Government College of Engineering, Karad

(An Autonomous Institute of Government of Maharashtra)

Programme: Mechanical Engineering

Structure for second year to fourth year of B. Tech

Government College of Engineering, Karad

(An Autonomous Institute of Government of Maharashtra)

B. Tech. Second year - Mechanical Engineering

Curriculum Structure

Semester - III

Sr. No.	Course Category	Course Code	Course Title	L	T	P	Contact Hrs/Wk	Credits	EXAM SCHEME				
									CT1	CT2	TA/CA	ESE	TOTAL
1	BS	ME301	Engineering Mathematics III	3	1	-	4	4	15	15	10	60	100
2	PC	ME302	Electrical Technology	3	-	-	3	3	15	15	10	60	100
3	PC	ME303	Applied Thermodynamics	3	-	-	3	3	15	15	10	60	100
4	PC	ME304	Machine Tools and Processes	4	-	-	4	4	15	15	10	60	100
5	PC	ME305	Fluid Mechanics	3	-	-	3	3	15	15	10	60	100
6	PC	ME306	Electrical Technology Lab#	-	-	2#	1	1	-	-	25	-	25
7	PC	ME307	Applied Thermodynamics Lab	-	-	2	2	1	-	-	25	25*	50
8	PC	ME308	Machine Drawing Lab #	2	-	*2#*	3	3	-	-	50	-	50
9	PC	ME309	Fluid Mechanics Lab	-	-	2	2	1	-	-	25	25*	50
10	PC	ME310	Workshop Practice – III	-	-	2	2	1	-	-	25	-	25
11	MC	CC301	Environmental Studies	3	-	-	3	0(Audit)	15	15	10	60	100
			Total	21	1	8	30	24	90	90	210	410	800

CT1- Class Test 1 TA/CA- Teacher Assessment/Continuous Assessment

CT2- Class Test 2 ESE- End Semester Examination (For Laboratory End Semester Performance)

* ESE based on performance in Practical Examination # Practical to be conducted on alternate weeks

Credits distribution

Course Category	HS (Hum. And So. Sic)	BS (Basic Sc.)	ES (Engg. Sc.)	PC (Programme Core)	PE (Programme Electives)	OE (Open Elective)	MC (Mandatory Course)
Credits	-	4	-	20		-	-
Cumulative Sum	3	21	28	20	-	-	-

Government College of Engineering, Karad

(An Autonomous Institute of Government of Maharashtra)

B. Tech. Second year - Mechanical Engineering

Curriculum Structure

Semester - IV

Sr. No.	Course Category	Course Code	Course Title	L	T	P	Contact Hrs/Wk	Credits	EXAM SCHEME				
									CT1	CT2	TA/CA	ESE	TOTAL
1	ES	ME401	Applied Numerical Methods	3	1	-	4	3	15	15	10	60	100
2	PC	ME402	Analysis of Mechanical Elements	3	1	-	4	3	15	15	10	60	100
3	PC	ME403	Fluid and Turbo Machinery	3	-	-	3	3	15	15	10	60	100
4	PC	ME404	Theory of Machines – I @	3	-	-	3	3	15	15	10	60	100
5	PC	ME405	Metallurgy	3	-	-	3	3	15	15	10	60	100
6	PC	ME406	Fluid and Turbo Machinery Lab #	-	-	2 #	1	1	-	-	25	25*	50
7	PC	ME407	Theory of Machines – I Lab #	-	-	2 #	1	1	-	-	25	25*	50
8	PC	ME408	Computer Aided Drafting and Computer Graphics	1	-	2	3	2	-	-	50	-	50
9	PC	ME409	Metallurgy Lab	-	-	2	2	1	-	-	25	25*	50
10	PC	ME410	Workshop Practice – IV	-	-	2	2	1	-	-	50		50
11	HS	HS002	General Proficiency II	2		2	4	3			50		50
			Total	18	2	10	30	24	75	75	275	375	800

CT1- Class Test 1 TA/CA- Teacher Assessment/Continuous Assessment

CT2- Class Test 2 ESE- End Semester Examination (For Laboratory End Semester Performance)

* ESE based on performance in Practical Examination # Practical to be conducted at alternate weeks @ ESE paper of 3 hrs & CT for 1 ¼ hrs duration

Credits Distribution

Course Category	HS (Hum. And So. Sic)	BS (Basic Sc.)	ES (Engg. Sc.)	PC (Programme Core)	PE(Programme Electives)	OE (Open Elective)	MC (Mandatory Course)
Credits	3	-	3	18	-	-	-
Cumulative Sum	6	21	31	38	-	-	-

Government College of Engineering, Karad

(An Autonomous Institute of Government of Maharashtra)

