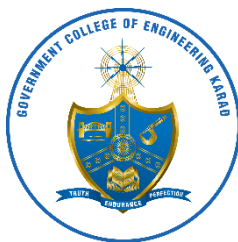# Government College of Engineering, Karad
(An Autonomous Institute of Govt.of Maharashtra)

Department of Electronics & Telecommunication Engineering
B.Tech E&TC Curriculum Structure
w.e.f
Academic Year: 2023-24

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	
To be a model of excellence to impart strong fundamentals, technical skills & research for real life application in Electronics and Telecommunication Engineering education.	
Department Mission	
1) Provide strong foundation in Electronics and Communication Engineering. 2) Create platform for innovation, research and new technology development. 3) Inculcate ethical values, entrepreneurial skills and self-learning attitude.	

Programme Educational Objectives (PEO):

PEO1	To motivate the students for pursuing higher education from renowned organizations, leading to Research & Development in core technical area.
PEO2	To encourage students to participate in Social activities & utilize engineering knowledge to fulfil socio-ethical problems for Rural development & Regional needs of technology.
PEO3	To prepare students with core Technical competency, Soft skills, Leadership quality & demonstrate an ability to work in multi-disciplinary fields.
PEO4	To be able to acquire state of art knowledge to cater the industry employability needs & to motivate students to enter in the field of Entrepreneurship.

Programme Outcomes (PO):

Engineering Graduates will be able to:

1. **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. **Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. **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.
4. **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.
5. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6. **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.
7. **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.
8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. **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.
11. **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.
12. **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.

Program Specific Outcomes (PSO):

PSO1	Validate the knowledge of the state of art, tools and apply for the development of Electronics systems including Embedded, IoT ,Robotics, Artificial Intelligence & VLSI circuits.
PSO2	Demonstrate appropriate modern techniques for analysis, design and development of Telecommunication systems.
PSO3	An ability to apply design principles in the development of hardware and software systems of varying complexity and provide security at every level.

Government College of Engineering, Karad

SCHEME OF INSTRUCTION & SYLLABI

Programme: Electronics & Telecommunication Engineering

Proposed Scheme of Instructions: First Year B. Tech. in Electronics & Telecommunication 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	EX3101	Engineering Chemistry	3	--	--	3	3	20	20	60	100
2	BSC	EX3102	Matrix Algebra and Calculus	3	1	--	4	4	20	20	60	100
3	ESC	EX3103	Basic Electrical & Electronics Engineering	3	--	--	3	3	20	20	60	100
4	ESC	EX3104	Engineering Graphics	2	--	__	2	2	--	50	--	50
5	ESC	EX3105	Design Thinking	1	--	2	3	2		50	--	50
6	BSC	EX3106	Engineering Chemistry Laboratory	--	--	2	2	1	-	25	25	50
7	ESC	EX3107	Engineering Graphics Laboratory	--	--	2	2	1	-	--	50	50
8	ESC	EX3108	Programming for problem solving Laboratory	1	--	2	3	2	-	50	25	75
9	HSSM	EX3109	Professional Communication Skills	1	--	2	3	2	-	50	25	75
10	VSEC	EX3110	Electronics Workshop and PCB Laboratory	--	--	2	2	1	-	100	-	100
11	CCA	EX3111	Yoga	--	--	2	2	1	-	50	-	50
			Total	**14**	**1**	**14**	**29**	**22**	**60**	**435**	**305**	**800**

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	10	-	-	-	01	02	-	01
Cumulative Sum	08	10	-	-	-	01	02	-	01

