



VINAYAKA MISSION'S RESEARCH FOUNDATION

(Deemed to be University under section 3 of the UGC Act 1956)

BACHELOR OF CIVIL ENGINEERING/TECHNOLOGY (BE / B.Tech.)

DEGREE PROGRAMME - FULL TIME

CURRICULUM AND SYLLABI

CHOICE BASED CREDIT SYSTEM (CBCS)

UNDER FACULTY OF ENGINEERING AND TECHNOLOGY

(Semester I to VIII)

REGULATIONS 2025

(FOR THE STUDENTS ADMITTED FROM 2025 ONWARDS)

PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

PEO 1	Graduates will perform as professional engineers in the various fields of Civil engineering.
PEO 2	Graduates will perform well in their specialized field and also trained in teamwork and leadership positions
PEO 3	Graduates will pursue lifelong learning in their specialized fields of Civil Engineering
PEO 4	Graduates will exhibit entrepreneurship qualities.
PEO 5	Graduates will contribute to the development of the profession, nation and society

PROGRAM SPECIFIC OUTCOMES (PSOs)

To achieve the mission of the program, Civil Engineering graduates will be able:

PSO 1	To work independently as well as in team to formulate, design, execute solutions for engineering problems and also analyze, synthesize technical data for application to product, process, system design & development
PSO 2	To understand & contribute towards social, environmental issues, following professional ethics and codes of conduct and embrace lifelong learning for continuous improvement
PSO 3	To develop expertise towards use of modern engineering tools, careers in industries and research and demonstrate entrepreneurial skill

PROGRAMME OUTCOMES

Engineering Graduates will be able to:

PO 1	Engineering Knowledge: Apply knowledge of mathematics, natural science, computing, engineering fundamentals and an engineering specialization as specified in WK1 to WK4 respectively to develop to the solution of complex engineering problems.
PO 2	Problem Analysis: Identify, formulate, review research literature and analyze complex engineering problems reaching substantiated conclusions with consideration for sustainable development. (WK1 to WK4)
PO 3	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)
PO 4	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).
PO 5	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)
PO 6	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).
PO 7	Ethics: Apply ethical principles and commit to professional ethics, human values, diversity and inclusion; adhere to national & international laws. (WK9)
PO 8	Individual and Collaborative Teamwork: Function effectively as an individual, and as a member or leader in diverse/multi-disciplinary teams.
PO 9	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)

B.E. - Choice Based Credit System - 2025 onwards
Regulation: R 2025 Name of the Board: Civil Engineering
Name of the Program: B.E. – Civil Engineering (Full Time - Regular)
STRUCTURE OF UNDERGRADUATE ENGINEERING PROGRAM

REGULAR STUDENTS

Sl. No.	Category of Courses and Credits	Types of Courses	Suggested Breakup of Credits (min – max)	
1.	A. Foundation Courses (48)	Humanities and Social Sciences	9	
2.		Basic Science courses	18	
3.		Engineering Science courses including workshop, drawing, basics of Electrical /Mechanical/Computer etc.	21	
4.	B. Professional Core (62)	Core courses	62	
5.	C. Elective Courses (33)	Professional Electives / Specialization Electives	12 - 15	
		Industry Electives: Industry Designed/ Industry Supported/ Industry Sponsored courses/ Industry Integrated	3 - 9	
		Vocational Skill Development Courses	2	
		Open Electives	Innovation and Entrepreneurship	3 - 9
			Inter departmental Open Electives including Management courses	3 - 9
University Multidisciplinary Open Electives	1			
6.	D. IKS (2)	Indian Knowledge Systems	2	
7.	E. DT (1)	Design Thinking	1	
8.	F. Courses for Presentation of technical Skills related to the Specialization (14)	Project work	8	
		Mini Project	3	
		Internship	3	
9.	**G. Mandatory Courses (5) (to be completed from 1st semester to 7th semester)	Research Methodology	1	
		Indian Constitution	1	
		Environmental Sciences	1	
		Idea Lab	1	
		Yoga and Meditation / NCC / NSS / RRC / YRC /Student Clubs / Unnat Bharat Abhiyan / Swachh Bharat / Sports and Games	1	
Minimum Credits to be earned			165	
** The credits earned in category ‘G’ Courses will not be counted in CGPA calculation				

