B. TECH CURRICULUM - 2025

(AUTONOMOUS)
CREATING TECHNOLOGY
LEADERS OF TOMORROW
ESTD 2002

Semester I to VIII

Civil Engineering

Branch Code: CE

Jyothi Engineering College (AUTONOMOUS)

Reaccredited with NAAC (Grade A) and
NBA Programmes* (*CE, CS, EC, EE, ME, MR)
Jyothi Hills, P. O. Vettikkattiri, Cheruthuruthy
Thrissur, Kerala, India, 679531
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A Centre of Excellence in Science and Technology by the Catholic Archdiocese of Trichur

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VISION & MISSION OF THE INSTITUTE

VISION : Creating eminent and ethical leaders through quality professional education with emphasis on holistic excellence.

MISSION

- To emerge as an institution par excellence of global standards by imparting quality engineering and other professional programmes with state-of-the-art facilities.
- To equip the students with appropriate skills for a meaningful career in the global scenario.
- To inculcate ethical values among students and ignite their passion for holistic excellence through social initiatives.
- To participate in the development of society through technology incubation, entrepreneurship and industry interaction.

VISION & MISSION OF THE DEPARTMENT

VISION: To emerge as a Centre of Excellence in Civil Engineering through quality professional education and to create eminent leaders with values committed to the profession and society.

MISSION

- To impart state of the art education and to provide industry exposure to students.
- To create civil engineers who successfully adapt and innovate solutions for the built environment.
- To inspire and transform the students to hard core professionals and academicians with ethical.

PROGRAMME EDUCATIONAL OBJECTIVES

1. Graduates will have concrete knowledge in the application of necessary mathematical tools, scientific theories and modern developments in civil engineering.
2. Graduates will understand the societal needs and will be committed in developing optimal solutions.
3. Graduates will pursue higher education, research or entrepreneurship apart from being employable.
4. Graduates will be competent to face challenges in civil engineering through lifelong learning process and will have high ethical values, honesty and a sense of responsibility.

PROGRAMME SPECIFIC OUTCOMES

1. Acquire the ability to plan, furnish and/or analyse designs and implement infrastructure related systems, produce related documents, drawings and reports, and quantity estimates, related to civil engineering domain.
2. Apply theoretical concepts and technical skills in developing appropriate sustainable solutions through self -learning, research and teamwork for technical problems requiring civil engineering interventions towards a better quality of life.
3. Utilise the acquired knowledge in Environmental Engineering and Transportation Engineering to conceptualise, analyse, evaluate specific problems in Water Quality Management, Sanitation, Pavement Design, Traffic Engineering and Transportation Planning and develop appropriate solutions.

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)

FIRST SEMESTER (July-December): Civil Engineering														
10 Days Compulsory Induction Program and UHV														
Sl. No:	**Slot**	**Course Code**	**Course Type**	**Course Category**	**Course Title (Course Name)**	**Credit Structure**				**SS**	**Total Marks**		**Credits**	**Hrs. /Week**
						L	**T**	**P**	**R**		**CIA**	**ESE**		
1	A	25MAT102	BSC	GC	Mathematics for Physical Science-1	3	0	0	0	4.5	40	60	3	3
2	B S1/ S2	25PHT103	BSC	GC	Physics for Physical Science	3	0	2	0	5.5	40	60	4	5
		25CHT102			Chemistry for Physical Science									
3	C	25EST106	ESC	GC	Engineering Mechanics	3	0	0	0	4.5	40	60	3	3
4	D	25EST107	ESC	GC	Introduction to Mechanical Engineering & Civil Engineering (Part1: Mechanical Engineering)	2	0	0	0	3	20	30	2+2=4	4
					(Part 2: Civil Engineering)	2	0	0	0	3	20	30		
5	F	25EST105	ESC	UC	Algorithmic Thinking with Python	3	0	2	0	5.5	40	60	4	5
6	L	25ESL108	ESC	GC	Engineering Workshop	0	0	2	0	1	50	50	1	2
7	I* S1/ S2	25HUT106	HWP	UC	Health and wellness	1	0	1	0	0	50	0	1	2/3
		25HUT107	HMC		Life Skills and Professional Communication	2	0	1	0	3	100	0		
8	S_1/ S_2	25SEC101	SEC	UC	Skill Enhancement Course: Digital 101(30 Hours, NASSCOM)	MOOC				2			-	
Total										**30/ 32**			**20**	**24/ 25**
Bridge Course (Mathematics or Introduction to Computer Science) *: Total 15 Hrs.														

