Government College of Engineering, Karad

(An Autonomous Institute of Govt. of Maharashtra)

Department of Information Technology

BTech IT Curriculum Structure

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 provide value based high quality IT education by empowering every student to be innovative and employable IT professional.
Department Mission
To offer graduate program in Information Technology for making students excellent IT professionals and encouraging them for higher studies, research and social responsibility.

Programme Educational Objectives (PEO):

PEO1	To formulate, analyse and solve real life problems in software industry.
PEO2	To excel in professional career, higher education, research by acquiring knowledge in mathematics, computing and engineering principles.
PEO3	To exhibit ethical, social, communication skill, team work and adapt new tools and technology.

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	Ability to understand, analyze and develop computer programs in the areas related to System Software, Database Systems, Networking, Web Designing.
PSO2	Ability to apply standard practices & strategies to solve IT Industry problems.

Government College of Engineering, Karad

SCHEME OF INSTRUCTION & SYLLABI

Programme: Information Technology

Scheme of Instructions: First Year B. Tech. in Information Technology

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	IT3101	Applied Chemistry	3	--	--	3	3	20	20	60	100
2	BSC	IT3102	Matrix Algebra and Differential Calculus	3	1	--	4	4	20	20	60	100
3	ESC	IT3103	Basic Electronics Engineering	3	--	--	3	3	20	20	60	100
4	ESC	IT3104	Programming for problem solving	3	--	_	3	3	20	20	60	100
5	ESC	IT3105	Design Thinking	1	--	2	3	2	-	50	-	50
6	BSC	IT3106	Applied Chemistry Lab	--	--	2	2	1	-	50	-	50
7	ESC	IT3107	Programming for problem solving Lab	--	--	2	2	1	-	50	25	75
8	HSSM	IT3108	Professional Communication Skills	1	--	2	3	2	-	50	25	75
9	VSEC	IT3109	Computer Workshop	--	--	4	4	2	-	50	50	100
10	CCA	IT3110	Yoga	--	--	2	2	1	-	50	-	50
			Total	**14**	**1**	**14**	**29**	**22**	**80**	**380**	**340**	**800**

*** Two Weeks Induction Program in the First Semester & Idea Project presentation/demonstration (on Science Day) in the Second Semester are Mandatory for Every Student.**

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**	**09**	-	-	-	**02**	**02**	-	**01**
Cumulative Sum	**08**	**09**	-	-	-	**02**	**02**	-	**01**

PROGRESSIVE TOTAL CREDITS: 00+22 =22

Government College of Engineering, Karad

SCHEME OF INSTRUCTION & SYLLABI

Programme: Information Technology

Scheme of Instructions: First Year B. Tech. in Information Technology

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	IT3201	Applied Physics	3	--	--	3	3	20	20	60	100
2	BSC	IT3202	Differential and Integral Calculus	3	1	--	4	4	20	20	60	100
3	ESC	IT3203	Object Oriented Programming	3	--	--	3	3	20	20	60	100
4	PCC	IT3204	Data Structures	3	--	--	3	3	20	20	60	100
5	HSSM	IT3205	Indian Knowledge Systems	-	-	-	-	2	-	-	100	100
6	BSC	IT3206	Applied Physics Lab	-	-	2	2	1	-	25	-	25
7	ESC	IT3207	Object Oriented Programming Lab	--	--	2	2	1	-	50	25	75
8	PCC	IT3208	Data Structures Lab	--	--	2	2	1	-	50	25	75
9	VSEC	IT3209	Engineering Graphics Lab	2	--	2	4	3	-	50	25	75
10	CCA	IT3210	NCC/NSS/CSP/E-Cell	--	--	2	2	1	-	50	-	50
			Total	**14**	**1**	**10**	**25**	**22**	**80**	**305**	**415**	**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**	**04**	**04**	-	-	**03**	**02**	-	**01**
Cumulative Sum	**16**	**13**	**04**	-	-	**05**	**04**	-	**02**