STRUCTURE OF UNDERGRADUATE ENGINEERING PROGRAM– LES

Sl. No.	Category of Courses and Credits	Types of Courses	Suggested Breakup of Credits (min – max)	
1.	A. Foundation Courses(9)	Humanities and Social Sciences	3	
		Basic Science courses / Engineering Science courses	6	
2.	B. Professional Core (62)	Core courses	62	
3.	C. Elective Courses (33)	Professional Electives/Specialization Electives	12 – 15	
		Industry Electives: Industry Designed/ Industry Supported/ Industry Sponsored courses / Industry Integrated	3 – 9	
		Vocational Skill Development Courses	2	
		Open Electives	Innovation and Entrepreneurship	3 – 9
			Interdepartmental Open Electives including Management courses	3 - 9
University Multidisciplinary Open Electives	1			
4.	D. IKS (2)	Indian Knowledge Systems	2	
5.	E. DT (1)	Design Thinking	1	
6.	F. Courses for Presentation of technical Skills related to the specialization(14)	Project work	8	
		Mini Project	3	
		Internship	3	
7.	** G. Mandatory Courses (5) (to be completed from 3 rd semester to 7 th semester)	Research Methodology	1	
		Indian Constitution	1	
		Environmental Sciences	1	
		Idea Lab	1	
		Yoga and Meditation / NCC / NSS / RRC / YRC / Student Clubs / Unnat Bharat Abhiyan / Swachh Bharat / Sports and Games	1	
Minimum Credits to be earned			126	
** The credits earned in category ‘G’ Courses will not be counted in CGPA calculation.				

A. Foundation Courses									
Humanities and Social Sciences including Management Courses –Credits (9)									
S. No.	CODE	COURSE	OFFERING DEPT.	CATEGORY	L	T	P	C	PREREQUISITE
1.	34125H01	Technical English Communication	ENG	FC-HS	2	0	0	2	NIL
2.	34125H04	English Language Learning using Generative AI (Theory and Practice)	ENG	FC-HS	1	0	2	2	NIL
3	34125H03	Business English	ENG	FC-HS	2	0	0	2	NIL
4	34125H05	Professional English Communication	ENG	FC-HS	2	0	0	2	NIL
5	34125H81	English Language Lab	ENG	FC-HS	0	0	2	1	NIL
6	34125H82	Professional Communication and Personality Development	ENG	FC-HS	0	0	2	1	NIL
7	34125H02	Universal Human Values – II Understanding Harmony	ENG	FC-HS	2	1	0	3	NIL
Basic Science Courses –Credits (18)									
S. No.	CODE	COURSE	OFFERING DEPT.	CATEGORY	L	T	P	C	PREREQUISITE
1.	34125B02	Matrices and Calculus	MATHS	FC-BS	2	1	0	3	NIL
2.	34125B20	Partial Differential Equations and Transforms	MATHS	FC-BS	2	1	0	3	Matrices And Calculus
3	34125B25	Statistics and Numerical Methods	MATHS	FC-BS	2	1	0	3	Matrices And Calculus
4	34125B03	Physical Sciences	PHY & CHEM	FC-BS	4	0	0	4	NIL
5	34125B81	Physical Sciences Lab	PHY & CHEM	FC-BS	0	0	4	2	NIL
6	34225B01	Biology for Civil Engineers	CIVIL	FC-BS	3	0	0	3	NIL
Engineering Science courses, including workshop, drawing, basics of Electrical / Mechanical / Computer etc. (21)									
S. No.	CODE	COURSE	OFFERING DEPT.	CATEGORY	L	T	P	C	PREREQUISITE
1.	35025E03	Python Programming (Theory and Practicals)	CSE	FC-ES	3	0	2	4	NIL
2.	35025E01	Artificial Intelligence in Scientific Research and Education	CSE	FC-ES	3	0	0	3	NIL
3	34625E01	Basics of Electrical and Electronics Engineering	EEE & ECE	FC-ES	4	0	0	4	NIL
4	34425E01	Basics of Civil and Mechanical Engineering	CIVIL & MECH	FC-ES	4	0	0	4	NIL
5	34225E02	Mechanics of Structures	CIVIL	FC-ES	2	1	0	3	NIL
6	34225E01	Fabrication Laboratory for Civil Engineers	CIVIL	FC-ES	0	0	4	2	NIL
7	34625E81	Basics of Electrical and Electronics Engineering Lab	EEE & ECE	FC-ES	0	0	4	2	NIL
8	34425E81	Engineering Graphics and Design	MECH	FC-ES	0	0	6	3	NIL
9	I35025E01	Emerging Trends in IT Infrastructure	CSE/HCL	FC-ES	2	0	0	2	NIL