Valuation for HMC courses will be done at college level, Question papers will be provided by the University.
No Grade Points will be awarded for the MOOC course and I slot course.

- L-T-P-R: Lecture-Tutorial-Practical-Project
- SS(Self Study) Hours= 1.5L+0.5 T+0.5P+R
- CIA: Continuous Internal Assessment, ESE: End Semester Examination

Digital 101 (NASSCOM)		
Sl. No:	**Technologies Covered**	**Hours**
1	Artificial intelligence and Big Data Analytics (AI/BDA)	11
2	Internet of Things (IoT)	2.5
3	Cyber Security	2.5
4	Block Chain	2.5
5	Robotic Process Automation	1.5
6	Augmented and Virtual Reality (AR and VR)	2.5
7	Cloud Computing	2.5
8	3 D Printing and Modelling	2
9	Web, Mobile Dev and Marketing	2
10	Responsible AI	1
	Total Hours	**30**

Note: *Engineering Physics, Engineering Chemistry, Health and Safety and Life skill and Life Skills and Professional Communication shall be offered in both S1 and S2. Institutions can advise students belonging to about 50% of the number of branches in the Institution to opt for Engineering Physics/ Engineering Chemistry in slot B and Health and wellness/ Life Skills and Professional Communication in slot in slot I in the first semester and remaining 50% to opt similarly in the second semester*

SECOND SEMESTER (January-June): Civil Engineering														
Sl. No:	**Slot**	**Course Code**	**Course Type**	**Course Category**	**Course Title (Course Name)**	**Credit Structure**				**SS**	**Total Marks**		**Credits**	**Hrs. /Week**
						L	**T**	**P**	**R**		**CIA**	**ESE**		
1	A	25MAT202	BSC	GC	Mathematics for Physical Science-2	3	0	0	0	4.5	40	60	3	3
2	B S1/ S2	25PHT103	BSC	GC	Physics for Physical Science	3	0	2	0	5.5	40	60	4	5
		25CHT102			Chemistry for Physical Science									
3	C	25EST103	ESC	GC	Engineering Graphics and Computer Aided Drawing	2	0	2	0	4	40	60	3	4
4	D	25EST204	ESC	GC	Basic Electrical & Electronics Engineering (Part 1: Electrical Engineering)	2	0	0	0	3	20	30	2+2=4	4
					(Part 2: Electronics Engineering)	2	0	0	0	3	20	30		
5	E	25CET205	PC	PC	Mechanics of Solids	3	1	0	0	5	40	60	4	4
6	F	25EST206	ESC	UC	Engineering Entrepreneurship & IPR	3	0	0	0	4.5	60	40	3	3
7	I* S1/ S2	25HUT106	HWP	UC	Health and wellness	1	0	1	0	0	50	0	1	2/3
		25HUT107	HMC		Life Skills and Professional Communication	2	0	1	0	3	100	0		
8	L	25ESL209	ESC	GC	Civil Engineering Drafting lab	0	0	2	0	1	50	50	1	2
9	S_1/ S_2	25SEC101	SEC	UC	Skill Enhancement Course: Digital 101(30 Hours, NASSCOM)	MOOC							1	
Total										**34**			**24**	**27/ 28**

No Grade Points will be awarded for the MOOC course and I slot course.

THIRD SEMESTER (July-December)														
Sl. No:	**Slot**	**Course Code**	**Course Type**	**Course Category**	**Course Title (Course Name)**	**Credit Structure**				**SS**	**Total Marks**		**Credits**	**Hrs./ Week**
						L	**T**	**P**	**R**		**CIA**	**ESE**		
1	A	25MAT302	BSC	GC	Mathematics for Physical Science-3	3	0	0	0	4.5	40	60	3	3
2	B	25CET302	PC	PC	Fluid mechanics	3	1	0	0	5	40	60	4	4
3	C	25CET303	PC	PC	Structural analysis-I	3	1	0	0	5	40	60	4	4
4	D	25CEZ304	PC-PBL	PB	Surveying & Geomatics	3	0	0	1	5.5	60	40	4	4
5	F	25EST305	ESC	GC	Introduction to Artificial Intelligence and Data Science	3	1	0	0	5	40	60	4	4
6	G S3/S4	25HUT346	HMC	UC	Economics for Engineers	2	0	0	0	3	50	50	2	2
		25HUT347			Engineering Ethics and Sustainable Development									
7	L	25CEL307	PCL	PC	Survey Lab	0	0	3	0	1.5	50	50	2	3
8	Q	25CEL308	PCL	PC	Fluid mechanics Lab	0	0	3	0	1.5	50	50	2	3
9	R/M		VAC		Remedial/minor/course	3	1	0	0	5			4*	4*
Total										**31/ 36**			**25/29***	**27/31***