B. Tech. Third year - Mechanical Engineering

Curriculum Structure

Semester - V

Sr. No.	Course Category	Course Code	Course Title	L	T	P	Contact Hrs/Wk	Credits	EXAM SCHEME				
									CT1	CT2	TA/CA	ESE	TOTAL
1	ES	ME501	Control Engineering	3	-	-	3	3	15	15	10	60	100
2	PC	ME502	Theory of Machine-II	3	-	-	3	3	15	15	10	60	100
3	PC	ME503	Heat and Mass Transfer	3	-	-	3	3	15	15	10	60	100
4	PC	ME504	Machine Design-I	3	1	-	4	4	15	15	10	60	100
5	PC	ME505	Manufacturing Engineering@	3	1	-	4	4	15	15	10	60	100
6	ES	ME506	Control Engineering Lab	-	-	2#	1	1	-	-	25	25*	50
7	PC	ME507	Theory of Machine-II Lab	-	-	2	2	1	-	-	25		25
8	PC	ME508	Heat and Mass Transfer Lab	-	-	2	2	1	-	-	25	25*	50
9	PC	ME509	Testing and Measurement	-	-	2#	1	1	-	-	25	-	25
10	PC	ME510	CAD-CAM Lab-1	1	-	2	3	2	-	-	50	-	50
11	PC	ME511	Minor Project	-	-	2	2	2	-	-	50	50	100
			Total	16	2	10	28	25	75	75	250	400	800

CT1- Class Test 1 TA/CA- Teacher Assessment/Continuous Assessment

CT2- Class Test 2 ESE- End Semester Examination (For Laboratory End Semester Performance)

* ESE based on performance in Practical Examination # Practical to be conducted at alternate weeks @ ESE paper of 3 Hrs & CT for 1 ¼ Hrs

Credits distribution

Course Category	HS (Hum. And So. Sic)	BS (Basic Sc.)	ES (Engg. Sc.)	PC (Programme Core)	PE (Programme Electives)	OE (Open Elective)	MC (Mandatory Course)
Credits	-	-	4	21	-	-	-
Cumulative Sum	6	21	35	59	-	-	-

Government College of Engineering, Karad

(An Autonomous Institute of Government of Maharashtra)

B. Tech. Third year - Mechanical Engineering

Curriculum Structure

Semester - VI

Sr. No.	Course Category	Course Code	Course Title	L	T	P	Contact Hrs/Wk	Credits	EXAM SCHEME				
									CT1	CT2	TA/CA	ESE	TOTAL
1	OE	OE621	Open Elective	2	-	2	4	3			50	50*	100
2	PC	ME602	Industrial Fluid Power	3	-	-	3	3	15	15	10	60	100
3	PC	ME603	Metrology and Quality Control	4	-	-	4	4	15	15	10	60	100
4	PC	ME604	Internal Combustion Engines	3	-	-	3	3	15	15	10	60	100
5	PC	ME605	Machine Design II	3	-	-	3	3	15	15	10	60	100
6	PC	ME606	Industrial Fluid Power Lab#	-	-	2#	1	1	-	-	50	0	50
7	PC	ME607	Metrology and Quality Control Lab	-	-	2	2	1	-	-	25	25*	50
8	PC	ME608	Internal Combustion Engines Lab	-	-	2	2	1	-	-	25	25*	50
9	PC	ME609	Machine Design-II Lab#	-	-	2#	1	1	-	-	25	-	25
10	PC	ME610	CIM & Workshop Practice V	1	-	2	3	2	-	-	75	-	75
11	HS	HS003	General Proficiency III	2	-	2	4	3			50	-	50
			Total	18	0	12	30	25	60	60	340	340	800

Industrial training of minimum two (2) weeks should be done after T.Y. (VIth Sem.) in summer vacation and it's assessment will be done in Final Year (VIIth- Sem.) based on report submitted .Work load of the assessment can be assigned to the project seminar guide.

CT1- Class Test 1 TA/CA- Teacher Assessment/Continuous Assessment

CT2- Class Test 2 ESE- End Semester Examination (For Laboratory End Semester Performance)

* ESE based on performance in Practical Examination # Practical to be conducted at alternate weeks

Credits Distribution

Course Category	HS (Hum. And So. Sic)	BS (Basic Sc.)	ES (Engg. Sc.)	PC (Programme Core)	PE(Programme Electives)	OE (Open Elective)	MC (Mandatory Course)
Credits	3	-	-	19	-	3	-
Cumulative Sum	9	21	35	78	-	3	-

Government College of Engineering, Karad

(An Autonomous Institute of Government of Maharashtra)

