



Jyothi
Engineering College
(AUTONOMOUS)

Reaccredited with NAAC (Grade A) and
NBA Programmes* (*CE, CS, EC, EE, ME, MR)
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A Centre of Excellence in Science and Technology by the Catholic Archdiocese of Trichur

B. TECH CURRICULUM - 2026



Semester I to VIII

Department of Civil Engineering

Branch Code: CE

Recommended by BoS on 12 / 11 / 2025

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(Reference: JEC/2025/AC/MOM/02/AC/02/A2)

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LIST OF ABBREVIATIONS

L	Lecture hours per week
T	Tutorial hours per week
P	Practical hours per week
H	Hands on project per week
S	Self-learning hours per week
PO	Programme Outcome
PSO	Programme Specific Outcome
PEO	Programme Educational Objective
WK	Knowledge and Attitude Profile
BS	Basic Science Courses
ES	Engineering Science Courses
HM	Humanities, Social Science and Management Courses
PC	Programme Core Courses
PE	Programme Elective Courses
IK	Indian Knowledge System
HW	Health and Wellness
SA	Student Activities
TC	Theory Course
PL	Practical Course
TP	Theory Course Embedded with Practical
PB	Theory Course Embedded with Micro projects
PI	Internship / Seminar / Project
SE	Skill Enhancement Courses.

VISION & MISSION OF THE INSTITUTION

VISION: To be a global leader in education, nurturing ethical professionals, fostering holistic excellence and sustainable societal impact..

MISSION

- **Excellence in Education:** Provide outcome-based and industry-relevant education that builds technical competence, innovation, and lifelong learning.
- **Ethics and Values:** Inspire integrity, empathy, and social responsibility to develop ethical and service-oriented professionals.
- **Research, Innovation, and Entrepreneurship:** Encourage creativity, research, and entrepreneurship for sustainable technological and economic growth.
- **Holistic and Global Development:** Promote all-round development, leadership, and global competence through collaboration and community engagement

VISION & MISSION OF THE DEPARTMENT

VISION: To emerge as a Centre of Excellence in Civil Engineering, nurturing ethical professionals and global leaders contributing to sustainable societal development.

MISSION

- To impart quality education in Civil Engineering through state-of-the-art technologies, industry interaction and lifelong learning to develop competent professionals.
- To foster integrity, empathy, professional ethics and social responsibility to develop ethical and socially committed Civil Engineering professionals and academicians.
- To nurture research-driven, innovative, and entrepreneurial civil engineers for sustainable infrastructure and societal development.
- To promote holistic growth, leadership, and global competence in Civil Engineering through industry collaboration and community engagement.

PROGRAMME EDUCATIONAL OBJECTIVES

PEO 1	Graduates will apply civil engineering knowledge, modern tools, and professional practices to plan, design, construct, and manage infrastructure projects.
PEO 2	Graduates will engage in research, innovation, higher education, entrepreneurship, and lifelong learning to address emerging challenges in civil engineering and societal development.
PEO 3	Graduates will demonstrate ethical values, leadership, teamwork, and social responsibility while contributing to sustainable and resilient communities at local and global levels.

PROGRAMME SPECIFIC OUTCOMES

PSO 1	Apply civil engineering principles, modern tools, and professional practices to plan, analyse, design, and execute infrastructure projects.
PSO 2	Apply theoretical concepts and technical skills in developing appropriate sustainable civil engineering solutions through self-learning, research and teamwork.
PSO 3	Integrate ethical, environmental, and societal considerations in addressing problems related to water, sanitation, soil, transportation, and urban development