PROGRESSIVE TOTAL CREDITS: 22+22 =44

Exit Course

Exit option : Award of UG Certificate in Major with 44 credits and an additional 8 credits from following Exit Courses				
Sr. No	**Course Code**	**Course Title**	**Mode**	**Credits**
1	IT-EC-0101	Desktop Engineer	Online/offline certification Course	8
		OR		
2	IT-EC-0102	IT Support Engineer		8
		OR		
3	IT-EC-0103	The candidate should complete the internship of one month for 8 credits along with one project.		8

Government College of Engineering, Karad

SCHEME OF INSTRUCTION & SYLLABI

Programme: Information Technology

Proposed Scheme of Instructions: Second Year B. Tech. in Information Technology

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	BSC	IT3301	Probability and Random Process	2	-	-	2	2	20	20	60	100
2	PCC	IT3302	Design and Analysis of Algorithms	3	--	--	3	3	20	20	60	100
3	PCC	IT3303	Discrete Mathematics	3	--	--	3	3	20	20	60	100
4	PCC	IT3304	Computer Organization and Architecture	2	--	--	2	2	20	20	60	100
5	MDM	##	Multi-disciplinary Minor - 01	2	--	--	2	2	20	20	60	100
6	OE	$D/O/I	Open Elective -01	3	--	--	3	3	20/NA/NA	20/NA/50	60/10 0/50	100
7	HSSM	IT3307	Universal Human Values	2	--	--	2	2	-	50	-	50
8	HSSM	IT3308	Economics for Engineer	2	--	--	2	2	-	50	-	50
9	PCC	IT3309	Design and Analysis of Algorithms Lab	--	--	2	2	1	-	25	-	25
10	PCC	IT3310	Programming Lab – I	--	--	2	2	1	-	25	-	25
11	OE	$D/O/I	Open Elective -01 Lab	--	--	2	2	1	-	25	25	50
			Total	**19**	**0**	**6**	**25**	**22**	**120**	**295**	**385**	**800**

***Note: Open Elective-01 (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- 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 (OE/MDM)	Vocational and Skill Enhancement Course (VSEC)	Humanities Social Science and Management (HSSM)	Experiential Learning (EL)	Co-curricular And Extracurricular Activities (CCA)
Credits	**02**	**-**	**10**	**-**	**06**	**-**	**04**	**-**	**-**
Cumulative Sum	**18**	**13**	**14**	**-**	**06**	**05**	**08**	**-**	**02**

PROGRESSIVE TOTAL CREDITS: 44+22 =66

Government College of Engineering, Karad

SCHEME OF INSTRUCTION & SYLLABI

Programme: Information Technology

Proposed Scheme of Instructions: Second Year B. Tech. in Information Technology

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	IT3401	Theory of Computer Science	3	1	--	4	4	20	20	60	100
2	PCC	IT3402	Operating Systems	3	--	--	3	3	20	20	60	100
3	PCC	IT3403	Database Management Systems	3	--	--	3	3	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	IT3406	Strategic Management	2	--	--	2	2	-	25	-	25
7	HSSM	IT3407	Professional Ethics	2	--	--	2	2	-	25	-	25
8	VSEC	IT3408	Programming Lab – II	1	--	2	3	2	-	50	50	100
9	PCC	IT3409	Database Management Systems Lab	--	--	2	2	1	-	50	50	100
10	EL	IT3410	Community Engagement Project	--	--	2	2	1	-	50	--	50
11	BSC	IT3411	Environmental Science	2	--	--	2	Audit	-	-	-	-
			Total	**20**	**1**	**6**	**27**	**22**	**100**	**300**	**400**	**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- 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	-	-	**11**	-	**04**	**02**	**04**	**01**	-
Cumulative Sum	**18**	**13**	**25**	-	**10**	**07**	**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 credits from following Exit Courses				
Sr. No	**Course Code**	**Course Title**	**Mode**	**Credits**
1	IT-EC-0201	Web Developer / App Developer	Online/offline certification Course	8
		OR		
2	IT-EC-0202	Certified Database Engineer		8
		OR		
3	IT-EC-0203	The candidate should complete the internship of one month for 8 credits along with one project.		8

