Government College of Engineering, Karad

SCHEME OF INSTRUCTION & SYLLABI

Programme: Electrical Engineering

Proposed Scheme of Instructions: Second Year B. Tech. in Electrical Engineering

Semester – III (w.e.f. 2024-25)

Sr. No.	Course Category	Course Code	Course Title	L	T	P	Contact Hrs/Wk	Course Credits	EXAM SCHEME			
									MSE	ISE	ESE	TOTAL
1	PCC	EE3301	Signals & Systems	3	1	-	4	4	20	20	60	100
2	PCC	EE3302	DC Machines and Transformer	3	--	--	3	3	20	20	60	100
3	PCC	EE3303	Measurement and Instrumentation	3	--	--	3	3	20	20	60	100
4	MDM	##	Multi-disciplinary Minor – 01	2	--	--	2	2	20	20	60	100
5	OE	$D/O/I	Open Elective -01	3	--	--	3	3	20/NA/NA	20/NA/50	60/100/50	100
6	HSSM	EE3306	Universal Human Values	2	--	--	2	2	-	50	-	50
7	HSSM	EE3307	Economics for Engineer	2	--	--	2	2	-	50	-	50
8	PCC	EE3308	DC Machines and Transformer Lab	--	--	2	2	1	-	50	25	75
9	PCC	EE3309	Measurement and Instrumentation Lab	--	--	2	2	1	--	50	25	75
10	OE	$D/O/I	Open Elective -01 Lab	--	--	2	2	1	-	25	25	50
			Total	**18**	**1**	**6**	**25**	**22**	**100**	**325**	**375**	**800**

***Note: Open Elective-01 (OE) can be offered as offline/Online mode (MOOC).**

Note: S D/O/I- Any course offered by Department/Online/Institute OE bucket. ##:- Any Course offered from Dept. /Inst. level MDM buckets.

L- Lecture T-Tutorial P-Practical

MSE- Mid Semester Examination ISE/CA- In Semester Evaluation/Continuous Assessment

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 (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	-	06	-	04	-	-
Cumulative Sum	16	14	16	-	06	04	08	-	02

Head of Department
Electrical Engineering Department
Goverment College of Engineering, Karad.

PROGRESSIVE TOTAL CREDITS: 44+22 =66

Government College of Engineering, Karad

SCHEME OF INSTRUCTION & SYLLABI

Programme: Electrical Engineering

Proposed Scheme of Instructions: Second Year B. Tech. in Electrical Engineering

Semester – IV(w.e.f. 2024-25)

Sr. No.	Course Category	Course Code	Course Title	L	T	P	Contact Hrs/Wk	Course Credits	EXAM SCHEME			
									MSE	ISE	ESE	TOTAL
1	PCC	EE3401	AC Machines	3	--	--	3	3	20	20	60	100
2	PCC	EE3402	Analog and Digital Electronics	3	--	--	3	3	20	20	60	100
3	PCC	EE3403	Power Electronics	3	1	--	4	4	20	20	60	100
4	MDM	##	Multi-disciplinary Minor – 02	2	--	--	2	2	20	20	60	100
5	OE	$D/O/I	Open Elective -02	2	--	--	2	2	20/NA/NA	20/NA/50	60/10 0/50	100
6	HSSM	EE3406	Strategic Management	2	--	--	2	2	-	50	-	50
7	HSSM	EE3407	Professional Ethics	2	--	--	2	2	-	25	-	25
8	PCC	EE3408	AC Machines Lab	--	--	2	2	1	-	50	25	75
9	PCC	EE3409	Analog and Digital Electronics Lab	--	--	2	2	1	-	25	25	50
10	PCC	EE3410	Power Electronics Lab	--	--	2	2	1	--	25	25	50
11	BSC	EE3411	Environmental Science	2	--	--	2	Audit		-	-	-
12	EL	EE3412	Community Engagement Project	--	--	2	2	1	-	50	-	50
			Total	**19**	**1**	**8**	**28**	**22**	**100**	**325**	**375**	**800**

*Note: Open Elective-02 (OE) can be offered as offline/Online mode (MOOC).

Note: $ D/O/I- Any course offered by Department/Online/Institute OE bucket. ##:- Any Course offered from Dept. /Inst. level MDM buckets.

L- Lecture T-Tutorial P-Practical

MSE- Mid Semester Examination ISE/CA- In Semester Evaluation/Continuous Assessment

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	-	-	13	-	04	-	04	01	-
Cumulative Sum	**16**	**14**	**29**	**-**	**10**	**04**	**12**	**01**	**02**

PROGRESSIVE TOTAL CREDITS: 66+22 =88

Exit Course

Exit option : Award of UG Diploma in Major with 88 credits and an additional 8 creditsfrom following Exit Courses				
Sr. No	**Course Code**	**Course Title**	**Mode**	**Credits**
1	EE-EC-0201	AutoCAD for Electrical	Online/offline certification Course	8
		OR		
2	EE-EC-0202	Industrial Electrical systems installation and maintenance		8

Head of Department
Electrical Engineering Department
Goverment College of Engineering, Karad.