PROGRAMME OUTCOMES

PO1	Engineering Knowledge: Apply knowledge of mathematics, natural science, computing, engineering fundamentals and an engineering specialization as specified in WK1 to WK4 respectively to develop the solution of complex engineering problems
PO2	Problem Analysis: Identify, formulate, review research literature and analyze complex engineering problems reaching substantiated conclusions with consideration for sustainable development. (WK1 to WK4)
PO3	Design/Development of Solutions: Design creative solutions for complex engineering problems and design/develop systems/components/processes to meet identified needs with consideration for the public health and safety, whole-life cost, net zero carbon, culture, society and environment as required. (WK5)
PO4	Conduct Investigations of Complex Problems: Conduct investigations of complex engineering problems using research-based knowledge including design of experiments, modelling, analysis & interpretation of data to provide valid conclusions. (WK8)
PO5	Engineering Tool Usage: Create, select and apply appropriate techniques, resources and modern engineering & IT tools, including prediction and modelling recognizing their limitations to solve complex engineering problems. (WK2 and WK6)
PO6	The Engineer and The World: Analyze and evaluate societal and environmental aspects while solving complex engineering problems for its impact on sustainability with reference to economy, health, safety, legal framework, culture and environment. (WK1, WK5, and WK7)
PO7	Ethics: Apply ethical principles and commit to professional ethics, human values, diversity and inclusion; adhere to national & international laws. (WK9)
PO8	Individual and Collaborative Team work: Function effectively as an individual, and as a member or leader in diverse/multi-disciplinary teams.
PO9	Communication: Communicate effectively and inclusively within the engineering community and society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations considering cultural, language, and learning differences
PO10	Project Management and Finance: Apply knowledge and understanding of engineering management principles and economic decision-making and apply these to one's own work, as a member and leader in a team, and to manage projects and in multidisciplinary environments.
PO11	Life-Long Learning: Recognize the need for, and have the preparation and ability for i) independent and life-long learning ii) adaptability to new and emerging technologies and iii) critical thinking in the broadest context of technological change. (WK8)

KNOWLEDGE AND ATTITUDE PROFILE (WK)

WK1	A systematic, theory-based understanding of the natural sciences applicable to the discipline and awareness of relevant social sciences.
WK2	Conceptually based mathematics, numerical analysis, data analysis, statistics and formal aspects of computer and information science to support detailed analysis and modelling applicable to the discipline.
WK3	A systematic, theory-based formulation of engineering fundamentals required in the engineering discipline.
WK4	Engineering specialist knowledge that provides theoretical frameworks and bodies of knowledge for the accepted practice areas in the engineering discipline; much is at the forefront of the discipline.
WK5	Knowledge, including efficient resource use, environmental impacts, whole-life cost, re-use of resources, net zero carbon, and similar concepts, that supports engineering design and operations in a practice area.
WK6	Knowledge of engineering practice (technology) in the practice areas in the engineering discipline.
WK7	Knowledge of the role of engineering in society and identified issues in engineering practice in the discipline, such as the professional responsibility of an engineer to public safety and sustainable development.
WK8	Engagement with selected knowledge in the current research literature of the discipline, awareness of the power of critical thinking and creative approaches to evaluate emerging issues.
WK9	Ethics, inclusive behavior and conduct. Knowledge of professional ethics, responsibilities, and norms of engineering practice. Awareness of the need for diversity by reason of ethnicity, gender, age, physical ability etc. with mutual understanding and respect, and of inclusive attitudes.

CUMULATIVE CREDITS

Cumulative credits for the entire B. Tech program is 170 credits

CREDIT ASSIGNMENT

[Ref: National Credit Framework – Sept 2022]

Course Delivery	Code	Hours per Week	Credit
Lecture	L	1	1
Tutorial	T	1	1
Practical	P	2	1
Hands on Project	H	3/4	1

CREDIT DISTRIBUTION: YEAR/SEMESTER WISE

Year	ODD Semester	Even Semester	Total credit
First	20	22	42
Second	25	24	49
Third	23	23	46
Fourth	18	12	30
Academic Credits			167
Student Activities			3
B Tech			170
B Tech with Honours			185
B Tech with Minor			185
B Tech with Minor and Honours			200

COURSE CATEGORY AND CREDIT DISTRIBUTION

Sl.	Course Category	Nomenclature	Credits	Number of Courses
1	Basic Science Courses	BS	21	6
2	Engineering Science Courses	ES	28	10
3	Humanities, Social Science and Management	HM	10	6
4	Programme Core Courses	PC	64	22
5	Project Work	PI	8	2
6	Seminar	PI	2	1
7	Programme Elective Courses	PE	20	6
8	Open Elective Courses/Industry Linked Elective Courses.	OE/IE	8	3
9	Skill Enhancement Courses	SE	3	3
10	Indian Knowledge System	IK	2	1
11	Health and Wellness	HW	1	1
12	Student Activities	SA	3	-
Total			170	61