Government College of Engineering, Karad

SCHEME OF INSTRUCTION & SYLLABI

Programme: Information Technology

Proposed Scheme of Instructions: Third Year B. Tech. in Information Technology

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	IT3501	Computer Networks	3	--	--	3	3	20	20	60	100
2	PCC	IT3502	Software Engineering	3	--	--	3	3	20	20	60	100
3	PCC	IT3503	Machine Learning	3	--	--	3	3	20	20	60	100
4	PEC	IT35*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	60/10 0/50	100
7	PCC	IT3507	Computer Networks Lab	--	--	2	2	1	-	25	25	50
8	PCC	IT3508	Programming Lab – II (Advanced Java JSP, Servlet, Spring, Hibernate)	--	--	2	2	1	-	25	25	50
9	PCC	IT3509	Machine Learning Lab	--	--	2	2	1	-	25	-	25
10	PEC	IT35*0	Program Elective-01 Lab	--	--	2	2	1	-	25	-	25
11	MDM	##	Multi-disciplinary Minor – 03 Lab	--	--	2	2	1	-	50	-	50
			Total	**17**	**00**	**10**	**27**	**22**	**120**	**270**	**410**	**800**

***Note: Open Elective-03 (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- 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	-	-	**12**	**04**	**06**	-	-	-	-
Cumulative Sum	**18**	**13**	**37**	**04**	**16**	**07**	**12**	**01**	**02**

PROGRESSIVE TOTAL CREDITS: 88+22=110

Government College of Engineering, Karad

SCHEME OF INSTRUCTION & SYLLABI

Programme: Information Technology

Proposed Scheme of Instructions: Third Year B. Tech. in Information Technology

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	IT3601	Advanced Operating Systems	3	--	--	3	3	20	20	60	100
2	PCC	IT3602	Advanced Algorithms	3	--	--	3	3	20	20	60	100
3	PCC	IT3603	Mobile Application Development	2	--	--	2	2	20	20	60	100
4	PEC	IT36*4	Program Elective-02	3	--	--	3	3	20	20	60	100
5	PEC	IT3605	Internet of Things	3	--	--	3	3	20	20	60	100
6	MDM	##	Multi-disciplinary Minor - 04	2	--	--	2	2	20	20	60	100
7	VSEC	IT3607	Programming Lab – III (Full Stack Development)	1	--	2	3	2	-	25	25	50
8	PCC	IT3608	Advanced Algorithms Lab	--	--	2	2	1	-	50	-	50
9	PCC	IT3609	Mobile Application Development Lab	--	--	2	2	1	-	25	25	50
10	PEC	IT36*0	Program Elective-02 Lab	--	--	2	2	1	-	25	-	25
11	PEC	IT3611	Internet of Things Lab	--	--	2	2	1	-	25	-	25
			Total	**17**	**0**	**10**	**27**	**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- 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 (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**	**08**	**02**	**02**	-	-	-
Cumulative Sum	**18**	**13**	**47**	**12**	**18**	**09**	**12**	**01**	**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	IT-EC-0301	Certified Network Engineer	Online/offline certification Course	8
		OR		
2	IT-EC-0302	Certified Cloud Engineer		8
		OR		
3	IT-EC-0303	The candidate should complete the internship of one month for 8 credits along with one project.		8