FOURTH SEMESTER (January-June)														
Sl. No:	**Slot**	**Course Code**	**Course Type**	**Course Category**	**Course Title (Course Name)**	**Credit Structure**				**SS**	**Total Marks**		**Credits**	**Hrs./ Week**
						L	**T**	**P**	**R**		**CIA**	**ESE**		
1	A	25MAT403	BSC	GC	Mathematics for Physical Science-4	3	0	0	0	4.5	40	60	3	3
2	B	25CET402	PC	PC	Soil mechanics	3	1	0	0	5	40	60	4	4
3	C	25CET403	PC	PC	Structural analysis-II	3	1	0	0	5	40	60	4	4
4	D	25CEZ404	PC-PBL	PB	Design of concrete structures	3	0	0	1	5.5	60	40	4	4
5	E	25CET41N	PE	PE	PE-1	3	0	0	0	4.5	40	60	3	3
6	G S3/S4	25HUT346	HMC	UC	Economics for Engineers	2	0	0	0	3	50	50	2	2
		25HUT347			Engineering Ethics and Sustainable Development									
7	L	25CEL407	PCL	PC	Materials testing lab	0	0	3	0	1.5	50	50	2	3
8	Q	25CEL408	PCL	PC	Civil engineering modelling Lab	0	0	3	0	1.5	50	50	2	3
9	R/M /H		VAC		Remedial/Minor/Honours Course	3	1	0	0	5			4*	4*
Total										**31/ 36**			**24/ 28***	**26/ 30***

Note: *Economics for Engineers and Engineering Ethics and Sustainable Development shall be offered in both S3 and S4. Institutions can advise students belonging to about 50% of the number of branches in the Institution to opt for Economics for Engineers in S3 and Engineering Ethics & Sustainable Development in S4 and vice versa*.

PROGRAM ELECTIVE I: PECET 41N					
SLOT	COURSE CODE	COURSES	L-T-P-R	HOURS	CREDIT
E	25CET411	Advanced Solid Mechanics	3-0-0-0	**3**	3
	25CET412	Concrete Technology	3-0-0-0		3
	25CET413	Mechanics of Fluid Flow	3-0-0-0		3
	25CET414	Cartography and GIS	3-0-0-0		3
	25CET416	Engineering Geology	3-0-0-0		3
	25CET417	Numerical methods for Engineers	3-0-0-0		3
	25CET418	Environmental law and Policy	3-0-0-0		3
	25CET415	**Architectural Engineering**	3-0-0-0		**5/3**

Note : *Level 5 courses in the B. Tech curriculum carry a total of 5 credits, consisting of 3 credits for the Programme Elective and 2 additional credits. The additional 2 credits shall be awarded only if the student meets the eligibility conditions specified in the B. Tech. -2025 regulations. If those conditions are not fulfilled, the student will receive only 3 credits for the course.*

FIFTH SEMESTER (July-December)														
Sl. No:	**Slot**	**Course Code**	**Course Type**	**Course Category**	**Course Title (Course Name)**	**Credit Structure**				**SS**	**Total Marks**		**Credits**	**Hrs./ Week**
						L	**T**	**P**	**R**		**CIA**	**ESE**		
1	A	25CET501	PC	PC	Hydrology & water resources engineering	3	1	0	0	5	40	60	4	4
2	B	25CET502	PC	PC	Transportation engineering	3	1	0	0	5	40	60	4	4
3	C	25CET503	PC	PC	Environmental engineering	3	0	0	0	4.5	40	60	3	3
4	D	25CEZ504	PC-PBL	PB	Foundation engineering	3	0	0	1	5.5	60	40	4	4
5	E	25CET52N	PE	PE	PE-2	3	0	0	0	4.5	40	60	3	3
6	I*	25HUX506	HMC	UC	Constitution of India (MOOC)	-	-	-	-	2	-	-	1	-
7	L	25CEL507	PCL	PC	Geotechnical engineering lab	0	0	3	0	1.5	50	50	2	3
8	Q	25CEL508	PCL	PC	Concrete lab (MT-2)	0	0	3	0	1.5	50	50	2	3
9	R/M/H		VAC		Remedial/Minor/Honours Course	3	1	0	0	5			4*	4*
	S_5/ S_6	Industrial Visit (Maximum 12 Days are permitted, Not Exceeding more than 6 Working Days) /Industrial Training												
Total										**30 / 35**			**23/27***	**24/28***