PROGRESSIVE TOTAL CREDITS: 00+22 =22

Government College of Engineering, Karad

SCHEME OF INSTRUCTION & SYLLABI

Programme: Electronics & Telecommunication Engineering

Proposed Scheme of Instructions: First Year B. Tech. in Electronics& Telecommunication 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	EX3201	Engineering Physics	3	--	--	3	3	20	20	60	100
2	BSC	EX3202	Differential and Integral Calculus	3	1	--	4	4	20	20	60	100
3	ESC	EX3203	Engineering Mechanics	3	--	--	3	3	20	20	60	100
4	PCC	EX3204	Transducers & Measurement	3	--	--	3	3	20	20	60	100
5	HSSM	EX3205	Indian Knowledge Systems (MOOC)	-	-	-	-	2	-	-	-	100
6	BSC	EX3206	Engineering Physics Laboratory	-	-	2	2	1	-	25	25	50
7	ESC	EX3207	Data structure with C++	2	--	2	4	3	-	50	50	100
8	VSEC	EX3208	Engineering Exploration	-	--	4	4	2	-	50	50	100
9	CCA	EX3209	NCC/NSS/CSP/E-Cell.	--	--	2	2	1	-	50	-	50
			Total	14	1	10	25	22	80	280	340	800

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	06	03	-	-	02	02	-	01
Cumulative Sum	16	16	03	-	-	03	04	-	02

PROGRESSIVE TOTAL CREDITS: 22+22 =44

Exit Course

Sr. No	Course Code	Course Title	Mode	Credits
Exit option: Award of UG Certificate in Major with 44 credits and an additional 8 credits from following Exit Courses			
1	EX-EC-0101	Maintenance and Servicing of Electrical & Electronics Equipment	Online/offline certification Course	8
		OR		
2	EX-EC-0102	Certificate Programme (C, C++ language learned in Sem-1 and/or Sem-2)		8

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Programme: Electronics & Telecommunication Engineering

Proposed Scheme of Instructions: Second Year B. Tech. in Electronics & Telecommunication Engineering

Semester – III

Sr. No.	Course Category	Course Code	Course Title	L	T	P	Contact Hrs/Wk	Course Credits	EXAM SCHEME MSE	ISE	ESE	TOTAL
1	PCC	EX3301	Digital System Design	3	--	--	3	3	20	20	60	100
2	PCC	EX3302	Network Analysis & Synthesis	3	--	--	3	3	20	20	60	100
3	PCC	EX3303	Electronics Devices & Circuits	3	--	--	3	3	20	20	60	100
4	MDM	EX3304	Multi-Disciplinary Minor-01	2	--	--	2	2	20	20	60	100
5	OEC	EX3305	Open Elective -01	3	--	--	3	3	20	20	60	100
6	HSSM	EX3306	Universal Human Values	2	--	--	2	2	-	50	-	50
7	HSSM	EX3307	Economics for Engineers	2	--	--	2	2	-	50	-	50
8	PCC	EX3308	Digital System Design Laboratory	--	--	2	2	1	-	25	25	50
9	VSEC	EX3309	Network Analysis & Synthesis Laboratory	--	--	2	2	1		25	25	50
10	VSEC	EX3310	Electronics Devices & Circuits Laboratory	--	--	2	2	1		25	25	50
11	OE	EX3311	Open Elective -01 Laboratory	--	--	2	2	1	-	50		50
			Total	**18**	**0**	**8**	**26**	**22**	**100**	**325**	**375**	**800**

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	**00**	-	**10**	-	**06**	**02**	**04**	-	-
Cumulative Sum	**16**	**16**	**13**	-	**06**	**05**	**08**	-	**02**

PROGRESSIVE TOTAL CREDITS: 44+22 =66

Government College of Engineering, Karad

SCHEME OF INSTRUCTION & SYLLABI

Programme: Electronics & Telecommunication Engineering

Proposed Scheme of Instructions: Second Year B. Tech. in Electronics & Telecommunication Engineering

Semester – IV

Sr. No.	Course Category	Course Code	Course Title	L	T	P	Contact Hrs/Wk	Course Credits	EXAM SCHEME			
									MSE	ISE	ESE	TOTAL
1	PCC	EX3401	Analog Circuit	3	-	--	3	3	20	20	60	100
2	PCC	EX3402	Signals & Systems	3	--	--	3	3	20	20	60	100
3	PCC	EX3403	Microcontroller & Interfacing	3	--	--	3	3	20	20	60	100
4	MDM	EX3404	Multi-Disciplinary Minor-02	2	--	--	2	2	20	20	60	100
5	OEC	EX3405	Open Elective -02	2	--	--	2	2	20	20	60	100
6	HSSM	EX3406	Strategic Management	2	--	--	2	2	-	25	-	25
7	HSSM	EX3407	Professional Ethics	2	--	--	2	2	-	25	-	25
8	PCC	EX3408	Analog Circuit Laboratory	--	--	2	2	1	-	25	25	50
9	VSEC	EX3409	Signals & Systems Laboratory	--	--	2	2	1	-	50		50
10	VSEC	EX3410	Microcontroller & Interfacing Laboratory	--	--	2	2	1	-	50		50
11	EL	EX3411	Micro Project	--	--	4	4	2	-	50	50	100
12	BSC	EX3412	Environmental Science	2	--	--	2	Audit	20	20	60	100
			Total	**19**	**0**	**10**	**29**	**22**	**120**	**345**	**435**	**800**