COURSE TYPES AND ASSESSMENT PATTERN

Course Type	Nomenclature	Credits	Assessment pattern		
			CIE	ESE	Total
Workshop	PL	1	100	NA	100
Theory Course	TC	1/2/3/4	40	60	100
Lab Course	PL	2	50	50	100
Theory + Practical	TP	4	60	40	100
Theory + Practical	TP	1	100	NA	100
Theory + Project	PB	4	60	40	100
Project	PT	3, 4	50	50	100
Seminar	SR	2	100	NA	100
Skill Enhancement Courses.	SE	1	100	NA	100

SEMESTER I

Sl.	Slot	Course Code	Course Category	Course Type	Course Title	Hours/Week					Credits	Total Marks		Total
						L	T	P	H	S		CIE	ESE	
1	A	JIBST121	BS	TC	Linear Algebra and Calculus	3	0	0	0	4.5	3	40	60	100
2	B	J1BSP132	BS	TP	Engineering Physics	3	0	2	0	5.5	4	60	40	100
3	C	J1ESP103	ES	TP	Algorithmic Thinking with Python	3	0	2	0	5.5	4	60	40	100
4	D	J1EST104	ES	TC	Engineering Mechanics	2	1	0	0	3.5	3	40	60	100
5	E	J1EST145	ES	TC	Engineering Science for Construction	4	0	0	0	5.5	4	40	60	100
6	F	J1HMP126 / J1HWP126	HM /HW	TP	Life Skills and Professional Communication / Health and Wellness	1	0	1	0	1	1	100	-	100
7	J	J1ESL147	ES	PL	Engineering workshop	0	0	2	0	1	1	100	-	100
8	S	J1SET109	SE	TP	Skill Enhancement Course	0	0	0	0	2	-			-
Total						13	1	8	0	28.5	20			700

SEMESTER II

Sl.	Slot	Course Code	Course Category	Course Type	Course Title	Hours/Week					Credits	Total Marks		Total
						L	T	P	H	S		CIE	ESE	
1	A	J1BST221	BS	TC	Vector Calculus, Partial Derivatives and Transforms	3	0	0	0	4.5	3	40	60	100
2	B	J1BSP222	BS	TP	Engineering Chemistry	3	0	2	0	5.5	4	60	40	100
3	C	J1EST233	ES	TC	Basics of Mechanical and Electrical Engineering	3	0	0	0	4.5	3	40	60	100
4	D	J1ESP244	ES	TP	Engineering Drawing	3	0	2	0	5.5	4	60	40	100
5	E	J1EST205	ES	TC	Engineering Entrepreneurship and IPR	2	0	0	0	3	2	40	60	100
6	F	J1HMP126/ J1HWP126	HM/HW	TP	Life Skills and Professional Communication / Health and Wellness	1	0	1	0	2	1	100	-	100
7	G	J1CET207	PC	TC	Surveying and Geomatics	3	0	0	0	4.5	3	40	60	100
8	J	J1ESL238	ES	PL	Civil Engineering workshop	0	0	2	0	1	1	100	-	100
9	S	J1SET109	SE	TP/TC	Skill Enhancement Course	0	0	0	0	2	1	-	-	-
Total						17	1	6	0	30.5	22			800

SEMESTER III

Sl.	Slot	Course Code	Course Category	Course Type	Course Title	Hours/Week					Credits	Total Marks		Total
						L	T	P	H	S		CI E	ESE	
1	A	J1BST321	BS	TC	Fourier Transforms and Complex Analysis	3	0	0	0	4.5	3	40	60	100
2	B	J1CET302	PC	TC	Strength of Materials	2	1	0	0	3.5	3	40	60	100
3	C	J1CEZ303	PC	PB	Construction Technology and Management	3	0	0	2	6.5	4	60	40	100
4	D	J1CEP304	PC	TP	Fluid Mechanics	3	0	2	0	5.5	4	60	40	100
5	E	J1EST315	ES	TC	Introduction to Artificial Intelligence and Data science	3	1	0	0	5	4	40	60	100
6	F	J1HMT346 / J1HMT 436	HM	TC	Economics for Engineers /Engineering Ethics and Sustainable Development	2	0	0	0	3	2	40	60	100
7	J	J1CEL307	PC	PL	Civil Engineering Software lab – 1	0	0	3	0	1.5	2	50	50	100
8	K	J1CEL308	PC	PL	Material Testing Lab	0	0	3	0	1.5	2	50	50	100
9	S	J1SET3N9	SE	TP/TC	Skill Enhancement Course - 1	1	0	0	0	1.5	1	100	-	100
Total						17	2	8	2	32.5	25			900