****No Grade Points will be awarded for the MOOC course and I slot course.***

PROGRAM ELECTIVE 2: PECET 52N					
SLOT	COURSE CODE	COURSES	L-T-P-R	HOURS	CREDIT
E	25CET521	Advanced Structural Analysis	3-0-0-0	**3**	3
	25CET522	Modern Construction Technology	3-0-0-0		3
	25CET523	Open Channel Hydraulics	3-0-0-0		3
	25CET524	Disaster management	3-0-0-0		3
	25CET526	Applied hydrology and climatology	3-0-0-0		3
	25CET527	Town Planning	3-0-0-0		3
	25CET528	Optimization techniques and operations research for Civil Engineers	3-0-0-0		3
	25CET525	**Design of prestressed concrete**	3-0-0-0		**5/3**

SIXTH SEMESTER (January-June)														
Sl. No:	**Slot**	**Course Code**	**Course Type**	**Course Category**	**Course Title (Course Name)**	**Credit Structure**				**SS**	**Total Marks**		**Credits**	**Hrs/ Week**
						L	**T**	**P**	**R**		**CIA**	**ESE**		
1	A	25CET601	PC	PC	Quantity surveying & valuation	3	0	0	0	4.5	40	60	3	3
2	B	25CET602	PC	PC	Design of steel structures	3	0	0	0	4.5	40	60	3	3
3	C	25CET63N	PE	PE	PE-3	3	0	0	0	4.5	40	60	3	3
4	D	25CEZ604	PC-PBL	PB	Construction project management	3	0	0	1	5.5	60	40	4	4
5	F	25EST605	ESC	GC	Design Thinking and Product Development (Group Specific Syllabus)	2	0	0	0	3	40	60	2	2
6	O	25CET61N /IECET61N	OE/ILE	OE/IE	OE/ILE-1	3	0	0	0	4.5	40	60	3	3
7	L	25CEL607	PCL	PC	Transportation engineering lab	0	0	3	0	1.5	50	50	2	3
8	P	25CEP608	PWS	PC	Mini Project: Socially Relevant Project	0	0	0	3	3	50	50	2	3
9	Q	25CEL609	PCL	PC	Environmental engineering lab	0	0	2	0	1	50	50	1	2
10	R/ M/ H		VAC		Remedial/Minor/Honours Course	3	0	0	0	5			3*	3*
	S5 / S6	Industrial Visit (Maximum 12 Days are permitted, Not Exceeding more than 6 Working Days) /Industrial Training												
Total										**32 / 37**			**23/26***	**26/29***

Note: Open Electives are such courses which will be offered by other departments. Like CSE department students have to opt open electives from ECE/ME/EEE etc. departments.

PROGRAM ELECTIVE 3: PECET 63N					
SLOT	COURSE CODE	COURSES	L-T-P-R	HOURS	CREDIT
C	25CET 631	Advanced Design of Concrete Structures	3-0-0-0	3	3
	25CET 632	Irrigation and Drainage Engineering	3-0-0-0		3
	25CET 633	Ground Improvement Techniques	3-0-0-0		3
	25CET 634	Repair and rehabilitation of structures	3-0-0-0		3
	25CET 636	Solid and Hazardous Waste Management	3-0-0-0		3
	25CET 637	Traffic Engineering and Management	3-0-0-0		3
	25CET 635	**Advanced foundation Engineering**	3-0-0-0		**5/3**