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	-	-	10	-	04	02	04	02	-
Cumulative Sum	16	16	23	-	10	07	12	02	02

PROGRESSIVE TOTAL CREDITS: 66+22 =88

Exit Course

Sr. No	Course Code	Course Title	Mode	Credits
Exit option : Award of UG Diploma in Major with 88 credits and an additional 8 credits from following Exit Courses
1	EX-EC-0201	Data Communication Networking	Online/offline certification Course	8
		OR		
2	EX-EC-0202	Advanced Electronics Gadgets Servicing & Maintenance		8

Government College of Engineering, Karad

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Programme: Electronics & Telecommunication Engineering

Proposed Scheme of Instructions: Third Year B. Tech. in Electronics & Telecommunication 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	EX3501	Analog & Digital Communication	3	--	--	3	3	20	20	60	100
2	PCC	EX3502	Digital Signal Processing	3	--	--	3	3	20	20	60	100
3	PCC	EX3503	Embedded System & RTOS	3	-	--	3	3	20	20	60	100
4	PEC	EX35*4	Program Elective -01	3	1	--	4	4	20	20	60	100
5	MDM	EX3505	Multi-Disciplinary Minor-03	3	--	--	3	3	20	20	60	100
6	OEC	EX3506	Open Elective -03	2	--	--	2	2	20	20	60	100
7	PCC	EX3507	Analog & Digital Communication Laboratory	--	--	2	2	1	-	25	25	50
8	PCC	EX3508	Digital Signal Processing Laboratory	--	--	2	2	1	-	50		50
9	PCC	EX3509	Embedded System & RTOS Laboratory	-	-	2	2	1		25	25	50
10	MDM	EX3510	MDM-03 Laboratory	--	--	2	2	1	-	50	-	50
			Total	17	1	8	26	22	120	270	410	800

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	-	-	12	04	06	-	-	-	-
Cumulative Sum	16	16	35	04	16	07	12	02	02

PROGRESSIVE TOTAL CREDITS: 88+22=110

Government College of Engineering, Karad

SCHEME OF INSTRUCTION & SYLLABI

Programme: Electronics & Telecommunication Engineering

Proposed Scheme of Instructions: Third Year B. Tech. in Electronics & Telecommunication 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	EX3601	Electromagnetic Field Theory	3	--	--	3	3	20	20	60	100
2	PCC	EX3602	Fiber Optical Communication	3	--	--	3	3	20	20	60	100
3	PCC	EX3603	Computer Network	3	--	--	3	3	20	20	60	100
4	PEC	EX36*4	Program Elective -02	3	1	--	4	4	20	20	60	100
5	PEC	EX3605	Internet of Things	3	--	--	3	3	20	20	60	100
6	MDM	EX3606	Multi-Disciplinary Minor -04	2	--	--	2	2	20	20	60	100
7	EL	EX3607	Mini Project	-	--	2	2	1	-	50	25	75
9	VSEC	EX3609	Fiber Optical Communication Laboratory	--	--	2	2	1	-	50		50
10	PCC	EX3310	Computer Network Laboratory	--	--	2	2	1	-	25		25
11	PEC	EX3311	Internet of Things Laboratory	--	--	2	2	1	-	25	25	50
			Total	**17**	**1**	**8**	**26**	**22**	**120**	**270**	**410**	**800**

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	-	-	10	8	02	01	-	1	-
Cumulative Sum	16	16	45	12	18	08	12	03	02