Government College of Engineering, Karad

SCHEME OF INSTRUCTION & SYLLABI

Programme: Electrical Engineering

Proposed Scheme of Instructions: Third Year B. Tech. in Electrical Engineering

Semester – V

Sr. No.	Course Category	Course Code	Course Title	L	T	P	Contact Hrs/Wk	Course Credits	EXAM SCHEME			
									MSE	ISE	ESE	TOTAL
1	PCC	EE3501	Elements of Power System	3	--	--	3	3	20	20	60	100
2	PCC	EE3502	Control System Analysis	3	--	--	3	3	20	20	60	100
3	PCC	EE3503	Microcontroller	3	--	--	3	3	20	20	60	100
4	PEC	EE35*4	Program 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	EE3507	Control System Analysis Lab	--	--	2	2	1	-	25	25	50
8	PCC	EE3508	Microcontroller Lab	--	--	2	2	1	-	25	25	50
9	PEC	EE3509	Program Elective Lab	--	--	2	2	1	-	25	--	25
10	MDM	##	Multi-disciplinary Minor– 03 Lab	--	--	2	2	1	-	50	--	50
11	VSEC	EE3511	Numerical Computational Methods	--	--	2	2	1		25	--	25
			Total	**17**	**--**	**10**	**27**	**22**	**120**	**270**	**410**	**800**

***Note: Open Elective-03 (OE) should be offered as offline/Online mode (MOOC).**

Note: $ D/O/I- Any course offered by Department/Online/Institute OE bucket. ##:- Any Course offered from Dept. /Inst. level MDM buckets.

L- Lecture T-Tutorial P-Practical

MSE- Mid Semester Examination ISE/CA- In Semester Evaluation/Continuous Assessment

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	-	-	**11**	**04**	**06**	**01**	-	-	-
Cumulative Sum	**16**	**14**	**40**	**04**	**16**	**05**	**12**	**01**	**02**

Head of Department
Electrical Engineering Department
Goverment College of Engineering, Karad

PROGRESSIVE TOTAL CREDITS: 88+22=110

Government College of Engineering, Karad

SCHEME OF INSTRUCTION & SYLLABI

Programme: Electrical Engineering

Proposed Scheme of Instructions: Third Year B. Tech. in Electrical Engineering

Semester – VI

Sr. No.	Course Category	Course Code	Course Title	L	T	P	Contact Hrs/Wk	Course Credits	EXAM SCHEME			
									MSE	ISE	ESE	TOTAL
1	PCC	EE3601	Control System Design	3	--	--	3	3	20	20	60	100
2	PCC	EE3602	Power system Analysis	3	1	--	4	4	20	20	60	100
3	PCC	EE3603	Electrical Drives	3	--	--	3	3	20	20	60	100
4	PEC	EE36*4	Program Elective -02	3	--	--	3	3	20	20	60	100
5	PEC	EE36*5	Programme Elective-03	3	--	--	3	3	20	20	60	100
6	MDM	##	Multi-disciplinary Minor – 04	2	--	--	2	2	20	20	60	100
7	PCC	EE3607	Electrical Drives Lab	--	--	2	2	1	-	50	25	75
8	PCC	EE3608	Control System Design Lab	--	--	2	2	1	-	50	25	75
9	EL	EE3609	Project-I	--	--	4	4	2	-	50	--	50
			Total	**17**	**1**	**8**	**26**	**22**	**120**	**270**	**410**	**800**

##:- Any Course offered from Dept. /Inst. level MDM buckets.

L- Lecture T-Tutorial P-Practical

MSE- Mid Semester Examination ISE/CA- In Semester Evaluation/Continuous Assessment

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 (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**	**06**	**02**	--	-	**02**	-
Cumulative Sum	**16**	**14**	**52**	**10**	**18**	**05**	**12**	**03**	**02**

PROGRESSIVE TOTAL CREDITS: 110+22 =132

Head of Department
Electrical Engineering Department
Goverment College of Engineering, Karad.

Exit option : Award of B. Vocational in Major with 132 credits and an additional 8 credits from following Exit Courses				
Sr. No	**Course Code**	**Course Title**	**Mode**	**Credits**
1	EE-EC-0301	Installation of Transformer	Online/offline certification Course	8
OR				
2	EE-EC-0302	Industrial Electrical Systems		8

Head of Department
Electrical Engineering Department
Goverment College of Engineering, Karad.