OPEN ELECTIVE 1: OECET 61N					
SLOT	COURSE CODE	COURSES	L-T-P-R	HOURS	CREDIT
O	25CET 611	Introduction to Construction Engineering	3-0-0-0	3	3
	25CET 612	Environmental Laws and Policy	3-0-0-0		3
	25CET 613	Disaster management	3-0-0-0		3
	25CET 614	Environmental Impact Assessment	3-0-0-0		3
	25CET 615	Structural Geology	3-0-0-0		3
	25CET 616	Applied Earth Systems	3-0-0-0		3

SEVENTH SEMESTER (July-December)														
Sl. No:	**Slot**	**Course Code**	**Course Type**	**Course Category**	**Course Title (Course Name)**	**Credit Structure**				**SS**	**Total Marks**		**Credits**	**Hrs/ Week**
						L	**T**	**P**	**R**		**CIA**	**ESE**		
1	A	25CET74N / 25CEX74N	PE	PE	PE-4 (Internship Students: Self Study/MOOC Approved by the University/Online Classes)	3	0	0	0	4.5	40	60	3	3
2	B	25CET75N/ 25CEX75N	PE	PE	PE-5 (Internship Students: Self Study/MOOC Approved by the University/Online Classes)	3	0	0	0	4.5	40	60	3	3
3	O	25CET72N /IECET72N /25CEX72N	OE/ ILE	OE/IE	OE/ILE-2 (Internship Students: Self Study/MOOC Approved by the University/Online Classes)	3	0	0	0	4.5	40	60	3	3
4	I*	25HUT704/ 25HUX70N	HMC	UE	Elective (Internship Students: Self Study/MOOC Approved by the University/Online Classes)	2	0	0	0	3	50	50	2	2
5	S	25CES705	PWS	PC	Seminar	0	0	3	0	1.5	50	0	2	3
6	P	25CEP706/ 25CEI706	PWS	PC	Option 1: Major Project Option 2: Internship (4-6 Months)	0	0	0	12	12	100	0	4	8
7	R/H		VAC		Remedial/Honours Course	3	0	0	0	4.5			3*	3*
Total										**26/ 31**			**17/20***	**22/25***

**No Grade Points will be awarded for the I slot courses*

**The students can take the internship option either in 7th or in 8th semester.*

** Option 1: Work on a Project in the institute/department under the mentorship of faculty members.*

*Option 2: Full semester Internship in Industry/organization (**7th or 8th semester**)*

Note: Open Electives are such courses which will be offered by other departments.

PROGRAM ELECTIVE 4: PECET 74N					
SLOT	COURSE CODE	COURSES	L-T-P-R	HOURS	CREDIT
A	25CET741	Structural Dynamics	3-0-0-0	**3**	3
	25CET742	Formwork Engineering	3-0-0-0		3
	25CET743	Environmental Geotechnology	3-0-0-0		3
	25CET744	Airport Planning and Design	3-0-0-0		3
	25CET746	Highway Material & Design	3-0-0-0		3
	25CET747	River Engineering	3-0-0-0		3
	25CET745	**Pavement Design and Construction**	3-0-0-0		**5/3**

PROGRAM ELECTIVE 5: PECET 75N					
SLOT	COURSE CODE	COURSES	L-T-P-R	HOURS	CREDIT
B	25CET751	Groundwater Engineering	3-0-0-0	3	3
	25CET752	Sustainable Construction Practices	3-0-0-0		3
	25CET753	Advanced Geotechnical Investigation	3-0-0-0		3
	25CET754	Railway,Port and Harbor Engineering	3-0-0-0		3
	25CET756	Air and Noise Pollution Control Engineering	3-0-0-0		3
	25CET757	Finite element method	3-0-0-0		3
	25CET755	**Design of hydraulic structures**	3-0-0-0		**5/3**

OPEN ELECTIVE 2: OECET 72N					
SLOT	COURSE CODE	COURSES	L-T-P-R	HOURS	CREDIT
O	25CET721	Intelligent Transportation Systems	3-0-0-0	3	3
	25CET722	Environment Health and Safety	3-0-0-0		3
	25CET723	Watershed Conservation and Management	3-0-0-0		3
	25CET724	Forensic Engineering	3-0-0-0		3
	25CET725	Finance for Engineers	3-0-0-0		3

SL. No	Course Code	Slot I: HMC Elective
1	25HUT704	Project Management: Planning, Execution, Evaluation and Control
2	25HUX701	Proficiency course in French. (MOOC) (B1 level)
3	25HUX702	Proficiency Course in German (B1 Level). (MOOC)
4	25HUX703	Proficiency Course in Spanish (B1 Level) (MOOC)
5	25HUX704	Introduction to Japanese Language and Culture (N5 level). (MOOC)