PROGRESSIVE TOTAL CREDITS: 110+22 =132

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	EX-EC-0301	Certified Network Engineer	Online/offline certification Course	8
		OR		
2	EX-EC-0302	Advanced Mobile Communication		8

SCHEME OF INSTRUCTION & SYLLABI

Programme: Electronics & Telecommunication Engineering

Proposed Scheme of Instructions: Final Year B. Tech. in Electronics & Telecommunication 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	EX3701	Mobile Communication & Networks	3	--	--	3	3	20	20	60	100
2	PCC	EX3702	Antenna & Wave Propagation	3	--	--	3	3	20	20	60	100
3	PEC	EX37*3	Program Elective -03	2	--	--	2	2	20	20	60	100
4	EL	EX3704	Research Methodology	3	--	--	3	3	20	20	60	100
5	MDM	EX3705	Multi-Disciplinary Minor -05	2	--	--	2	2	20	20	60	100
6	PCC	EX3706	Antenna & Wave Propagation Laboratory	--	--	2	2	1	-	75	25	100
7	EL	EX3707	Project Phase - I	--	--	16	16	8	-	100	100	200
			Total	13	0	18	31	22	100	275	425	800

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	02	02	-	-	11	-
Cumulative Sum	16	16	52	14	20	08	12	14	02

PROGRESSIVE TOTAL CREDITS: 132+22 =154

Programme: Electronics & Telecommunication Engineering

Proposed Scheme of Instructions: Final Year B. Tech. in Electronics & Telecommunication 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	EX3801	Microwave & Radar Engineering	2	--	--	2	2	20	20	60	100
2	PCC	EX3802	Robotics & Automation	3	--	--	3	3	20	20	60	100
3	PEC	EX38*3	Program Elective -04	2	--	--	2	2	20	20	60	100
4	PEC	EX3804	VLSI Design	3	--	--	3	3	20	20	60	100
5	MDM	EX3805	Multi-Disciplinary Minor -06	2	--	--	2	2	20	20	60	100
6	PCC	EX3806	Robotics & Automation Laboratory	--	--	2	2	1	-	25	25	50
7	PEC	EX3807	VLSI Design Lab	--	--	2	2	Audit	--	25	--	25
8	EL	EX3808	Project Phase - II	--	--	18	18	9	-	125	100	250
			Total	12	0	22	34	22	100	275	425	800

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	-	-	06	05	02	-	-	09	-
Cumulative Sum	16	16	58	19	22	08	12	23	02

PROGRESSIVE TOTAL CREDITS: 154+22 =176

Proposed Scheme of Instructions: Final Year B. Tech. in Electronics & Telecommunication 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	EX3809	MOOC - I	-	-	-		4			100	100
2	MOOC	EX3810	MOOC - II	-	-	-		4			100	100
3	MOOC	EX3811	Multi-disciplinary Minor – 06 (MOOC)	--	--	--	--	2			100	100
4	EL	EX3812	Internship	--	--	--	-	12	-	250	250	500
			Total	**0**	**-**	**-**	**0**	**22**	**-**	**250**	**550**	**800**

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	02	-	-	12	-
Cumulative Sum	16	16	52	22	22	08	12	23	02

PROGRESSIVE TOTAL CREDITS: 154+22 =176

Government College of Engineering, Karad

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Programme: Electronics & Telecommunication Engineering

Proposed Scheme of Instructions: Final Year B. Tech. in Electronics & Telecommunication 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	EX3813	MOOC - I					4			100	100
2	MOOC	EX3814	MOOC - II					4			100	100
3	MOOC	EX3815	Multi-disciplinary Minor – 06(MOOC)	--	--	--	--	2			100	100
4	EL	EX3816	Research Project	--	--	--	-	12	-	250	250	500
			Total	--	-	-	--	**22**	**20**	**250**	**550**	**800**

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	-	-		8	02	-		12	-
Cumulative Sum	16	16	52	22	22	08	12	23	02

PROGRESSIVE TOTAL CREDITS: 154+22 =176

List of Programme Elective Courses:

Specialization	Communication	Signal Processing	VLSI & Embedded	Automation
Elective-I	EX3514: Information Theory & Coding	EX3525:DSP Processor Architecture & Algorithm	EX3526: System Verilog	EX3537:Power Electronics
Elective-II	EX3614:Satellite Communication	EX3624: Image & Video Processing	EX3634:RF IC Designing/Computer Architecture	EX3644:Automotive Electronics
Elective-III	EX3714:EMI-EMC	EX3724:Multidate Signal Processing & Wavelet	EX3734:Mixed Signal IC Designing	EX3744: Biomedical Electronics
Elective-IV	EX3814:Wireless Communication	EX3824:Speech Processing	EX3834:Real Time System Design and Application	EX3844:Industrial Automation

List of Open Elective Courses:

Following open elective courses are offered by Electronics and Telecommunication Engineering department.

	ETC
Elective-I	EX3305: Digital System Design
Elective-II	EX3405: Microcontroller and Interfacing
Elective-III	EX3506: Embedded Systems and RTOS

List of Compulsory Multidisciplinary Courses:

It is advisable to Electronics and Telecommunication Engineering students to choose multidisciplinary courses recommended by department of Electronics and Telecommunication Engineering.

	Recommended Multidisciplinary Courses for Electronics and Telecommunication Engineering	Recommended Multidisciplinary Minor in Data Science for Electronics and Telecommunication Engineering
Multi-disciplinary Minor - 01	Probability Theory and Stochastic Processes	Probability Theory and Stochastic Processes
Multi-disciplinary Minor – 02	Control System	Python Programming
Multi-disciplinary Minor – 03	Computer Architecture	Artificial Intelligence
Multi-disciplinary Minor – 04	Introduction to Electrical Vehicle	Machine Learning
Multi-disciplinary Minor – 05	Cloud Computing	Deep Learning & Neural Networking
Multi-disciplinary Minor - 06	Cyber Security	Case Studies using AI & ML.

Any Other Discipline:

Specialization	Journalism	Social Science	Fine Art	Law	Music	Management & Finance
Multi-disciplinary Minor - 01	Principles of Communication	Indian Economics	History & Appreciation of Art	Constitutional Law	Theory of Indian Music	Microeconomics
Multi-disciplinary Minor – 02	Fundamentals of Journalism	Introduction to Sociology	Portrait Painting	Human Rights & International Law	Ancient and Modern Poetry	Corporate Social Responsibility
Multi-disciplinary Minor – 03	Cyber Journalism	Geo-Informatics	Poster Design	Environmental Law	The Evolution of music	Principles of Accounting
Multi-disciplinary Minor – 04	Basics of Design & Graphics	Introduction to Political Sciences	Press Advertisement	Civil Procedure Code (CPC)	Music and Film	Business Intelligence
Multi-disciplinary Minor – 05	Mass Communication: Concepts and Processes	Corporate sociology	Graphics Printmaking	Land Laws including ceiling and other local laws	Introduction to Electronic and Computer Music	Marketing Research
Multi-disciplinary Minor - 06	IT and Online Journalism	Modern India- Political ,Economic & Social Ethos	Indian Aesthetic, Portrait Painting	Cyber Law	Analysis of Tonal Music	Corporate Governance and Business Ethics

BASKET OF BASIC SCIENCE COURSES (BSC)

LIST OF BSC COURSES OFFERED SEMESTER WISE						
SEMESTER I						
Sr. No	**Course Code**	**Course**	**L**	**T**	**P**	**Credits**
1.	EX3101	Engineering Chemistry	3	--	--	3
2.	EX3102	Matrix Algebra and Calculus	3	1	--	4
3.	EX3106	Engineering Chemistry Laboratory	--	--	2	1
SEMESTER II						
4.	EX3201	Engineering Physics	3	--	--	3
5.	EX3202	Differential and Integral Calculus	3	1	--	4
6.	EX3206	Engineering Physics Laboratory	-	-	2	1
SEMESTER IV						
7.	EX3412	Environmental Science	2	--	--	Audit
Total						16

BASKET OF ENGINEERING SCIENCE COURSES (ESC)