Government College of Engineering, Karad

SCHEME OF INSTRUCTION & SYLLABI

Programme: Electrical Engineering

Proposed Scheme of Instructions: Final Year B. Tech. in Electrical Engineering

Semester – VII

Sr. No.	Course Category	Course Code	Course Title	L	T	P	Contact Hrs/Wk	Course Credits	EXAM SCHEME			
									MSE	ISE	ESE	TOTAL
1	PCC	EE3701	Switchgear and Protection	3	--	--	3	3	20	20	60	100
2	PCC	EE3702	Embedded Systems	3	--	--	3	3	20	20	60	100
3	PEC	EE37*3	Program Elective -04	3	--	--	3	3	20	20	60	100
4	EL	EE3704	Research Methodology	3	--	--	3	3	20	20	60	100
5	MDM	##	Multi-disciplinary Minor – 05	2	--	--	2	2	20	20	60	100
6	PCC	EE3706	Switchgear and Protection Lab	-	-	2	2	1		25	25	50
7	PCC	EE3707	Embedded Systems Lab	-	-	2	2	1		25	25	50
8	EL	EE3708	Project Phase - II	--	--	12	12	6	-	100	100	200
			Total	**14**	**0**	**16**	**30**	**22**	**100**	**250**	**450**	**800**

##:- Any Course offered from Dept. /Inst. level MDM buckets.

L- Lecture T-Tutorial P-Practical

MSE- Mid Semester Examination ISE/CA- In Semester Evaluation/Continuous Assessment

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**	**03**	**02**	-	-	**09**	-
Cumulative Sum	**16**	**14**	**60**	**13**	**20**	**05**	**12**	**12**	**02**

PROGRESSIVE TOTAL CREDITS: 132+22 =154

Head of Department
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Goverment College of Engineering, Karad.

Government College of Engineering, Karad

SCHEME OF INSTRUCTION & SYLLABI

Programme: Electrical Engineering

Proposed Scheme of Instructions: Final Year B. Tech. in Electrical Engineering

Semester – VIII (Academic Mode)

Sr. No.	Course Category	Course Code	Course Title	L	T	P	Contact Hrs/Wk	Course Credits	EXAM SCHEME			
									MSE	ISE	ESE	TOTAL
1	PCC	EE3801	Utilization and Traction	3	--	--	3	3	20	20	60	100
2	PCC	EE3802	Electric and hybrid vehicles	3	--	--	3	3	20	20	60	100
3	PEC	EE38*3	Program Elective -05	3	--	--	3	3	20	20	60	100
4	PEC	EE38*4	Program Elective -06	3	--	--	3	3	20	20	60	100
5	MDM	##	Multi-disciplinary Minor-06	2	--	--	2	2	20	20	60	100
6	PCC	EE3806	Electric and hybrid vehicles Lab	--	--	2	2	1	-	50	50	100
7	EL	EE3807	Project Phase - III	--	--	14	14	7	-	100	100	200
			Total	**14**	**0**	**16**	**30**	**22**	**100**	**250**	**450**	**800**

##:- Any Course offered from Dept. /Inst. level MDM buckets.

L- Lecture T-Tutorial P-Practical

MSE- Mid Semester Examination ISE/CA- In Semester Evaluation/Continuous Assessment

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	-	-	**07**	**06**	**02**	-	-	**07**	-
Cumulative Sum	**16**	**14**	**67**	**19**	**22**	**05**	**12**	**19**	**02**

PROGRESSIVE TOTAL CREDITS = 176

Head of Department
Electrical Engineering Department
Goverment College of Engineering, Karad

Government College of Engineering, Karad

SCHEME OF INSTRUCTION & SYLLABI

Programme: Electrical Engineering

Proposed Scheme of Instructions: Final Year B. Tech. in Electrical Engineering

Semester – VIII (Industry Mode)

Sr. No.	Course Category	Course Code	Course Title	L	T	P	Contact Hrs/Wk	Course Credits	EXAM SCHEME			
									MSE	ISE	ESE	TOTAL
1	MOOC	EE3808	MOOC - I	--	--	--	-	4	--	--	100	100
2	MOOC	EE3809	MOOC - II	-	-	-	-	4	--	--	100	100
3	MDM	##	Multi-disciplinary Minor – 06 (MOOC)	-	--	--	-	2	--	-	100	100
4	EL	EE3811	Internship	--	--	--	-	12	-	250	250	500
			Total	-	-	-	-	**22**	--	**250**	**550**	**800**

##:- Any Course offered from Dept. /Inst. level MDM buckets.

L- Lecture T-Tutorial P-Practical

MSE- Mid Semester Examination ISE/CA- In Semester Evaluation/Continuous Assessment

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(MOOC)**	--	**02**	-	-	**12**	-
Cumulative Sum	**16**	**14**	**68**	**13**	**22**	**05**	**12**	**24**	**02**

PROGRESSIVE TOTAL CREDITS=176

Head of Department
Electrical Engineering Department
Goverment College of Engineering, Karad.