B. Tech. Fourth year - Mechanical Engineering

Curriculum Structure

Semester - VII

Sr. No.	Course Category	Course Code	Course Title	L	T	P	Contact Hrs/Wk	Credits	EXAM SCHEME				
									CT1	CT2	TA/CA	ESE	TOTAL
1	PC	ME701	Refrigeration and Air Conditioning	3	-	-	3	3	15	15	10	60	100
2	PC	ME702	Finite Element Analysis	3	-	-	3	3	15	15	10	60	100
3	PC	ME703	Automobile Engineering	3	-	-	3	3	15	15	10	60	100
4	PC	ME704	Mechanical System Design	3	1	-	4	4	15	15	10	60	100
5	PE	ME7*5	Elective-I	3			3	3	15	15	10	60	100
6	PC	ME706	Refrigeration and Air Conditioning-Lab	-	-	2	2	1	-	-	25	25#	50
7	PC	ME707	Finite Element Analysis Lab	-	-	2	2	1	-	-	25		25
8	PC	ME708	Automobile Engineering Lab			2	2	1	-	-	25		25
9	PC	ME709	Seminar	-		1	1	1	-	-	50	-	50
10	PC	ME710	Project Phase I	-	-	2	2	4			50	50**	100
11	PC	ME711	Industrial Training	-	-	-	-	2	-	-	50	-	50
			Total	15	1	9	25	26	75	75	275	375	800

CT1- Class Test 1; TA/CA- Teacher Assessment/Continuous Assessment

CT2- Class Test 2; ESE- End Semester Examination (For Laboratory End Semester Performance)

ESE based on performance in Practical Examination; * Elective I list is provided at the end of the Structure;

****** For Project Phase-I ESE is based on the presentation showing progress of the project work

Credits distribution

Course Category	HS (Hum. And So. Sic)	BS (Basic Sc.)	ES (Engg. Sc.)	PC (Programme Core)	PE (Programme Electives)	OE (Open Elective)	MC (Mandatory Course)
Credits	-	-	-	23	3	-	-
Cumulative Sum	9	21	35	101	3	3	-

Government College of Engineering, Karad

(An Autonomous Institute of Government of Maharashtra)

B. Tech. Fourth year - Mechanical Engineering

Curriculum Structure

Semester - VIII

Sr. No.	Course Category	Course Code	Course Title	L	T	P	Contact Hrs/Wk	Credits	EXAM SCHEME				
									CT1	CT2	TA/CA	ESE	TOTAL
1	ES	ME801	Mechatronics	3	-	-	3	3	15	15	10	60	100
2	PC	ME802	Noise and Vibration	3	-	-	3	3	15	15	10	60	100
3	PE	ME8*3	Elective II	3	-	-	3	3	15	15	10	60	100
4	PE	ME8*4	Elective III	3	-	-	3	3	15	15	10	60	100
5	PC	ME805	Energy and Power Engineering	3	-	-	3	3	15	15	10	60	100
6	ES	ME806	Mechatronics Lab	-	-	2	2	1	-	-	25	-	25
7	PC	ME807	Noise and Vibration Lab	-	-	2	2	1	-	-	25	25	50
8	PE	ME808	Elective II Lab	-	-	2	2	1	-	-	25	-	25
9	PC	ME809	Project Phase II	-	-	5	5	8	-	-	100	100**	200
			Total	15	-	11	26	26	75	75	225	425	800

CT1- Class Test 1 TA/CA- Teacher Assessment/Continuous Assessment

CT2- Class Test 2 ESE- End Semester Examination (For Laboratory End Semester Performance)

*Elective II & Elective III list provided at the end of the structure # Practical to be conducted at alternate weeks

** ESE based on the demonstration of the project work

Credits Distribution

Course Category	HS (Hum. And So. Sic)	BS (Basic Sc.)	ES (Engg. Sc.)	PC (Programme Core)	PE (Programme Electives)	OE (Open Elective)	MC (Mandatory Course)
Credits	-	-	4	15	7	-	-
Cumulative Sum	9	21	39	116	10	3	-

Government College of Engineering, Karad

(An Autonomous Institute of Government of Maharashtra)

Programme: Mechanical Engineering

List of Electives offered by Mechanical Engineering Department

Open Elective	Elective I	Elective II	Elective III
Semester - VI	**Semester - VII**	**Semester -VIII**	**Semester - VIII**
OE621 Condition Monitoring	**ME715** Industrial Product Design	**ME813**Industrial Automation & Robotics	**ME814** Advanced Foundry Processes
OE621 Micro Electro Mechanical System	**ME725** Jig and Fixture Design	**ME823** Machine Tool Design	**ME824-** Industrial Engineering
OE621 Industrial Automation	**ME735** Total Quality Management	**ME833**Computational Fluid Dynamics	**ME834** Advanced Refrigeration
	ME745 Advanced I.C. Engines	**ME843** Operation Research	**ME844** Engineering Economics & Financial Management

Self-study:

Self study is study of something by the student himself/herself through books, reports, online resources, etc. without direct supervision of a teacher. It is a way of studying and figuring out things by one's own efforts. In the autonomous syllabus, it is proposed to incorporate this technique and the guidelines for implementing the same are as under.

1. The subject teacher should identify a part of a unit of the syllabus and distribute the same amongst individual students or groups of students as self study material.

2 The students will present the self study material before other students and faculty and will be assessed on the basis of their comprehension and presentation.

3 This will form a part of the teacher assessment (TA). 4

Record of the same is kept by the concerned teacher