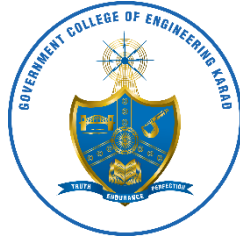


Government College of Engineering, Karad

(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

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	3	--	--	3	3	20	20	60	100
5	MDM	IT3305	Multi-disciplinary Minor - 01	2	--	--	2	2	20	20	60	100
6	OE	IT3306	Open Elective -01	3	--	--	3	3	20	20	60	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	50
10	OE	IT3310	Open Elective -01 Lab	--	--	2	2	1	-	25	25	50
Total				20	0	4	24	22	120	270	410	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 (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

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	2	--	--	2	2	20	20	60	100
4	MDM	IT3404	Multi-disciplinary Minor - 02	2	--	--	2	2	20	20	60	100
5	OE	IT3405	Open Elective -02	2	--	--	2	2	20	20	60	100
6	HSSM	IT3406	Strategic Management	2	--	--	2	2	-	25	-	25
7	HSSM	IT3407	Professional Ethics	2	--	--	2	2	-	25	-	25
8	VSEC	IT3408	Development Tools Lab	1	--	2	3	2	-	50	-	50
9	PCC	IT3409	Database Management Systems Lab	--	--	2	2	1	-	25	25	50
10	EL	IT3410	Community Engagement Project	--	--	4	4	2	-	25	25	50
11	BSC	IT3411	Environmental Science	2	--	--	2	Audit	20	20	60	100
			Total	19	1	8	28	22	120	270	410	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	-	-	10	-	04	02	04	02	-
Cumulative Sum	18	13	24	-	10	07	12	02	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	1	--	4	4	20	20	60	100
4	PEC	IT35*4	Program Elective-01	3	--	--	3	3	20	20	60	100
5	MDM	IT3505	Multi-disciplinary Minor - 03	3	--	--	3	3	20	20	60	100
6	OE	IT3506	Open Elective -03	2	--	--	2	2	20	20	60	100
7	PCC	IT3507	Computer Networks Lab	--	--	2	2	1	-	25	25	50
8	PCC	IT3508	Software Engineering Lab	--	--	2	2	1	-	50	-	50
9	PEC	IT35*9	Program Elective-01 Lab	--	--	2	2	1	-	25	25	50
10	MDM	IT3510	Multi-disciplinary Minor – 03 Lab	--	--	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- 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	36	04	16	07	12	02	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	Compiler Construction	3	--	--	3	3	20	20	60	100
2	PCC	IT3602	Advanced Algorithms	3	--	--	3	3	20	20	60	100
3	PCC	IT3603	Cloud Computing and Infrastructure Services	2	--	--	2	2	20	20	60	100
4	PEC	IT36*4	Program Elective-02	3	--	--	3	3	20	20	60	100
5	PEC	IT3605	Advanced Computer Networks	3	--	--	3	3	20	20	60	100
6	MDM	IT3606	Multi-disciplinary Minor - 04	2	--	--	2	2	20	20	60	100
7	VSEC	IT3607	Mobile Application Development Lab	1	--	2	3	2	-	25	25	50
8	PCC	IT3608	Advanced Algorithms Lab	--	--	2	2	1	-	50	-	50
9	PCC	IT3609	Cloud Computing and Infrastructure Services Lab	--	--	2	2	1	-	25	25	50
10	PEC	IT36*0	Program Elective-02 Lab	--	--	2	2	1	-	25	-	25
11	PEC	IT3611	Advanced Computer Networks Lab	--	--	2	2	1	-	25	-	25
			Total	17	0	10	27	22	120	270	410	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 (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	46	12	18	09	12	02	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	Distributed Computing	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	IT3705	Multi-disciplinary Minor - 05	2	--	--	2	2	20	20	60	100
6	PCC	IT3706	Distributed Computing 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

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	53	14	20	09	12	13	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	Parallel Programming: Concepts and Practice	2	--	--	2	2	20	20	60	100
2	PCC	IT3802	Internet of Things	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	IT3805	Multi-disciplinary Minor - 06	2	--	--	2	2	20	20	60	100
6	PCC	IT3806	Parallel Programming: Concepts and Practice 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

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	59	19	22	09	12	22	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	IT3810	Multi-disciplinary Minor –06 (MOOC)	2	--	--	2	2	--	--	100	100
4	EL	IT3811	Internship	--	--	--	-	12	-	250	250	500
Total				2	-	-	2	22	20	270	510	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	-	-	-	-	-	-	-	-	-
Cumulative Sum	18	13	59	19	22	09	12	22	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	IT3815	Multi-disciplinary Minor – 06	2	--	--	2	2	--	--	100	100
3	EL	IT3816	Research Project	--	--	--	-	12	-	250	250	500
			Total	2	-	-	2	22	20	270	510	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	-	-	-	-	-	-	-	-	-
Cumulative Sum	18	13	59	19	22	09	12	22	02

PROGRESSIVE TOTAL CREDITS: 154+22 =176

List of Elective subject:

Elective-I	IT3514: Advanced Web and Mobile Applications	IT3524:Artificial Intelligence	IT3534:Data Warehousing and Data Mining	IT3544: Principles of Distributed Systems
Elective-I Lab	IT3519: Advanced Web and Mobile Applications Lab	IT3529:Artificial Intelligence Lab	IT3539: Data Warehousing and Data Mining Lab	IT3549: Principles of Distributed Systems Lab
Elective-II	IT3614: Advanced Software Engineering	IT3624:Advanced Machine Learning	IT3634: Big Data Analytics	IT3644:Interactive Systems
Elective-II Lab	IT3610: Advanced Software Engineering Lab	IT3620:Advanced Machine Learning Lab	IT3630: Big Data Analytics Lab	IT3640:Interactive Systems Lab
Elective-III	IT3713: Software Testing	IT3723:Natural Language Processing	IT3733: Advanced Database Management Systems	IT3743:Bio-Informatics
Elective-IV	IT3813:Object Oriented Modelling and Design	IT3823:Deep Learning	IT3833: Data Science	IT3843: High Performance Computing

List of Open Elective

Open Elective-I	Internet of Things
Open Elective-II	Formal Methods in Robotics and Automation
Open Elective-III	Augmented Reality and Virtual Reality

List of Multi-disciplinary Minor:

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	Intellectual Property Law	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 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*9	Program Elective-01 Lab	--	--	2	1
SEMESTER VI						
3.	IT36*4	Program Elective-02	3	--	--	3
4.	IT3605	Advanced Computer Networks	3	--	--	3
5.	IT36*0	Program Elective-02 Lab	--	--	2	1
6.	IT3611	Advanced Computer Networks 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	3	--	--	3
6.	IT3309	Design and Analysis of Algorithms Lab	--	--	2	1
SEMESTER IV						
7.	IT3401	Theory of Computer Science	3	1	--	4
8.	IT3402	Operating Systems	3	--	--	3
9.	IT3403	Database Management Systems	2	--	--	2
10.	IT3409	Database Management Systems Lab	--	--	2	1
SEMESTER V						
8.	IT3501	Computer Networks	3	--	--	3
9.	IT3502	Software Engineering	3	--	--	3
10.	IT3503	Machine Learning	3	1	--	4
11.	IT3507	Computer Networks Lab	--	--	2	1
12.	IT3508	Software Engineering Lab	--	--	2	1

SEMESTER VI						
13.	IT3601	Compiler Construction	3	--	--	3
14.	IT3602	Advanced Algorithms	3	--	--	3
15.	IT3603	Cloud Computing and Infrastructure Services	2	--	--	2
16.	IT3608	Advanced Algorithms Lab	--	--	2	1
17.	IT3609	Cloud Computing and Infrastructure Services Lab	--	--	2	1
SEMESTER VII						
18.	IT3701	Distributed Computing	3	--	--	3
19.	IT3702	Cryptography and Cyber Security	3	--	--	3
20.	IT3706	Distributed Computing Lab	-	-	2	1
SEMESTER VIII						
21.	IT3801	Parallel Programming: Concepts and Practice	2	--	--	2
22.	IT3802	Internet Of Things	3	--	--	3
23.	IT3806	Parallel Programming: Concepts and Practice Lab	--	--	2	1
TOTAL						59

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.	IT3306	Open Elective -01	3	--	--	3
2.	IT3310	Open Elective -01 Lab	--	--	2	1
SEMESTER II						
4.	IT3405	Open Elective -02	2	--	--	2
SEMESTER III						
5.	IT3506	Open Elective -03	2	--	--	2
TOTAL						09

BASKET OF MULTIDISCIPLINARY MINOR (MDM)

LIST OF MDM COURSES OFFERED SEMESTER WISE						
SEMESTER III						
Sr. No.	Course Code	Course	L	T	P	Credits
1.	IT3305	Multi-disciplinary Minor - 01	2	--	--	2
SEMESTER IV						
2.	IT3404	Multi-disciplinary Minor - 02	2	--	--	2
SEMESTER V						
3.	IT3505	Multi-disciplinary Minor - 03	3	--	--	3
4.	IT3510	Multi-disciplinary Minor – 03 Lab	--	--	2	1
SEMESTER VI						
5.	IT3606	Multi-disciplinary Minor - 04	2	--	--	2
SEMESTER VII						
6.	IT3705	Multi-disciplinary Minor - 05	2	--	--	2
SEMESTER VIII						
7.	IT3805	Multi-disciplinary Minor - 06	2	--	--	2
TOTAL						13

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	Development Tools Lab	1	--	2	2
SEMESTER VI						
8.	IT3607	Mobile Application Development Lab	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	--	--	4	2
SEMESTER VII						
2.	IT3704	Research Methodology	3	--	--	3
3.	IT3707	Project Phase – I	--	--	16	8
SEMESTER VIII						
7.	IT3807	Project Phase – II	--	--	18	9
TOTAL						22

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
SEMESTER VIII (Research Mode)						
1.	IT3812	MOOC – I	--	--	--	4
2.	IT3814	MOOC – II	--	--	--	4
TOTAL						20