Government College of Engineering, Karad

SCHEME OF INSTRUCTION & SYLLABI

Programme: Electrical Engineering

Proposed Scheme of Instructions: Final Year B. Tech. in Electrical Engineering

Semester – VIII (Research Mode)

Sr. No.	Course Category	Course Code	Course Title	L	T	P	Contact Hrs/Wk	Course Credits	EXAM SCHEME			
									MSE	ISE	ESE	TOTAL
1	MOOC	EE3812	MOOC - I	--	--	--	-	4	--	--	100	100
2	MOOC	EE3814	MOOC - II	-	-	-	-	4	--	--	100	100
5	MDM	##	Multi-disciplinary Minor 06	2	--	--	2	2	20	20	60	100
3	EL	EE3816	Research Project	--	--	24	24	12	-	250	250	500
			Total	**2**	**-**	**24**	**26**	**22**	**20**	**270**	**510**	**800**

##:- Any Course offered from Dept. /Inst. level MDM buckets.

L- Lecture T-Tutorial P-Practical

MSE- Mid Semester Examination ISE/CA- In Semester Evaluation/Continuous Assessment

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(MOOC)**	--	**02**	-	-	**12**	-
Cumulative Sum	**16**	**14**	**68**	**13**	**22**	**05**	**12**	**24**	**02**

PROGRESSIVE TOTAL CREDITS =176

Head of Department
Electrical Engineering Department
Goverment College of Engineering, Karad

List of Electives :

Specialization	Automation and Control	Power Engineering	Power Electronics& Drives	Energy Systems
Elective-I	EE3514: Automation and Control	EE3524:Digital Protection	EE3534: High Power Converters	EE3544: Renewable Energy Systems
Elective-II	EE3614:Digital Control	EE3624:Power Plant Engineering	EE3634:Special purpose machines	EE3644:Energy Storage
Elective-III	EE3615:Intelligent Control	EE3625:Restructured Power system	EE3635:PE Converters for renewable Energy Integration	EE3645: Energy Audit
Elective-IV	EE3713:System modelling from control perspective	EE3723:Power Quality	EE3733:FACTS	EE3743:Design of Energy efficient machines
Elective-V	EE3813:Advanced Control System	EE3823: HV Engineering	EE3833:Advanced Electric Vehicles	EE38443:Generation planning and load Forecasting
Elective-VI	EE3814:AIML and it's applications in control systems	EE3824: Cyber security of power system	EE3834:AI-ML and it's applications in EV	EE3844:AIML and it's applications for Energy Systems

Head of Department
Electrical Engineering Department
Goverment College of Engineering, Karad.

List of Multi-disciplinary Minor (Departmental)

Offered by Department	Sr. No.	Course category	Course code & Title	Semester
Civil Engineering	1	Multi-disciplinary Minor - 01	CE3305: Basic civil engineering	III
	2	Multi-disciplinary Minor – 02	CE3404: Building materials	IV
	3	Multi-disciplinary Minor – 03	CE3505: Building planning and drawing	V
	4	Multi-disciplinary Minor Lab – 03	CE3510: Building planning and drawing lab	V
	5	Multi-disciplinary Minor – 04	CE3606: Building services	VI
	6	Multi-disciplinary Minor – 05	CE3705: Smart building I	VII
	7	Multi-disciplinary Minor - 06	CE3805: Smart building II	VIII
Mechanical Engineering	1	Multi-disciplinary Minor - 01	ME3304: Material Science	III
	2	Multi-disciplinary Minor – 02	ME3405: Analysis of Mechanical elements	IV
	3	Multi-disciplinary Minor – 03	ME3505: Thermal Engineering	V
	4	Multi-disciplinary Minor Lab – 03	ME3509: Mechanical Engineering Lab	V
	5	Multi-disciplinary Minor – 04	ME3606: Manufacturing Engineering	VI
	6	Multi-disciplinary Minor – 05	ME3705: Energy Conservation and Management	VII
	7	Multi-disciplinary Minor - 06	ME3805: Mechanical System Design	VIII
Electrical Engineering	1	Multi-disciplinary Minor - 01	EE3304: DC Machines and Transformers	III
	2	Multi-disciplinary Minor – 02	EE3404: AC Machines	IV
	3	Multi-disciplinary Minor – 03	EE3505: Basics of Power System	V
	4	Multi-disciplinary Minor Lab – 03	EE3510: Electrical Machine Lab	V

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	5	Multi-disciplinary Minor – 04	EE3606: Electrical Drives	VI
	6	Multi-disciplinary Minor – 05	EE3705: Switchgear and Protection	VII
	7	Multi-disciplinary Minor - 06	EE3805: Energy Management and Audit /Electrical Vehicle	VIII
Information Technology	1	Multi-disciplinary Minor - 01	IT3305: Basics of Data Structure	III
	2	Multi-disciplinary Minor – 02	IT3404:Software Essentials (OS and Application Software)	IV
	3	Multi-disciplinary Minor – 03	IT3505:Database Management Systems	V
	4	Multi-disciplinary Minor Lab – 03	IT3511:Database Management Systems Lab	V
	5	Multi-disciplinary Minor – 04	IT3604:Basics of AI and ML	VI
	6	Multi-disciplinary Minor – 05	IT3705:Python Programming	VII
	7	Multi-disciplinary Minor - 06	IT3805:Web Technology	VIII
Electronics & Telecommunications Engineering	1	Multi-disciplinary Minor - 01	EX3304: Electronic Circuits	III
	2	Multi-disciplinary Minor – 02	EX3404: Digital Electronics	IV
	3	Multi-disciplinary Minor – 03	EX3505: Signals & Systems	V
	4	Multi-disciplinary Minor Lab – 03	EX3510: Signals & Systems Laboratory	V
	5	Multi-disciplinary Minor – 04	EX3606: Communication System	VI
	6	Multi-disciplinary Minor – 05	EX3706: Microprocessor & Microcontroller	VII
	7	Multi-disciplinary Minor - 06	EX3805: Mobile Communication	VIII

Head of Department
Electrical Engineering Department
Goverment College of Engineering, Karad.