SEMESTER IV

Sl.	Slot	Course Code	Course Category	Course Type	Course Title	Hours/Week					Credits	Total Marks		Total
						L	T	P	H	S		CI E	ESE	
1	A	J1CET401	PC	TC	Structural Analysis - 1	2	1	0	0	3.5	3	40	60	100
2	B	J1CET402	PC	TC	Transportation Engineering	3	0	0	0	4.5	3	40	60	100
3	C	J1CEZ403	PC	PB	Design of Concrete Structures	3	0	0	2	6.5	4	60	40	100
4	D	J1BSP434	BS	TP	Statistics and Numerical Methods	3	0	2	0	5.5	4	60	40	100
5	E	J1CET4N5	PE	TC	Programme Elective -1	3	0	0	0	4.5	3	40	60	100
6	F	J1HMT346 / J1HMT 436	HM	TC	Economics for Engineers /Engineering Ethics and Sustainable Development	2	0	0	0	3	2	40	60	100
7	J	J1CEL407	PC	PL	Civil Engineering Software lab – 2	0	0	3	0	1.5	2	50	50	100
8	K	J1CEL408	PC	PL	Concrete lab	0	0	3	0	1.5	2	50	50	100

9	S	J1SET4N9	SE	TC/TP	Skill Enhancement Course - 2	1	0	0	0	1.5	1	100	-	100
Total						17	1	8	2	32	24			900

SEMESTER V

Sl.	Slot	Course Code	Course Category	Course Type	Course Title	Hours/Week					Credits	Total Marks		Total
						L	T	P	H	S		CI E	ES E	
1	A	J1CET501	PC	TC	Environmental Engineering	3	0	0	0	4.5	3	40	60	100
2	B	J1CET502	PC	TC	Soil Mechanics	2	1	0	0	3.5	3	40	60	100
3	C	J1CEZ503	PC	PB	Structural analysis -2	3	0	0	2	6.5	4	60	40	100
4	D	J1CET504	PC	TC	Hydrology and Water Resources Engineering	3	0	0	0	4.5	3	40	60	100
5	E	J1CEP5N5	PE	TP	Programme Elective-2	3	0	2	0	5.5	4	60	40	100
6	F	J1IKT5N6	IK	TC	Indian Knowledge System	2	0	0	0	3	2	40	60	100
7	J	J1CEL507	PC	PL	Transportation Engineering lab	0	0	3	0	1.5	2	50	50	100
8	K	J1CEL508	PC	PL	Environmental Engineering lab	0	0	3	0	1.5	2	50	50	100
Total						17	1	8	2	30.5	23			800

SEMESTER VI

Sl.	Slot	Course Code	Course Category	Course Type	Course Title	Hours/week					Credits	Total Marks		Total
						L	T	P	H	S		CI E	ESE	
1	A	J1CET601	PC	TC	Foundation Engineering	2	1	0	0	3.5	3	40	60	100
2	B	J1CET602	PC	TC	Quantity Surveying & Valuation	2	1	0	0	3.5	3	40	60	100
3	C	J1EST6N3	ES	TC	Design Thinking and Product Development	2	0	0	0	3	2	40	60	100
4	D	J1CEP604	PC	TP	Design of Steel Structures	3	0	2	0	5.5	4	60	40	100
5	E	J1CEZ6N5	PE	PB	Programme Elective -3	3	0	0	2	6.5	4	60	40	100
6	F	J1XXO6N6 / J1XXI6N6	OE/IE	TC	Open Elective-1 /Industry Linked Elective-1	2	0	0	0	3	2	40	60	100
7	J	J1CEL607	PC	PL	Geotechnical Engineering Lab	0	0	2	0	1	2	50	50	100

