	15	10	60	100
4	PCC	ME2504	Machine Design-I	3	-	-	3	3	15	15	10	60	100
5	PEC	ME25*5	Elective – I	3	-	-	3	3	15	15	10	60	100
6	OEC	ME2506	Operations Research Lab	-	-	2	2	1	-	-	50	-	50
7	PCC	ME2507	Metrology & Quality Control Lab	-	-	2	2	1	-	-	25	25	50
8	PCC	ME2508	Heat Transfer Lab	-	-	2	2	1	-	-	25	25	50
9	PEC	ME25*9	Elective – I Lab	-	-	2	2	1	-	-	25	-	25
10	PCC	ME2510	Machine Design-I Lab	-	-	2	2	1			25	-	25
11	P/S/IT	ME2511	Mini Project	-	-	2	2	1	-	-	25	25	50
12	P/S/IT	ME2512	Industrial Training	-	-	-	-	1			50	-	50
			<b>Total</b>	<b>15</b>	<b>-</b>	<b>12</b>	<b>27</b>	<b>22</b>	<b>75</b>	<b>75</b>	<b>275</b>	<b>375</b>	<b>800</b>

L- Lecture

T-Tutorial

P-Practical

CT1- Class Test 1

TA/CA- Teacher Assessment/Continuous Assessment

CT2- Class Test 2

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

Course Category	HSMC (Hum., Soc. Sc, Mgmt.)	BSC (Basic Sc.)	ESC (Engg. Sc.)	PCC (Programme Core courses)	PEC (Programme Elective courses)	OEC (Open Elective courses from other discipline)	MCC (Mandatory Courses)	Project / Seminar / Industrial Training
Credits	--	--	--	12	04	04	--	02
Cumulative Sum	07	21	23	33	04	08	Yes	03

**PROGRESSIVE TOTAL CREDITS: 77+22= 99**

# Government College of Engineering, Karad

## SCHEME OF INSTRUCTION & SYLLABI

### Programme: Mechanical Engineering

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

#### Semester – VI

Sr. No.	Course Category	Course Code	Course Title	L	T	P	Contact Hrs / Wk	Course Credits	EXAM SCHEME				
									CT-1	CT-2	TA/CA	ESE	TOTAL
1	PCC	ME2601	Control Engineering	3	-	-	3	3	15	15	10	60	100
2	OEC	ME2602	Internal Combustion Engines	3	-	-	3	2	15	15	10	60	100
3	PEC	ME26*3	Elective – II	3	-	-	3	3	15	15	10	60	100
4	PCC	ME2604	Dynamics of Machine	3	-	-	3	3	15	15	10	60	100
5	PCC	ME2605	Manufacturing Engineering@	3	1	-	4	3	15	15	10	60	100
6	PCC	ME2606	Control Engineering Lab	-	-	2	2	1	-	-	25	25	50
7	OEC	ME2607	Internal Combustion Engines Lab	-	-	2	2	1	-	-	25	-	25
8	PCC	ME2608	Dynamics of Machine Lab	-	-	2	2	1	-	-	25	-	25
9	PCC	ME2609	Computer Integrated Manufacturing Lab and Workshop Technology	-	-	2	2	1			50	-	50
10	ESC	ME2610	CAD Lab-I	-	-	2	2	1	-	-	25	-	25
11	HSMC	ME2611	Technical Training & Technical Presentation		-		1	1	-	-	25	-	25
12	HSMC	ME2612	Industrial Psychology	3	-	-	3	3	15	15	10	60	100
			<b>Total</b>	<b>18</b>	<b>01</b>	<b>10</b>	<b>30</b>	<b>23</b>	<b>90</b>	<b>90</b>	<b>235</b>	<b>385</b>	<b>800</b>