List of Multi-disciplinary Minor (Institute Level-Industrial)

Stream/Technology	Sr.No.	Course category	Course code & Title	Semester
Electrical Vehicle (Electrical Engineering-Institute Level-Industrial)	1	Multi-disciplinary Minor - 01	IMI3311: Foundation of EV and Hybrid Vehicle	III
	2	Multi-disciplinary Minor – 02	IMI3412: EV Battery Technology and Powertrain Development	IV
	3	Multi-disciplinary Minor – 03	IMI3513: EV Power Electronics and Embedded System	V
	4	Multi-disciplinary Minor Lab – 03	IMI3514: Electric Vehicle Lab	V
	5	Multi-disciplinary Minor – 04	IMI3615: EV Charging Infrastructure, Vehicle Testing & Homologation	VI
	6	Multi-disciplinary Minor – 05	IMI3716: EV Vehicle Design, Analysis and Control	VII
	7	Multi-disciplinary Minor - 06	IMI3817: EV PCB Design & Data Analytics	VIII
Image Processing (ETC-Institute Level-Industrial)	1	Multi-disciplinary Minor - 01	IMI3321:Fundamentals of Image.	III
	2	Multi-disciplinary Minor – 02	IMI3422: Basics of Image Processing for Healthcare	IV
	3	Multi-disciplinary Minor – 03	IMI3523:Particle Size Analysis using Image Processing	V
	4	Multi-disciplinary Minor Lab – 03	IMI3524: Particle Size Analysis using Image Processing Lab	V
	5	Multi-disciplinary Minor – 04	IMI3625: Particle Characterization in Healthcare	VI
	6	Multi-disciplinary Minor – 05	IMI3726:Particle Characterization in Formulation and Reverse Engineering	VII
	7	Multi-disciplinary Minor - 06	IMI3827:Project	VIII
Electrical Vehicle (Mechanical Engineering-Institute Level-Industrial)	1	Multi-disciplinary Minor - 01	IMI3331:Foundation of EV and Hybrid Vehicle	III
	2	Multi-disciplinary Minor – 02	IMI3432:Automotive Mechanics for EV	IV
	3	Multi-disciplinary Minor – 03	IMI3533:EV Design, Development, Analysis and Control	V
	4	Multi-disciplinary Minor Lab – 03	IMI3534:3D modelling and simulation Lab	V
	5	Multi-disciplinary Minor – 04	IMI3635:EV Product Development, Homologation and Hydrogen FCEV	VI
	6	Multi-disciplinary Minor – 05	IMI3736:EV FEA ANALYSIS	VII
	7	Multi-disciplinary Minor - 06	IMI387:CYBER SECURITY AND DATA ANALYSIS	VIII

Head of Department
Electrical Engineering Department
Goverment College of Engineering, Karad.

List of Multi-disciplinary Minor (Institute Level-Other Discipline)

Offered by Department	Sr. No.	Course category	Course code & Title	Semester
Law	1	Multi-disciplinary Minor - 01	IMO3311: Constitutional Law	III
	2	Multi-disciplinary Minor – 02	IMO3412: Human Rights & International Law	IV
	3	Multi-disciplinary Minor – 03	IMO3513: Environmental Law	V
	4	Multi-disciplinary Minor Lab – 03	IMO3514: Environmental Law Field Study	V
	5	Multi-disciplinary Minor – 04	IMO3615: Civil Procedure Code (CPC)	VI
	6	Multi-disciplinary Minor – 05	IMO3716: Intellectual Property Law	VII
	7	Multi-disciplinary Minor - 06	IMO3817: Cyber Law	VIII
Management & Finance	1	Multi-disciplinary Minor - 01	IMO3321: Microeconomics	III
	2	Multi-disciplinary Minor – 02	IMO3422: Corporate Social Responsibility	IV
	3	Multi-disciplinary Minor – 03	IMO3523: Principles of Accounting	V
	4	Multi-disciplinary Minor Lab – 03	IMO3524: Principles of Accounting Lab	V
	5	Multi-disciplinary Minor – 04	IMO3625: Business Intelligence	VI
	6	Multi-disciplinary Minor – 05	IMO3726: Marketing Research	VII
	7	Multi-disciplinary Minor - 06	IMO3827: Corporate Governance and Business Ethics	VIII

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Civil Engineering Department

List of Open Elective (Offline Mode)