EIGHTH SEMESTER (January-June)														
Sl. No:	**Slot**	**Course Code**	**Course Type**	**Course Category**	**Course Title (Course Name)**	**Credit Structure**				**SS**	**Total Marks**		**Credits**	**Hrs/ Week**
						L	**T**	**P**	**R**		**CIA**	**ESE**		
1	A	25CET86N/ 25CEX86N	PE	PE	PE-6 (Internship Students: Self Study/MOOC Approved by the University/Online Classes)	3	0	0	0	4.5	40	60	3	3
2	O	25CET83N /IECET83N /25CEX83N	OE/ILE	OE/IE	OE/ILE-3 (Internship Students: Self Study/MOOC Approved by the University/Online Classes)	3	0	0	0	4.5	40	60	3	3
3	I*	25HUT803 / 25HUX803	HMC	UC	Organizational Behavior and Business Communication (Internship Students: Self Study/MOOC Approved by the University/Online Classes)	2	0	0	0	3	50	50	1	2
4	P	25CEP806/ 25CEI806/ 25CEP807	PWS	PC	Option 1: Major Project Option 2: Internship (4-6 Months) Option 3: Major Project Phase -II (For the students who have not opted for internship in S7/S8)	0	0	0	8	12	100	0	4	8
Total										**20**			**11**	**16**

No Grade Points will be awarded for the I slot courses

** Option 2: Full semester Internship in Industry/organization (**7th or 8th semester**)*

PROGRAM ELECTIVE 6: PECET 86N					
SLOT	COURSE CODE	COURSES	L-T-P-R	HOURS	CREDIT
A	25CET861	Water and air quality management	3-0-0-0	**3**	3
	25CET862	Valuation of Real Properties	3-0-0-0		3
	25CET863	Contracts Management	3-0-0-0		3
	25CET864	Advanced Design of steel Structures	3-0-0-0		3
	25CET866	Urban Transportation Planning.	3-0-0-0		3
	25CET867	Rural Water Supply and Onsite Sanitation Systems	3-0-0-0		3
	25CET865	**Design of Earthquake Resistant Structures**	3-0-0-0		**5/3**

OPEN ELECTIVE 3: OECET 83N					
SLOT	COURSE CODE	COURSES	L-T-P-R	HOURS	CREDIT
O	25CET831	Waste management	3-0-0-0	3	3
	25CET832	Rainwater harvesting	3-0-0-0		3
	25CET833	Public Transportation Systems	3-0-0-0		3
	25CET834	Fundamentals of building planning	3-0-0-0		3
	25CET835	Hydrogeology	3-0-0-0		3

HMC Courses				
Sl. No:	**Semester**	**Course Code**	**Course Area**	**Credits**
1	**S1/S2**	25HUT128	Life Skills and Professional Communication	1
2	**S3 /S4**	25HUT346	Economics for Engineers	2
3		25HUT347	Engineering Ethics and Sustainable Development	2
4	**S5**	25HUX506	Constitution Of India. (MOOC)	1
5	**S7**	25HUT704 /25HUX70N	Elective (Project Management/Foreign Languages)	2
6	**S8**	25HUT803/ 25HUX803	Organizational Behavior and Business Communication	1
Total Credits				**9**

BSC Courses			
Sl. No:	**Semester**	**Course Area**	**Credits**
1	**S1**	Mathematics for Physical Science-1	**3**
2	**S1/S2**	Physics for Physical Science	4
3		Chemistry for Physical Science	4
4	**S2**	Mathematics for Physical Science-2	3
5	**S3**	Mathematics for Physical Science-3	3
6	**S4**	Mathematics for Physical Science-4	3
Total Credits			**20**

ESC Courses (Group C)			
Sl. No:	**Semester**	**Course Area**	**Credits**
1	**S1**	Engineering Mechanics	**3**
2		Introduction to Mechanical Engineering/ Civil Engineering	4
3		Algorithmic Thinking with Python	4
4		Engineering Workshop	1
5	**S2**	Engineering Graphics and Computer Aided Drawing	3
6		Basic Electrical and Electronics Engineering	4
7		Engineering Entrepreneurship and IPR	3
8		Civil Engineering drafting lab	1
9	**S3**	Introduction to Artificial Intelligence and Data Science	4
10	**S6**	Design Thinking and Product Development (Group Specific Syllabus)	2
Total Credits			**29**