Government College of Engineering, Karad

SCHEME OF INSTRUCTION & SYLLABI

Programme: Information Technology

Proposed Scheme of Instructions: Final Year B. Tech. in Information Technology

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	IT3701	Cloud Computing and Infrastructure Services	3	--	--	3	3	20	20	60	100
2	PCC	IT3702	Cryptography and Cyber Security	3	--	--	3	3	20	20	60	100
3	PEC	IT37*3	Program Elective -03	2	--	--	2	2	20	20	60	100
4	EL	IT3704	Research Methodology	3	--	--	3	3	20	20	60	100
5	MDM	##	Multi-disciplinary Minor - 05	2	--	--	2	2	20	20	60	100
6	PCC	IT3706	Cloud Computing and Infrastructure Services Lab	-	-	2	2	1	-	50	50	100
7	EL	IT3707	Project Phase – I	--	--	16	16	8	-	100	100	200
			Total	**13**	**0**	**18**	**31**	**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- 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	**-**	**-**	**07**	**02**	**02**	**-**	**-**	**11**	**-**
Cumulative Sum	**18**	**13**	**54**	**14**	**20**	**09**	**12**	**12**	**02**

PROGRESSIVE TOTAL CREDITS: 132+22 =154

Government College of Engineering, Karad

SCHEME OF INSTRUCTION & SYLLABI

Programme: Information Technology

Proposed Scheme of Instructions: Final Year B. Tech. in Information Technology

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	IT3801	High Performance Computing	2	--	--	2	2	20	20	60	100
2	PCC	IT3802	Advanced Computer Network	3	--	--	3	3	20	20	60	100
3	PEC	IT38*3	Program Elective-04	2	--	--	2	2	20	20	60	100
4	PEC	IT3804	Human Computer Interaction	3	--	--	3	3	20	20	60	100
5	MDM	##	Multi-disciplinary Minor - 06	2	--	--	2	2	20	20	60	100
6	PCC	IT3806	High Performance Computing Lab	--	--	2	2	1	-	50	50	100
7	EL	IT3807	Project Phase – II	--	--	18	18	9	-	100	100	200
			Total	**12**	**0**	**20**	**32**	**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- 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	**-**	**-**	**06**	**05**	**02**	**-**	**-**	**09**	**-**
Cumulative Sum	**18**	**13**	**60**	**19**	**22**	**09**	**12**	**21**	**02**

PROGRESSIVE TOTAL CREDITS: 154+22 =176

Government College of Engineering, Karad

SCHEME OF INSTRUCTION & SYLLABI

Programme: Information Technology

Proposed Scheme of Instructions: Final Year B. Tech. in Information Technology

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	IT3808	MOOC – I	--	--	--	--	4	--	-	100	100
2	MOOC	IT3809	MOOC – II	--	--	--	--	4	--	-	100	100
3	MDM	##	Multi-disciplinary Minor –06 (MOOC)	--	--	--	--	2	--	--	100	100
4	EL	IT3811	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- 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	-	-	-	-	-	-	-	-	-
Cumulative Sum	**18**	**13**	**60**	**19**	**22**	**09**	**12**	**21**	**02**

PROGRESSIVE TOTAL CREDITS: 154+22 =176

Government College of Engineering, Karad

SCHEME OF INSTRUCTION & SYLLABI

Programme: Information Technology

Proposed Scheme of Instructions: Final Year B. Tech. in Information Technology

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	IT3812	MOOC – I	--	--	--	--	4	--	-	100	100
2	MOOC	IT3814	MOOC – II	--	--	--	--	4	--	-	100	100
5	MDM	##	Multi-disciplinary Minor – 06	2	--	--	2	2	20	20	60	100
3	EL	IT3816	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- 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	-	-	-	-	-	-	-	-	-
Cumulative Sum	**18**	**13**	**60**	**19**	**22**	**09**	**12**	**21**	**02**

PROGRESSIVE TOTAL CREDITS: 154+22 =176

List of Elective subject:

Elective-I	IT3514: Advanced Web and Mobile Applications	IT3524:Artificial Intelligence	IT3534: Advanced Database Management Systems	IT3544: Principles of Distributed Systems
Elective-I Lab	IT3510: Advanced Web and Mobile Applications Lab	IT3520:Artificial Intelligence Lab	IT3530: Advanced Database Management Systems Lab	IT3540: Principles of Distributed Systems Lab
Elective-II	IT3614: Advanced Software Engineering	IT3624:Advanced Machine Learning	IT3634: Data Warehousing and Data Mining	IT3644:Interactive Systems
Elective-II Lab	IT3610: Advanced Software Engineering Lab	IT3620:Advanced Machine Learning Lab	IT3630: Data Warehousing and Data Mining Lab	IT3640:Interactive Systems Lab
Elective-III	IT3713: Object Oriented Modelling and Design	IT3723: Deep Learning	IT3733: Big Data Analytics	IT3743:Bio-Informatics
Elective-IV	IT3813: Software Testing and Quality Assurance	IT3823: AI Development Platforms	IT3833: Data Science	IT3843: Quantum Computing

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
	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

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

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

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

Electrical Engineering Department

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

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

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

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.	**IT3101**	Applied Chemistry	3	--	--	**3**
2.	**IT3102**	Matrix Algebra and Differential Calculus	3	1	--	**4**
3.	**IT3106**	Applied Chemistry Lab	--	--	2	**1**
SEMESTER II						
4.	**IT3201**	Applied Physics	3	--	--	**3**
5.	**IT3202**	Differential and Integral Calculus	3	1	--	**4**
6.	**IT3206**	Applied Physics Lab	--	--	2	**1**
SEMESTER III						
7.	**IT3301**	Probability and Random Process	2	--	--	**2**
					TOTAL	**18**

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.	**IT3103**	Basic Electronics Engineering	3	--	--	**3**
2.	**IT3104**	Programming for problem solving	3	--	_	**3**
3.	**IT3105**	Design Thinking	1	--	2	**2**
4.	**IT3107**	Programming for problem solving Lab	--	--	2	**1**
SEMESTER II						
4.	**IT3203**	Object Oriented Programming	3	--	--	**3**
5.	**IT3207**	Object Oriented Programming Lab	-	-	2	**1**
					TOTAL	**13**

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.	**IT35*4**	Program Elective-01	3	--	--	**3**
2.	**IT35*0**	Program Elective-01 Lab	--	--	2	**1**
SEMESTER VI						
3.	**IT36*4**	Program Elective-02	3	--	--	**3**
4.	**IT3605**	Internet of Things	3	--	--	**3**
5.	**IT36*0**	Program Elective-02 Lab	--	--	2	**1**
6.	**IT3611**	Internet of Things Lab	--	--	2	**1**
SEMESTER VII						
7.	**IT37*3**	Program Elective -03	2	--	--	**2**
SEMESTER VIII						
8.	**IT38*3**	Program Elective-04	2	--	--	**2**
9.	**IT3804**	Human Computer Interaction	3	--	--	**3**
					TOTAL	**19**

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.	**IT3204**	Data Structures	3	--	--	**3**
2.	**IT3208**	Data Structures Lab	--	--	2	**1**
SEMESTER III						
3.	**IT3302**	Design and Analysis of Algorithms	3	--	--	**3**
4.	**IT3303**	Discrete Mathematics	3	--	--	**3**
5.	**IT3304**	Computer Organization and Architecture	2	--	--	**2**
6.	**IT3309**	Design and Analysis of Algorithms Lab	--	--	2	**1**
7	**IT3310**	Programming Lab-I	--	--	2	**1**
SEMESTER IV						
8.	IT3401	Theory of Computer Science	3	1	--	**4**
9.	IT3402	Operating Systems	3	--	--	**3**
10.	IT3403	Database Management Systems	3	--	--	**3**
11.	IT3409	Database Management Systems Lab	--	--	2	**1**
SEMESTER V						
12.	IT3501	Computer Networks	3	--	--	**3**
13.	IT3502	Software Engineering	3	--	--	**3**
14.	IT3503	Machine Learning	3	--	--	**3**
15.	IT3507	Computer Networks Lab	--	--	2	**1**
16.	IT3508	Software Engineering Lab	--	--	2	**1**