Open Elective	Course Code	Course Title
Open Elective-I	CE3316	Environmental Chemistry
Open Elective-I lab	CE3321	Environmental Chemistry Lab
Open Elective-II	CE3415	Project Management
Open Elective-III	CE3516	Environmental Impact Assessment

List of Open Elective (MOOCs Mode)

Open Elective	Course Code	Course Title
Open Elective-I	CE3326	Environmental Chemistry
Open Elective-I lab	CE3331	Environmental Chemistry Lab
Open Elective-II	CE3425	Project Management
Open Elective-III	CE3526	Environmental Impact Assessment

Mechanical Engineering Department

List of Open Elective (Offline Mode)

Open Elective	Course Code	Course Title
Open Elective-I	ME3315	Industrial Instrumentation
Open Elective-I lab	ME3312	Industrial Instrumentation Lab
Open Elective-II	ME3416	Industrial Safety
Open Elective-III	ME3516	Entrepreneurship Development

List of Open Elective (MOOCs Mode)

Open Elective	Course Code	Course Title
Open Elective-I	ME3325	Control systems
Open Elective-I lab	ME3322	Instrumentation and Control Lab
Open Elective-II	ME3426	Industrial Safety
Open Elective-III	ME3526	Entrepreneurship

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List of Open Elective (Offline Mode)

Open Elective	Course Code	Course Title
Open Elective-I	EE3315	Sustainable Energy Systems
Open Elective-I lab	EE3316	Sustainable Energy Systems Lab
Open Elective-II	EE3417	Robotics and Automation
Open Elective-III	EE3518	Optimization Techniques or Electrical vehicle system

List of Open Elective (MOOCs Mode)

Open Elective	Course Code	Course Title
Open Elective-I	EE3325	Energy Systems Engineering
Open Elective-I lab	EE3326	Energy Systems Engineering Lab
Open Elective-II	EE3427	Power System Engineering
Open Elective-III	EE3528	Optimization Techniques

Electronics & Telecommunications Engineering Department

List of Open Elective (Offline Mode)

Open Elective	Course Code	Course Title
Open Elective-I	EX3315	Digital System Design
Open Elective-I lab	EX3310	Digital System Design Laboratory
Open Elective-II	EX3415	Microcontroller and Interfacing
Open Elective-III	EX3516	Embedded Systems and RTOS

List of Open Elective (MOOCs Mode)

Open Elective	Course Code	Course Title
Open Elective-I	EX3325	Digital Electronics
Open Elective-I lab	EX3320	Digital Electronics Laboratory
Open Elective-II	EX3425	Microprocessor and Microcontroller
Open Elective-III	EX3526	Embedded Systems

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Information Technology Department

List of Open Elective (Offline Mode)

Open Elective	Course Code	Course Title
Open Elective-I	IT3316	Internet of Things
Open Elective-I lab	IT3311	Internet of Things Lab
Open Elective-II	IT3415	Robotics and Automation
Open Elective-III	IT3516	Augmented Reality and Virtual Reality

List of Open Elective (MOOCs Mode)

Open Elective	Course Code	Course Title
Open Elective-I	IT3326	Sensors and Internet of Things
Open Elective-I lab	IT3321	Sensors and Internet of Things Lab
Open Elective-II	IT3425	Robotics and Automation
Open Elective-III	IT3526	Multimedia and Reality

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Institute Level- Industrial orientated Open Elective

AIDSML

Open Elective	Course Code	Course Title	Sem
Open Elective-I	IOE3311	Foundations of AI, Data Science, and Data Engineering"	III
Open Elective-I lab	IOE3312	Foundations for AI, Data Science, and Data Engineering Lab"	III
Open Elective-II	IOE3413	Advanced AI Integration	IV
Open Elective-III	IOE3514	AI Applications and Emerging Technologies	V

AIOT

Open Elective	Course Code	Course Title	Sem
Open Elective-I	IOE3321	IoT Hardware and Sensors	III
Open Elective-I lab	IOE3322	IoT Hardware and Sensors lab	III
Open Elective-II	IOE3423	Fundamentals of AIoT	IV
Open Elective-III	IOE3524	Cloud Services for IoT	V

ARVR

Open Elective	Course Code	Course Title	Sem
Open Elective-I	IOE3331	AR/VR Application Development	III
Open Elective-I lab	IOE3332	AR/VR Application Development lab	III
Open Elective-II	IOE3433	Fundamentals of Real-time Rendering	IV
Open Elective-III	IOE3534	Game Development with Unreal Engine	V

ERP-SAP

Open Elective	Course Code	Course Title	Sem
Open Elective-I	IOE3341	ABAP Programming for SAP HANA	III
Open Elective-I lab	IOE3342	ABAP programming in Eclipse LAB	III
Open Elective-II	IOE3443	SAP HANA	IV
Open Elective-III	IOE3544	SAP PEOJECT	V

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BASKET OF BASIC SCIENCES COURSES (BSC)