8	K	J1CED608	PC	PI	Mini project	0	0	0	6	6	3	50	50	100
Total						14	2	4	8	32	23			800

SEMESTER VII

Sl.	Slot	Course Code	Course Category	Course Type	Course Title	Hours/Week					Credits	Total Marks		Total
						L	T	P	H	S		CI E	ES E	
1	A	J1CET7N1/ J1CEM7N1	PE	TC	Programme Elective-4/ MOOC/ Self Study	3	0	0	0	4.5	3	40	60	100
2	B	J1CET7N2/ J1CEM7N2	PE	TC	Programme Elective 5/ MOOC/ Self Study	3	0	0	0	4.5	3	40	60	100
3	C	J1XXO7N3/ J1XXI7N3/ J1XXM7N3	OE / IE	TC	Open Elective-2/ ILE/ MOOC/ Self Study	3	0	0	0	4.5	3	40	60	100
4	D	J1HMT7N4/ J1HMM7N4	HM	TC	HM-6/ MOOC/ Self Study	2	0	0	0	3	2	40	60	100
5	E	J1HMT705/ J1HMM7N5	HM	TC	Constitution of India/ MOOC/ Self Study	1	0	0	0	1.5	1	40	60	100
6	J	J1CEQ706	PI	SR	Seminar	0	0	2	0	1	2	100	-	100
7	K	J1CED707/ J1INT707	PI	PT	Project/Internship (4-6 Months)	0	0	0	16	16	4	100	-	100
Total						12	0	2	16	35	18			700

SEMESTER VIII

Sl.	Slot	Course Code	Course Category	Course Type	Course Title	Hours					Credits	Total Marks		Total
						L	T	P	H	S		CIE	ESE	
1	A	J1CET8N1/ J1CEM8N1	PE	TC	Programme Elective-6/ MOOC / Self Study	3	0	0	0	4.5	3	40	60	100
2	B	J1XXO8N2/ J1XXM8N2	OE	TC	Open Elective-3/ MOOC / Self Study	3	0	0	0	4.5	3	40	60	100
3	C	J1HMT8N3/ J1HMM8N3	HM	TC	HM-7/MOOC / Self Study	2	0	0	0	4.5	2	40	60	100
4	K	J1CED804/ J1INT804	PI	PT	Project/ Internship (4-6 Months)	0	0	0	16	16	4	50	50	100
Total						8	0	0	16	29.5	12			400

APPENDIX-- COURSE CATEGORY

1.PROGRAMME CORE COURSES

Sl.	Semester	Course Code	Course Name	Course Type	Credits
1	S2	J1CET207	Surveying & Geomatics	TC	3
2	S3	J1CET302	Strength of Materials	TC	3
3	S3	J1CEZ303	Construction Technology and Management	PB	4
4	S3	J1CEP304	Fluid mechanics	TP	4
5	S3	J1CEL307	Civil Engineering Software lab - 1	PL	2
6	S3	J1CEL308	Material Testing Lab	PL	2
7	S4	J1CET401	Structural Analysis-1	TC	3
8	S4	J1CET402	Transportation Engineering	TC	3
9	S4	J1CEZ403	Design of Concrete Structures	PB	4
10	S4	J1CEL407	Civil Engineering Software lab – 2	PL	2
11	S4	J1CEL408	Concrete lab	PL	2
12	S5	J1CET501	Environmental Engineering	TC	3
13	S5	J1CET502	Soil Mechanics	TC	3
14	S5	J1CEZ503	Structural Analysis-2	PB	4
15	S5	J1CET504	Hydrology and Water Resources Engineering	TC	3
16	S5	J1CEL507	Transportation Engineering lab	PL	2
17	S5	J1CEL508	Environmental Engineering lab	PL	2
18	S6	J1CET601	Foundation Engineering	TC	3
19	S6	J1CET602	Quantity Surveying & Valuation	TC	3
20	S6	J1CEP604	Design of Steel Structures	TP	4
21	S6	J1CEL607	Geotechnical Engineering Lab	PL	2
22	S6	J1CED608	Mini project	PI	3
Total Credits					64

2. PROGRAMME ELECTIVE

2.1 PROGRAMME ELECTIVE-1 (SEMESTER-IV)

Sl.	Slot	Subject Code	Subject	Category
1	E	J1CET415	Advanced Strength of Materials	Stream Elective -1
2	E	J1CET425	Construction Equipment & Methods	Stream Elective -2
3	E	J1CET435	Sustainable Urban Transport Systems	Stream Elective -3
4	E	J1CET445	Air Quality Management	Stream Elective -4
5	E	J1CET455	Geology	Stream Elective -5
6	E	J1CET465	Environmental Laws and Policy	General Elective – 1
7	E	J1CET475	Disaster Management	General Elective - 2