17.	IT3509	Machine Learning Lab	--	--	2	**1**
SEMESTER VI						
18.	**IT3601**	Advanced Operating Systems	3	--	--	**3**
19.	**IT3602**	Advanced Algorithms	3	--	--	**3**
20.	**IT3603**	Mobile Application Development	2	--	--	**2**
21.	**IT3608**	Advanced Algorithms Lab	--	--	2	**1**
22.	**IT3609**	Mobile Application Development Lab	--	--	2	**1**
SEMESTER VII						
23.	**IT3701**	Cloud Computing and Infrastructure Services	3	--	--	**3**
24.	**IT3702**	Cryptography and Cyber Security	3	--	--	**3**
25.	**IT3706**	Cloud Computing and Infrastructure Services Lab	-	-	2	**1**
SEMESTER VIII						
26.	**IT3801**	High Performance Computing	2	--	--	**2**
27.	**IT3802**	Advanced Computer Networks	3	--	--	**3**
28.	**IT3806**	High Performance Computing Lab	--	--	2	**1**
					TOTAL	**60**

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.	**$D/O/I**	Open Elective -01	3	--	--	**3**
2.	**$D/O/I**	Open Elective -01 Lab	--	--	2	**1**
SEMESTER IV						
3.	**$D/O/I**	Open Elective -02	2	--	--	**2**
SEMESTER V						
4.	**$D/O/I**	Open Elective -03	2	--	--	**2**
					TOTAL	**08**

BASKET OF MULTIDISCIPLINARY MINOR (MDM)

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

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.	**IT3109**	Computer Workshop	--	--	4	**2**
SEMESTER II						
2.	**IT3209**	Engineering Graphics Lab	2	--	2	**3**
SEMESTER IV						
7.	**IT3408**	Programming Lab-II	1	--	2	**2**
SEMESTER VI						
8.	**IT3607**	Programming Lab-III	1	--	2	**2**
						09

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.	**IT3108**	Professional Communication Skills	1	--	2	**2**
SEMESTER II						
2.	**IT3205**	Indian Knowledge Systems	--	--	--	**2**
SEMESTER III						
3.	**IT3307**	Universal Human Values	2	--	--	**2**
4.	**IT3308**	Economics for Engineer	2	--	--	**2**
SEMESTER IV						
5.	**IT3406**	Strategic Management	2	--	--	**2**
6.	**IT3407**	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.	**IT3410**	Community Engagement Project	--	--	2	**1**
SEMESTER VII						
2.	**IT3704**	Research Methodology	3	--	--	**3**
3.	**IT3707**	Project Phase – I	--	--	16	**8**
SEMESTER VIII						
4.	**IT3807**	Project Phase – II	--	--	18	**9**
					TOTAL	**21**

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.	IT3110	Yoga	--	--	2	**1**
SEMESTER II						
2.	IT3210	NCC/NSS/CSP/E-Cell	--	--	2	**1**
					TOTAL	**02**

BASKET OF MOOC

LIST OF MOOC COURSES OFFERED SEMESTER WISE						
SEMESTER II						
Sr. No.	**Course Code**	**Course**	**L**	**T**	**P**	**Credits**
1.	IT3205	Indian Knowledge Systems (MOOC)	--	--	--	**2**
SEMESTER VIII (Industry Mode)						
1.	IT3808	MOOC – I	--	--	--	**4**
2.	IT3809	MOOC – II	--	--	--	**4**
3.	IT3810	Multi-disciplinary Minor – 06 (MOOC)	2	--	--	**2**
OR						
SEMESTER VIII (Research Mode)						
1.	IT3812	MOOC – I	--	--	--	**4**
2.	IT3814	MOOC – II	--	--	--	**4**
					TOTAL	**20**