<table>
<tr><td colspan="7">LIST OF ESC COURSES OFFERED SEMESTER WISE</td></tr>
<tr><td colspan="7">SEMESTER I</td></tr>
<tr><td>Sr. No</td><td>Course Code</td><td>Course</td><td>L</td><td>T</td><td>P</td><td>Credits</td></tr>
<tr><td>1.</td><td>EX3103</td><td>Basic Electrical & Electronics Engineering</td><td>3</td><td>--</td><td>--</td><td>3</td></tr>
<tr><td>2.</td><td>EX3104</td><td>Engineering Graphics</td><td>2</td><td>--</td><td>--</td><td>2</td></tr>
<tr><td>3.</td><td>EX3105</td><td>Design Thinking</td><td>2</td><td>--</td><td>--</td><td>2</td></tr>
<tr><td>4.</td><td>EX3107</td><td>Engineering Graphics Laboratory</td><td>--</td><td>--</td><td>2</td><td>1</td></tr>
<tr><td>5.</td><td>EX3108</td><td>Programming for problem solving Laboratory -I</td><td>1</td><td>--</td><td>2</td><td>2</td></tr>
<tr><td colspan="7">SEMESTER II</td></tr>
<tr><td>1.</td><td>EX3203</td><td>Engineering Mechanics</td><td>3</td><td>--</td><td>--</td><td>3</td></tr>
<tr><td>2.</td><td>EX3207</td><td>Programming for problem solving Laboratory -2</td><td>2</td><td>--</td><td>2</td><td>3</td></tr>
<tr><td colspan="6">Total</td><td>16</td></tr>
</table>

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.	EX3204	Transducers & Measurement	3	--	--	**3**
		SEMESTER III				
2.	EX3301	Digital System Design	3	--	--	3
3.	EX3302	Network Analysis & Synthesis	3	--	--	3
4.	EX3303	Electronics Devices & Circuits	3	--	--	3
5.	EX3308	Digital System Design Laboratory	--	--	2	1
		SEMESTER IV				
7.	EX3401	Analog Circuit	3	-	--	3
8.	EX3402	Signals & Systems	3	--	--	3
9.	EX3403	Microcontroller & Interfacing	3	--	--	3
10.	EX3408	Analog Circuit Laboratory	--	--	2	2
		SEMESTER V				
11.	EX3501	Analog & Digital Communication	3	--	--	3
12.	EX3502	Digital Signal Processing	3	--	--	3
13.	EX3503	Embedded System & RTOS	3	-	--	3

14	EX3507	Analog & Digital Communication Laboratory	--	--	2	1
15	EX3508	Digital Signal Processing Laboratory	--	--	2	1
16	EX3509	Embedded System & RTOS Laboratory	-	-	2	1
SEMESTER VI						
17	EX3601	Electromagnetic Field Theory	3	--	--	3
18	EX3602	Fiber Optical Communication	3	--	--	3
19	EX3603	Computer Network	3	--	--	3
20	EX3310	Computer Network Laboratory	--	--	2	1
SEMESTER VII						
21	EX3701	Mobile Communication & Networks	3	--	--	3
22	EX3702	Antenna & Wave Propagation	3	--	--	3
23	EX3706	Antenna & Wave Propagation Laboratory	--	--	2	1
SEMESTER VIII						
24	EX3801	Microwave & Radar Engineering	2	--	--	2
25	EX3802	Robotics & Automation	3	--	--	3
26	EX3806	Robotics & Automation Laboratory	--	--	2	1
Total						**59**

BASKET OF PROGRAMME ELECTIVE COURSE (PEC)

Sr. No	Course Code	Course	L	T	P	Credits
		LIST OF PEC COURSES OFFERED SEMESTER WISE				
		SEMESTER V				
1.	EX35*4	Program Elective -01	3	1	--	4
		SEMESTER VI				
2.	EX36*4	Program Elective -02	3	1	--	4
3.	EX3605	Internet of Things	3	--	--	3
4.	EX3311	Internet of Things Laboratory	--	--	2	1
		SEMESTER VII				
5.	EX37*3	Program Elective -03	2	--	--	2
		SEMESTER VIII				
6.	EX38*3	Program Elective -04	2	--	--	2
7.	EX3804	VLSI Design	3	--	--	3
8.	EX3807	VLSI Design Lab	--	--	2	Audit
		Total				**19**