Programme Core Courses (PC) (CE)			
Sl. No:	**Semester**	**Course Area**	**Credits**
1	**S2**	Mechanics of solids	4
2	**S3**	Fluid mechanics	4
3		Structural analysis-I	4
4		Survey lab	2
5		Fluid mechanics lab	2
6	**S4**	Soil mechanics	4
7		Structural analysis-II	4
8		Materials testing lab	2
9		Civil engineering modelling Lab	2
10	**S5**	Hydrology & water resources engineering	4
11		Transportation engineering	4
12		Environmental engineering	3
13		Geotechnical engineering lab	2
14		Concrete lab (MTL-2)	2
15	**S6**	Quantity surveying & valuation	3
16		Design of steel structures	3
17		Transportation engineering lab	2
19		Environmental engineering lab	1
Total Credits (Theory -10, Lab-8)			**52**

Programme Core-Project Based Learning (PBL)			
Sl. No:	**Semester**	**Course Area**	**Credits**
1	**S3**	Surveying & geomatics	4
2	**S4**	Design of concrete structures	4
3	**S5**	Foundation engineering	4
4	**S6**	Construction project management	4
Total Credits			**16**

Programme Elective Courses (PE)			
Sl. No:	**Semester**	**Course Type**	**Credits**
1	S4	PE-1	3
2	**S5**	PE-2	3
3	**S6**	PE-3	3
4	**S7**	PE-4	3
5		PE-5	3
6	**S8**	PE-6	3
Total Credits			**18**

Open Elective Courses/Industry Elective(OE/IEL)			
Sl. No:	**Semester**	**Course Type**	**Credits**
1	**S6**	OE/ILE-1	3
2	**S7**	OE/ILE-2	3
3	**S8**	OE/ILE-3	3
Total Credits			**9**

Project/ Internship and Seminar			
Sl. No:	**Semester**	**Course Type**	**Credits**
1	**S6**	Mini Project	2
2	**S7**	Seminar	2
3		Major Project/Internship	4
4	**S8**	Major Project/Internship/Research Project	4
Total Credits			**12**

Activity Points				
Sl. No.	**Group**	**Courses**	**Credits**	**Minimum Credit Requirements**
1	I	NSS, NCC, NSO (National Sports Organization)	1 (40 Points)	3 Credits (One credit from each Group)
2		Arts/Sports/Games		
3		Union/Club Activities		
4	II	English Proficiency Certification (TOFEL, IELTS, BEC etc.)	1 (40 Points)	
5		Aptitude Proficiency Certification (GRE, CAT, GMAT etc.)/ Valid Gate Score.		
6		Short Term Internship (Minimum 2 weeks), Clinical Exposure/Training (Minimum 2 weeks), Conferences/Paper Presentation/ Workshop Activities/ Professional Body Activities, Participation in University level/State Level/ National Level Hackathons		
7	III	Journal Publication, Patents, Start-Up, Innovation, Winners of National/ International Level Hackathons	1 (40 Points)	
8		**Skilling Certificates** (Approved by the University)		

- ***Students are required to acquire a minimum of 120 activity points, with at least 40 points per group, to fulfill the curriculum requirement of 3 activity credits.***
- ***For B. Tech Lateral Entry students, 30 points per group are required. A minimum of 90 activity points must be acquired to obtain the 3 activity credits mandated by the curriculum.***

Course classifications of the B. Tech Programmes and Overall Credit Structure			
Sl. No	**Category**	**Code**	**Credits**
1	Humanities and Social Sciences including Management Courses	HMC	9
2	Basic Science Courses	BSC	20
3	Engineering Science Courses	ESC	29
4	Programme (Professional) Core Courses	PCC	52
5	Programme (Professional) Core Courses-Project Based Learning	PBL	16
6	Programme Elective Courses	PEC	18
7	Open Elective Courses/Industry Linked Elective	OEC/ILE	9
8	Mini Project,Project Work/Internship and Seminar	PWS	12
9	Health and Wellness	HWP	1
10	Skill Enhancement Courses (Digital 101)	SEC	1
11	Mandatory Student Activities	MSA	3
Total Credits			**170**