2.2 PROGRAMME ELECTIVE-2 (SEMESTER-V)

Sl.	Slot	Subject Code	Subject	Category
1	E	J1CEP515	Advanced Design of Concrete Structures	Stream Elective-1
2	E	J1CEP525	Construction Planning, Scheduling & Control	Stream Elective-2
3	E	J1CEP535	Traffic Engineering	Stream Elective-3
4	E	J1CEP545	Wastewater treatment and recycling	Stream Elective-4
5	E	J1CEP555	Soil exploration testing and evaluation	Stream Elective-5
6	E	J1CEP565	Sustainable Materials and Construction	General Elective – 1
7	E	J1CEP575	Intelligent Transportation Systems	General Elective - 2

2.3 PROGRAMME ELECTIVE-3 (SEMESTER-VI)

Sl.	Slot	Subject Code	Subject	Category
1	E	J1CEZ615	Design of Hydraulic Structures	Stream Elective-1
2	E	J1CEZ625	Green Built Environment	Stream Elective-2
3	E	J1CEZ635	GIS in Transportation Engineering	Stream Elective-3
4	E	J1CEZ645	Remote Sensing and GIS	Stream Elective-4
5	E	J1CEZ655	Ground Improvement Technique	Stream Elective-5

6	E	J1CEZ665	Prefabricated Structures	General Elective – 1
7	E	J1CEZ675	Climate Resilient Infrastructure	General Elective - 2

2.4 PROGRAMME ELECTIVE-4 (SEMESTER-VII)

Sl.	Slot	Subject Code	Subject	Category
1	A	J1CET711	Advanced Concrete Technology	Stream Elective-1/MOOC
2	A	J1CET721	Construction Safety & Quality Management	Stream Elective-2 /MOOC
3	A	J1CET731	Pavement analysis and Design	Stream Elective-3 /MOOC
4	A	J1CET741	Sustainable Groundwater Management	Stream Elective-4 /MOOC
5	A	J1CET751	Soil reinforcement and geo-synthetics	Stream Elective-5 /MOOC
6	A	J1CET761	Environmental Impact Assessment	General Elective-1 /MOOC
7	A	J1CET771	Characterization of Construction Materials	General Elective-2 /MOOC

2.5 PROGRAMME ELECTIVE-5(SEMESTER-VII)

Sl.	Slot	Subject Code	Subject	Category
1	B	J1CET712	Retrofitting & Rehabilitation of Structures	Stream Elective-1/MOOC
2	B	J1CET722	Modern Construction Methods	Stream Elective-2 /MOOC
3	B	J1CET732	Urban Transportation Systems Planning	Stream Elective-3 /MOOC
4	B	J1CET742	Ground Water Hydrology	Stream Elective-4 /MOOC
5	B	J1CET752	Advanced Soil Mechanics	Stream Elective-5 /MOOC
6	B	J1CET762	Air pollution and Control	General Elective-1 /MOOC
7	B	J1CET772	Advanced Construction Materials	General Elective-2 /MOOC

2.6 PROGRAMME ELECTIVE-6(SEMESTER-VIII)

Sl.	Slot	Subject Code	Subject	Category
1	A	J1CET811	Earth Quake Resistant Building Design	Stream Elective-1/MOOC
2	A	J1CET821	Building Services	Stream Elective-2 /MOOC
3	A	J1CET831	Multimodal Urban Transportation Systems	Stream Elective-3 /MOOC
4	A	J1CET841	Municipal Solid Waste Management	Stream Elective-4 /MOOC

5	A	J1CET851	Geotechnical Earthquake Engineering	Stream Elective-5 /MOOC
6	A	J1CET861	Smart Cities and Urban Infrastructure	General Elective-1 /MOOC
7	A	J1CET871	Climate Hazards and Disaster Mitigation	General Elective-2 /MOOC

3. OPEN/INDUSTRY LINKED ELECTIVES

3.1 OPEN/INDUSTRY LINKED ELECTIVES (SEMESTER-VI)

Sl.	Slot	Subject Code	Subject	Category
1	F	J1CEO616	Infrastructure Planning and Management	Open Elective
2	F	J1CEO626	Environmental Policy and Regulation	Open Elective
3	F	J1CEO636	Natural Disaster management	Open Elective
4	F	J1CEO646	Functional Design Of Buildings	Open Elective
5	F	J1CEO656	Sustainability & Environment	Open Elective