L- Lecture

T-Tutorial

P-Practical

CT1- Class Test 1

TA/CA- Teacher Assessment/Continuous Assessment

CT2- Class Test 2

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

Course Category	HSMC (Hum., Soc. Sc, Mgmt.)	BSC (Basic Sc.)	ESC (Engg. Sc.)	PCC (Programme Core courses)	PEC (Programme Elective courses)	OEC (Open Elective courses from other discipline)	MCC (Mandatory Courses)	Project / Seminar / Industrial Training
Credits	04	--	01	12	03	03	--	--
Cumulative Sum	11	21	24	45	07	11	Yes	03

**PROGRESSIVE TOTAL CREDITS: 99+23=122**

# Government College of Engineering, Karad

## SCHEME OF INSTRUCTION & SYLLABI

### Programme: Mechanical Engineering

#### Scheme of Instructions: Final Year B. Tech. in Mechanical Engineering

#### Semester – VII

Sr. No.	Course Category	Course Code	Course Title	L	T	P	Contact Hrs / Wk	Course Credits	EXAM SCHEME				
									CT-1	CT-2	TA/CA	ESE	TOTAL
1	OEC	ME2701	Mechatronics	3	-	-	3	2	15	15	10	60	100
2	PEC	ME27*2	Elective – III	3	-	-	3	3	15	15	10	60	100
3	PEC	ME27*3	Elective -IV	3	-	-	3	3	15	15	10	60	100
4	PCC	ME2704	Noise and Vibration	3	-	-	3	3	15	15	10	60	100
5	PCC	ME2705	Machine Design – II	3	1	-	3	4	15	15	10	60	100
6	OEC	ME2706	Mechatronics Lab	-	-	2	2	1	-	-	50	-	50
7	PEC	ME27*7	Elective – III Lab	-	-	2	2	1	-	-	50	25	75
9	PCC	ME2709	Noise and Vibration Lab	-	-	2	2	1	-	-	25	25	50
11	P/S/IT	ME2711	Seminar	-	-	2	2	1	-	-	50	25	75
12	P/S/IT	ME2712	Industrial Training & Technical Presentation	-	1	-	1	1	-	-	50	-	50
			<b>Total</b>	<b>15</b>	<b>01</b>	<b>12</b>	<b>28</b>	<b>20</b>	<b>75</b>	<b>75</b>	<b>275</b>	<b>375</b>	<b>800</b>

L- Lecture

T-Tutorial

P-Practical

CT1- Class Test 1

TA/CA- Teacher Assessment/Continuous Assessment

CT2- Class Test 2

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

Course Category	HSMC (Hum., Soc. Sc, Mgmt.)	BSC (Basic Sc.)	ESC (Engg. Sc.)	PCC (Programme Core courses)	PEC (Programme Elective courses)	OEC (Open Elective courses from other discipline)	MCC (Mandatory Courses)	Project / Seminar / Industrial Training
Credits	--	--	--	08	07	03	--	02
Cumulative Sum	11	21	24	53	14	14	Yes	05

**PROGRESSIVE TOTAL CREDITS: 122+21 = 143**

# Government College of Engineering, Karad

## SCHEME OF INSTRUCTION & SYLLABI

### Programme: Mechanical Engineering

Scheme of Instructions: Final Year B. Tech. in Mechanical Engineering (**ACADEMIC MODE**)

Semester – VIII

Sr. No.	Course Category	Course Code	Course Title	L	T	P	Contact Hrs / Wk	Course Credits	EXAM SCHEME				
									CT-1	CT-2	TA/CA	ESE	TOTAL
1	OEC	ME2802	Finite Element Analysis	3	-	-	3	3	15	15	10	60	100
2	PEC	ME28*4	Elective – V	3	-	-	3	3	15	15	10	60	100
3	OEC	ME2805	Finite Element Analysis Lab	-	-	2	2	1	-	-	50	-	50
4	PEC	ME28*6	Elective – V Lab	-	-	2	2	1	-	-	50	50	100
5	P/S/IT	ME2807	Project	-	-	20	20	10	-	-	200	200	400
<b>Total</b>				<b>06</b>	<b>00</b>	<b>24</b>	<b>30</b>	<b>18</b>	<b>30</b>	<b>30</b>	<b>320</b>	<b>370</b>	<b>750</b>