B. Professional Courses (62)

Core courses

S. No.	CODE	COURSE	OFFERING DEPT.	CATEGORY	L	T	P	C	PREREQUISITE
1	34225C01	Construction Materials and Techniques (Theory and Practicals)	CIVIL	CC-C	3	0	2	4	NIL
2	34225C11	Strength of Materials	CIVIL	CC-C	2	1	0	3	NIL
3	34225C07	Fluids Mechanics and Hydraulic Engineering	CIVIL	CC-C	2	1	0	3	NIL
4	34225C05	Engineering Surveying and Geomatics (Theory and Practicals)	CIVIL	CC-C	2	1	4	5	NIL
5	34225C06	Environmental Engineering and Design (Theory and Practicals)	CIVIL	CC-C	2	1	2	4	NIL
6	34225C13	Sustainable Green Construction	CIVIL	CC-C	3	0	0	3	NIL
7	34225C14	Transportation Engineering	CIVIL	CC-C	3	0	0	3	NIL
8	34225C08	Geotechnical Engineering (Theory And Practicals)	CIVIL	CC-C	2	1	2	4	NIL
9	34225C12	Structural Analysis	CIVIL	CC-C	2	1	0	3	Strength of Materials
10	34225C09	Modern Method of Structural Analysis	CIVIL	CC-C	2	1	0	3	Structural Analysis
11	34225C02	Design of Reinforced Concrete Elements	CIVIL	CC-C	2	1	0	3	Strength of Materials
12	34225C15	Design of Reinforced Concrete Structures	CIVIL	CC-C	2	1	0	3	Design of Reinforced Concrete Elements
13	34225C03	Design of Steel Structures	CIVIL	CC-C	2	1	0	3	Strength of Materials
14	34225C04	Engineering Economics, Estimation and Costing	CIVIL	CC-C	2	1	0	3	NIL
15	34225C10	Robotics and Automation in Construction	CIVIL	CC-C	3	0	0	3	NIL
16	34225C81	Computer Aided Building Drawing Laboratory	CIVIL	CC-C	0	0	4	2	NIL
17	34225C84	Strength of Materials Laboratory	CIVIL	CC-C	0	0	4	2	NIL
18	34225C83	Fluids Mechanics and Hydraulic Engineering Laboratory	CIVIL	CC-C	0	0	4	2	NIL
19	34225C82	Concrete and Construction Technology Laboratory	CIVIL	CC-C	0	0	4	2	Construction Materials and Techniques (Theory and Practicals)
20	34225C86	Survey Camp	CIVIL	CC-C	0	0	4	2	Engineering Surveying and Geomatics (Theory and Practicals)
21	34225C85	Structural Design Laboratory	CIVIL	CC-C	0	0	4	2	Design of Reinforced Concrete Elements

C. Elective Courses (34)**Professional Electives (12 – 15)**

S. No.	CODE	COURSE	OFFERING DEPT.	CATEGORY	L	T	P	C	PREREQUISITE
1	34225P09	Engineering Geology	CIVIL	EC-PS	3	0	0	3	NIL
2	34225P14	Hydrology	CIVIL	EC-PS	3	0	0	3	NIL
3	34225P20	Remote Sensing and GIS	CIVIL	EC-PS	3	0	0	3	NIL
4	34225P07	Disaster Management	CIVIL	EC-PS	3	0	0	3	NIL
5	34225P13	Housing Planning and Management	CIVIL	EC-PS	3	0	0	3	NIL
6	34225P17	Optimization Method For Civil Engineering	CIVIL	EC-PS	3	0	0	3	NIL
7	34225P26	Wind Engineering	CIVIL	EC-PS	3	0	0	3	NIL
8	34225P06	Contract Laws and Regulations	CIVIL	EC-PS	3	0	0	3	NIL
9	34225P22	Solid Waste Management	CIVIL	EC-PS	3	0	0	3	NIL
10	34225P05	Construction Planning and Scheduling	CIVIL	EC-PS	3	0	0	3	NIL
11	34225P16	Irrigation Engineering	CIVIL	EC-PS	3	0	0	3	Fluids Mechanics and Hydraulic Engineering
12	34225P21	Repair and Rehabilitation of Structures	CIVIL	EC-PS	3	0	0	3	Construction Materials and Techniques (Theory and Practicals)
13	34225P25	Traffic Engineering and Management	CIVIL	EC-PS	3	0	0	3	Transportation Engineering
14	34225P11	Ground Improvement Techniques	CIVIL	EC-PS	3	0	0	3	Geotechnical Engineering (Theory and Practicals)
15	34225P08	Electronic Surveying	CIVIL	EC-PS	3	0	0	3	Engineering Surveying and Geomatics (Theory and Practicals)
16	34225P02	Air Pollution Management	CIVIL	EC-PS	3	0	0	3	Environmental Engineering and Design (Theory And Practicals)
17	34225P03	Bridge Structures	CIVIL	EC-PS	3	0	0	3	Design of Steel Structures
18	34225P24	Tall Buildings	CIVIL	EC-PS	3	0	0	3	Design of Steel Structures