LIST OF BSC COURSES OFFERED SEMESTER WISE						
SEMESTER I						
Sr. No.	**Course Code**	**Course**	**L**	**T**	**P**	**Credits**
1.	EE3101	Engineering Chemistry	3	--	--	**3**
2.	EE3102	Linear algebra and Calculus	3	1	--	**4**
3.	EE3106	Engineering Chemistry Lab	--	--	2	**1**
SEMESTER II						
4.	EE3201	Differential and Integral Calculus	3	--	--	**4**
5.	EE3202	Engineering Physics	3	1	--	**3**
6.	EE3207	Engineering Physics Lab	--	--	2	**1**
SEMESTER IV						
7.	EE3411	Environmental Science	--	--	--	**--**
					TOTAL	**16**

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BASKET OF ENGINEERING SCIENCE COURSES (ESC)

LIST OF ESC COURSES OFFERED SEMESTER WISE						
SEMESTER I						
Sr. No.	**Course Code**	**Course**	**L**	**T**	**P**	**Credits**
1.	EE3103	Basic Electronics Engineering	3	--	--	3
2.	EE3104	Programming for problem solving	3	--	_	3
3.	EE3105	Design Thinking	1	--	2	2
4.	EE3107	Programming for problem solving Lab	--	--	2	1
5.	EE3111	Basic Electronics Engineering Lab	--	--	2	1
SEMESTER II						
4.	EE3203	Engineering Mechanics	3	--	--	3
5.	EE3206	Computer Aided Design and Drafting Lab	-	-	2	1
					TOTAL	14

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BASKET OF PROGRAMME ELECTIVE COURSE (PEC)

LIST OF PEC COURSES OFFERED SEMESTER WISE						
SEMESTER V						
Sr. No.	**Course Code**	**Course**	**L**	**T**	**P**	**Credits**
1.	EE35*4	Program Elective-01	3	--	--	3
2.	EE3509	Program Elective Lab	--	--	2	1
SEMESTER VI						
3.	EE36*4	Program Elective -02	3	--	--	3
4.	EE36*5	Programme Elective-03	3	--	--	3
SEMESTER VII						
5.	EE37*3	Program Elective -04	3	--	--	3
SEMESTER VIII						
6.	EE38*3	Program Elective -05	3	--	--	3
7.	EE38*4	Program Elective -06	3	--	--	3
					TOTAL	**19**

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BASKET OF PROGRAMME CORE COURSE (PCC)

LIST OF PCC COURSES OFFERED SEMESTER WISE						
SEMESTER II						
Sr. No.	**Course Code**	**Course**	**L**	**T**	**P**	**Credits**
1.	EE3204	DC and AC Circuits	3	--	--	**3**
2.	EE3208	DC and AC Circuits Lab	--	--	2	**1**
SEMESTER III						
3.	EE3301	Signals & Systems	3	--	--	**4**
4.	EE3302	DC Machines and Transformer	3	--	--	**3**
5.	EE3303	Measurement and Instrumentation	3	--	--	**3**
6.	EE3308	DC Machines and Transformer Lab	--	--	2	**1**
7.	EE3309	Measurement and Instrumentation Lab	--	--	2	**1**
SEMESTER IV						
8.	EE3401	AC Machines	3	--	--	**3**
9.	EE3402	Analog and Digital Electronics	3	--	--	**3**
10.	EE3403	Power Electronics	3	1	--	**4**
11.	EE3408	AC Machines Lab	--	--	2	**1**
12	EE3409	Analog and Digital Electronics Lab	--	--	2	**1**
13	EE3410	Power Electronics Lab	--	--	2	**1**
SEMESTER V						
14.	EE3501	Elements of Power System	3	--	--	**3**
15.	EE3502	Control System Analysis	3	--	--	**3**

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16.	EE3503	Microcontroller	3	--	--	**3**
17.	EE3507	Control System Analysis Lab	--	--	2	**1**
18.	EE3508	Microcontroller Lab	--	--	2	**1**
		SEMESTER VI				
19.	EE3601	Control System Design	3	--	--	**3**
20.	EE3602	Power system Analysis	3	1	--	**4**
21.	EE3603	Electrical Drives	3	--	--	**3**
22.	EE3607	Electrical Drives Lab	--	--	2	**1**
23.	EE3608	Control System Design Lab	--	--	2	**1**
		SEMESTER VII				
24.	EE3701	Switchgear and Protection	3	--	--	**3**
25.	EE3702	Embedded Systems	3	--	--	**3**
26.	EE3706	Switchgear and Protection Lab	--	--	2	**1**
27.	EE3707	Embedded Systems Lab	--	--	2	**1**
		SEMESTER VIII				
28.	EE3801	Utilization and Traction	3	--	--	**3**
29.	EE3802	Electric and hybrid vehicles	3	--	--	**3**
30.	EE3806	Electric and hybrid vehicles Lab	--	--	2	**1**
					TOTAL	**67**

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BASKET OF OPEN ELECTIVE OTHER THAN PARTICULAR PROGRAM (OE)