L- Lecture

T-Tutorial

P-Practical

CT1- Class Test 1

TA/CA- Teacher Assessment/Continuous Assessment

CT2- Class Test 2

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

Course Category	HSMC (Hum., Soc. Sc, Mgmt.)	BSC (Basic Sc.)	ESC (Engg. Sc.)	PCC (Programme Core courses)	PEC (Programme Elective courses)	OEC (Open Elective courses from other discipline)	MCC (Mandatory Courses)	Project / Seminar / Industrial Training
Credits	00	--	--	---	04	04	--	10
Cumulative Sum	11	21	24	53	18	18	Yes	15

**PROGRESSIVE TOTAL CREDITS: 142+18= 160**

# Government College of Engineering, Karad

## SCHEME OF INSTRUCTION & SYLLABI

### Programme: Mechanical Engineering

Scheme of Instructions: Final Year B. Tech. in Mechanical Engineering (**INDUSTRY MODE**)

Semester – VIII

Sr. No.	Course Category	Course Code	Course Title	L	T	P	Contact Hrs / Wk	Course Credits	EXAM SCHEME				
									CT-1	CT-2	TA/CA	ESE	TOTAL
1	OEC	ME2802	(MOOC – 1)	-	-	-	-	4	-	-	-	-	-
2	PEC	ME2803	(MOOC – 2)	-	-	-	-	4	-	-	-	-	-
3	P/S/IT	ME2807	Project	-	-	-	-	10	-	-	200	200	400
<b>Total</b>				<b>00</b>	<b>00</b>	<b>00</b>	<b>00</b>	<b>18</b>	<b>-</b>	<b>-</b>	<b>200</b>	<b>200</b>	<b>400</b>

L- Lecture

T-Tutorial

P-Practical

CT1- Class Test 1

TA/CA- Teacher Assessment/Continuous Assessment

CT2- Class Test 2

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

Course Category	HSMC (Hum., Soc. Sc, Mgmt.)	BSC (Basic Sc.)	ESC (Engg. Sc.)	PCC (Programme Core courses)	PEC (Programme Elective courses)	OEC (Open Elective courses from other discipline)	MCC (Mandatory Courses)	Project / Seminar / Industrial Training	MOOCS
Credits	00	--	--	---	-	--	--	10	08
Cumulative Sum	10	21	24	53	18	14	Yes	15	08

**PROGRESSIVE TOTAL CREDITS: 142+18= 160**

List of PROGRAM ELECTIVE courses:

Elective – I (Theory and Lab)		Elective – II		Elective – III (Theory and Lab)		Elective – IV		Elective – V (Theory and Lab)	
ME2515	Non- Conventional Machining	ME2613	Additive Manufacturing	ME2714	Computational Fluid Dynamics	ME2813	Total Quality Management	ME2814	MEMS and NEMS
ME2525	Industrial Automation	ME2623	Welding Technology	ME2724	Maintenance Engineering & Condition Monitoring	ME2823	Industrial Engineering	ME2824	Tribology
ME2535	Refrigeration & Air conditioning	ME2633	Energy and Power Engineering	ME2734	Industrial Fluid Power	ME2833	Advanced Casting Technology	ME2834	Automobile Engineering

**COMMON INSTRUCTIONS**

**Departments shall suggest & execute**

1. Bridge courses for the *Students Admitting to Direct Second year via Lateral Entry scheme in the III semester.* (Diploma students)
2. Bridge courses for the students who may be *Admitted in Autonomous mode from University mode.*
3. MOOCs for students adapting *Industry Mode* to fulfil the credit requirements. Copy of certificates / grade card shall be submitted to Controller of Examinations, GCE Karad through Program Coordinator prior to ESE.