3.2 OPEN/INDUSTRY LINKED ELECTIVES (SEMESTER-VII)

Sl.	Slot	Subject Code	Subject	Category
1	C	J1CEO713	Sustainable Transportation Systems	Open Elective
2	C	J1CEO723	Environment Health and Safety	Open Elective
3	C	J1CEO733	Water Resource & Watershed Management	Open Elective
4	C	J1CEO743	Forensic Engineering	Open Elective
5	C	J1CEO753	Environmental Assessment and Management	Open Elective

3.4 OPEN/INDUSTRY LINKED ELECTIVES (SEMESTER-VIII)

Sl.	Slot	Subject Code	Subject	Category
1	B	J1CEO812	Integrated Waste Management	Open Elective
2	B	J1CEO822	Groundwater Resource Management	Open Elective
3	B	J1CEO832	Irrigation and Drainage Engineering	Open Elective
4	B	J1CEO842	Fundamentals of Building Construction	Open Elective
5	B	J1CEO852	Geographic Information System	Open Elective

4. HUMANITIES, SOCIAL SCIENCE AND MANAGEMENT

Sl.	Semester	Course Code	Course	Course Type	Credits
1	S1/S2	J1HMP126	Life Skills and Professional Communication	TP	1
2	S3/S4	J1HMT346	Economics for Engineers	TC	2
3	S3/S4	J1HMT436	Engineering Ethics and Sustainable Development	TC	2
4	S7	J1HMT7N4	Elective (Project Management/Foreign Languages)	TC	2
5	S7	J1HMT705/ J1HMM7N5	Constitution Of India (MOOC)	TC	1
6	S8	J1HMT8N3	Elective	TC	2
Total Credits					10

5. INDIAN KNOWLEDGE SYSTEM

Sl.	Semester	Course Code	Course	Course Type	Credits
1	S5	J1IKT516	An Introduction to Urban Ecological Heritage: Theories and Applications	TC	2
2	S5	J1IKT526	Introduction to Ancient Indian Technology	TC	2
Total Credits					2

6. HEALTH AND WELLNESS

Sl.	Semester	Course Code	Course	Course Type	Credits
1	S1/ S2	J1HWP126	Health and Wellness	TP	1
Total Credits					1

7. BASIC SCIENCE COURSES

Sl.	Semester	Course Code	Course	Course Type	Credits
1	S1	J1BST121	Linear Algebra and Calculus	TC	3
2	S1	J1BSP132	Engineering Physics	TP	4
3	S2	J1BST221	Vector Calculus, Partial Differential Equations and Transforms	TC	3
4	S2	J1BSP222	Engineering Chemistry	TP	4
5	S3	J1BST321	Fourier Transforms and Complex Analysis	TC	3
6	S4	J1BSP434	Probability, Statistics and Numerical methods	TP	4
Total Credits					21

8. ENGINEERING SCIENCE COURSES

Sl.	Semester	Course Code	Course	Course Type	Credits
1	S1	J1ESP103	Algorithmic Thinking with Python	TP	4
2	S1	J1EST104	Engineering Mechanics	TC	4
3	S1	J1EST145	Engineering Science for Construction Materials	TC	3
4	S1	J1ESL147	Engineering workshop	PL	1
5	S2	J1EST233	Basics of Mechanical & Electrical Engineering	TC	3
6	S2	J1ESP244	Engineering Drawing	TP	4
7	S2	J1EST205	Engineering Entrepreneurship and IPR	TC	2
8	S2	J1ESL238	Introduction to Civil Engineering Lab	PL	1
9	S3	J1EST315	Introduction to Artificial Intelligence and Data science	TC	4
10	S6	J1EST603	Design Thinking and Product Development	TC	2
Total Credits					28

9. SKILL ENHANCEMENT COURSES

Sl.	Semester	Course Code	Course	Course Type	Credits
1	S1	J1SET1N9	Skill Enhancement Course		-
2	S2	J1SET1N9	Skill Enhancement Course		1
2	S3	J1SET3N9	Skill Enhancement Course - 1		1
3	S4	J1SET4N9	Skill Enhancement Course - 2		1
Total Credits					3