LIST OF OE COURSES OFFERED SEMESTER WISE						
SEMESTER III						
Sr. No.	**Course Code**	**Course**	**L**	**T**	**P**	**Credits**
1.	EE3305	Open Elective -01	3	--	--	3
2.	EE3310	Open Elective -01 Lab	--	--	2	1
SEMESTER II						
4.	EE3405	Open Elective -02	2	--	--	2
SEMESTER III						
5.	EE3506	Open Elective -03	2	--	--	2
					TOTAL	08

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BASKET OF MULTIDISCIPLINARY MINOR (MDM)

LIST OF MDM COURSES OFFERED SEMESTER WISE						
SEMESTER III						
Sr. No.	**Course Code**	**Course**	**L**	**T**	**P**	**Credits**
1.	EE3304	Multi-disciplinary Minor – 01	2	--	--	2
SEMESTER IV						
2.	EE3404	Multi-disciplinary Minor – 02	2	--	--	2
SEMESTER V						
3.	EE3505	Multi-disciplinary Minor – 03	3	--	--	3
4.	EE3510	Multi-disciplinary Minor– 03 Lab	--	--	2	1
SEMESTER VI						
5.	EE3606	Multi-disciplinary Minor – 04	2	--	--	2
SEMESTER VII						
6.	EE3705	Multi-disciplinary Minor – 05	2	--	--	2
SEMESTER VIII						
7.	EE3805	Multi-disciplinary Minor-06	2	--	--	2
					TOTAL	14

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BASKET OF Vocational And Skill Enhancement Course (VSEC)

LIST OF VESC COURSES OFFERED SEMESTER WISE						
SEMESTER I						
Sr. No.	**Course Code**	**Course**	**L**	**T**	**P**	**Credits**
1.	EE3109	Electrical Workshop	--	--	2	1
SEMESTER II						
2.	EE3209	Experiential Learning Lab	--	--	4	2
3	EE3211	Programming language C++	--	--	2	1
SEMESTER V						
4.	EE3511	Numerical Computational Methods	--	--	2	1
						05

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BASKET OF HUMANITIES SOCIAL SCIENCE AND MANAGEMENT (HSSM)

LIST OF HSSM COURSES OFFERED SEMESTER WISE						
SEMESTER I						
Sr. No.	**Course Code**	**Course**	**L**	**T**	**P**	**Credits**
1.	EE3108	Professional Communication Skills	1	--	2	2
SEMESTER II						
2.	EE3205	Indian Knowledge Systems(MOOC)	--	--	--	2
SEMESTER III						
3.	EE3306	Universal Human Values	2	--	--	2
4.	EE3307	Economics for Engineer	2	--	--	2
SEMESTER IV						
5.	EE3406	Strategic Management	2	--	--	2
6.	EE3407	Professional Ethics	2	--	--	2
					TOTAL	12

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BASKET OF EXPERIENTIAL LEARNING (EL)

LIST OF EL COURSES OFFERED SEMESTER WISE						
SEMESTER IV						
Sr. No.	**Course Code**	**Course**	**L**	**T**	**P**	**Credits**
1.	EE3412	Community Engagement Project	--	--	2	1
SEMESTER VI						
2.	EE3609	Project-I	--	--	4	2
SEMESTER VII						
3.	EE3704	Research Methodology	3	--	--	3
4.	EE3708	Project Phase - II	--	--	12	6
SEMESTER VIII						
5.	EE3807	Project Phase - III	--	--	14	7
SEMESTER VIII (Industry Mode)						
1.	EE3811	Internship	--	--	--	12
SEMESTER VIII (Research Mode)						
1.	EE3816	Research Project	--	--	--	12
					TOTAL	43

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BASKET OF CO-CURRICULAR AND EXTRACURRICULAR ACTIVITIES(CCA)

LIST OF CCA COURSES OFFERED SEMESTER WISE						
SEMESTER I						
Sr. No.	**Course Code**	**Course**	**L**	**T**	**P**	**Credits**
1.	EE3110	Yoga	--	--	2	1
SEMESTER II						
2.	EE3210	NCC/NSS/CSP	--	--	2	1
					TOTAL	02

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BASKET OF MOOC

LIST OF MOOC COURSES OFFERED SEMESTER WISE						
SEMESTER II						
Sr. No.	**Course Code**	**Course**	**L**	**T**	**P**	**Credits**
1.	EE3205	Indian Knowledge Systems(MOOC)	--	--	--	2
SEMESTER VIII (Industry Mode)						
1.	EE3808	MOOC - I	--	--	--	4
2.	EE3809	MOOC - II	--	--	--	4
3.	EE3810	Multi-disciplinary Minor – 06 (MOOC)	--	--	--	2
SEMESTER VIII (Research Mode)						
1.	EE3812	MOOC - I	--	--	--	4
2.	EE3814	MOOC - II	--	--	--	4
3.	EE3815	Multi-disciplinary Minor 06 (MOOC)	--	--	--	2

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TOTAL	22

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