BASKET OF OPEN ELECTIVE OTHER THAN PARTICULAR PROGRAM (OE/MDM)

Sr. No	Course Code	Course	L	T	P	Credits
LIST OF OE/MDM COURSES OFFERED SEMESTER WISE					
	SEMESTER III					
1.	EX3304	Multi-Disciplinary Minor-01	2	--	--	2
2.	EX3305	Open Elective -01	3	--	--	3
3.	EX3311	Open Elective -01 Laboratory	--	--	2	1
	SEMESTER IV					
4.	EX3404	Multi-Disciplinary Minor-02	2	--	--	2
5.	EX3405	Open Elective -02	2	--	--	2
	SEMESTER V					
7.	EX3505	Multi-Disciplinary Minor-03	3	--	--	3
8.	EX3506	Open Elective -03	2	--	--	2
9.	EX3510	MDM-03 Laboratory	--	--	2	1
	SEMESTER VI					
10.	EX3606	Multi-Disciplinary Minor -04	2	--	--	2
	SEMESTER VII					
11.	EX3705	Multi-Disciplinary Minor -05	2	--	--	2

		SEMESTER VIII (Academic Mode)				
12.	EX3805	Multi-Disciplinary Minor -06	2	--	--	2
		SEMESTER VIII (Industry Mode)				
13.	EX3810	Multi-disciplinary Minor – 06 (MOOC)	--	--	--	2
		SEMESTER VIII (Research Mode)				
14.	EX3814	Multi-disciplinary Minor – 06 (MOOC)	--	--	--	2
		Total				**22**

BASKET OF VOCATIONAL AND SKILL ENHANCEMENT COURSE (VSEC)

	LIST OF VSEC COURSES OFFERED SEMESTER WISE					
	SEMESTER I					
Sr. No	**Course Code**	**Course**	**L**	**T**	**P**	**Credits**
1.	EX3110	Electronics Workshop and PCB Laboratory	--	--	2	**1**
	SEMESTER II					
1.	EX3208	Engineering Exploration	-	--	4	**2**
	SEMESTER III					
1.	EX3309	Network Analysis & Synthesis Laboratory	--	--	2	1
2.	EX3310	Electronics Devices & Circuits Laboratory	--	--	2	1
	SEMESTER IV					
1.	EX3409	Signals & Systems Laboratory	--	--	2	1
2.	EX3410	Microcontroller & Interfacing Laboratory	--	--	2	1
	SEMESTER VI					
1.	EX3609	Fiber Optical Communication Laboratory	--	--	2	1
	Total					**08**

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.	EX3109	Professional Communication Skills	1	--	2	2
		SEMESTER II				
1.	EX3205	Indian Knowledge Systems (MOOC)	-	-	-	**2**
		SEMESTER III				
1.	EX3306	Universal Human Values	2	--	--	2
2.	EX3307	Economics for Engineers	2	--	--	2
		SEMESTER IV				
	EX3406	Strategic Management	2	--	--	2
	EX3407	Professional Ethics	2	--	--	2
		Total				**12**

BASKET OF EXPERIENTIAL LEARNING (EL)

LIST OF EL COURSES OFFERED SEMESTER WISE						
SEMESTER IV						
Sr. No	**Course Code**	**Course**	**L**	**T**	**P**	**Credits**
1.	EX3411	Micro Project	--	--	4	**2**
SEMESTER VI						
1.	EX3607	Mini Project	-	--	2	**1**
SEMESTER VII						
1.	EX3704	Research Methodology	3	--	--	3
2.	EX3707	Project Phase - I	--	--	16	**8**
SEMESTER VIII (Academic Mode)						
1.	EX3808	Project Phase - II	--	--	18	9
SEMESTER VIII (Industry Mode)						
1.	EX3811	Internship	--	--	--	12
SEMESTER VIII (Research Mode)						
1.	EX3815	Research Project	--	--	--	12
Total						23

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.	EX3111	Yoga	--	--	2	**1**
SEMESTER II						
1.	EX3209	NCC/NSS/CSP/E-Cell.	--	--	2	1
Total						**2**