19	34225P23	Structural Dynamics	CIVIL	EC-PS	3	0	0	3	Structural Analysis
20	34225P15	Industrial Structures	CIVIL	EC-PS	3	0	0	3	Design of Steel Structure
21	34225P10	Finite Element Techniques	CIVIL	EC-PS	3	0	0	3	Structural Analysis
22	34225P12	Groundwater Engineering	CIVIL	EC-PS	3	0	0	3	Environmental Engineering and Design (Theory And Practicals)
23	34225P04	Concrete Technology	CIVIL	EC-PS	3	0	0	3	Construction Materials and Techniques (Theory and Practicals)
24	34225P19	Prestressed Concrete	CIVIL	EC-PS	3	0	0	3	Design of Reinforced Concrete Elements
25	34225P18	Prefabricated Structures	CIVIL	EC-PS	3	0	0	3	Design of Steel Structures

Specialization Electives

Structural Engineering

S. No.	CODE	COURSE	OFFERING DEPT.	CATEGORY	L	T	P	C	PREREQUISITE
1	34225SE07	Structural Mechanics	CIVIL	EC-SE	3	0	0	3	NIL
2	34225SE05	Introduction to Finite Element Analysis	CIVIL	EC-SE	3	0	0	3	NIL
3	34225SE01	Advanced Concrete Technology	CIVIL	EC-SE	3	0	0	3	NIL
4	34225SE06	Prestressing Technology in Structural Engineering	CIVIL	EC-SE	3	0	0	3	NIL
5	34225SE02	Bridge Engineering	CIVIL	EC-SE	3	0	0	3	NIL
6	34225SE04	Earthquake Engineering and Structural Dynamics	CIVIL	EC-SE	3	0	0	3	NIL
7	34225SE03	Earthquake Engineering	CIVIL	EC-SE	3	0	0	3	NIL

AI in Smart Building Technologies

1	34225AST05	Integration of AI with Existing Building Management Systems (BMS).	CIVIL	EC-SE	3	0	0	3	NIL
2	34225AST04	AI-Assisted Design Tools for Efficient Building Layouts.	CIVIL	EC-SE	3	0	0	3	NIL
3	34225AST06	Sustainable Construction Management Using AI & ML	CIVIL	EC-SE	3	0	0	3	NIL

4	34225AST01	AI & BIM Enhanced Design and Planning	CIVIL	EC-SE	3	0	0	3	NIL
5	34225AST02	AI for Sustainability and Green Building Technologies	CIVIL	EC-SE	3	0	0	3	NIL
6	34225AST03	AI in Building Maintenance and Smart Infrastructure	CIVIL	EC-SE	3	0	0	3	NIL

3D Printing

S. No.	CODE	COURSE	OFFERING DEPT.	CATEGORY	L	T	P	C	PREREQUISITE
1	342253D01	3D Printing with Sketchup	CIVIL	EC-SE	3	0	0	3	NIL
2	342253D06	Modernistic Approaches in Building Construction	CIVIL	EC-SE	3	0	0	3	NIL
3	342253D05	Fundamentals of 3D Printing	CIVIL	EC-SE	3	0	0	3	NIL
4	342253D07	Nano Materials for 3D Printing	CIVIL	EC-SE	3	0	0	3	NIL
5	342253D04	BIM and 3D Printing of Concrete	CIVIL	EC-SE	3	0	0	3	NIL
6	342253D03	Advanced 3D Printing Application in Construction	CIVIL	EC-SE	3	0	0	3	NIL
7	342253D02	Additive Manufacturing Techniques	CIVIL	EC-SE	3	0	0	3	NIL
8	342253D81	Measurement Science In 3D Printing	CIVIL	EC-SE	0	0	4	2	NIL

Environmental Engineering

S. No.	CODE	COURSE	OFFERING DEPT.	CATEGORY	L	T	P	C	PREREQUISITE
1	34225EE01	Environmental Impact Assessment	CIVIL	EC-SE	3	0	0	3	NIL
2	34225EE04	Instrumental Monitoring of Environment	CIVIL	EC-SE	3	0	0	3	NIL
3	34225EE03	Indoor Air Quality	CIVIL	EC-SE	3	0	0	3	NIL
4	34225EE02	Environmental Policies and Legislations	CIVIL	EC-SE	3	0	0	3	NIL
5	34225EE06	Sustainable Development and Environment	CIVIL	EC-SE	3	0	0	3	NIL
6	34225EE05	Remote Sensing and GIS for Environmental Application	CIVIL	EC-SE	3	0	0	3	NIL
7	34225EE07	Waste Water Management	CIVIL	EC-SE	3	0	0	3	NIL
8	34225EE81	Environmental Analysis Laboratory	CIVIL	EC-SE	0	0	4	2	NIL

Industry Designed / Industry supported / Industry offered/Industry Sponsored Courses (3-9)									
S. No.	CODE	COURSE	OFFERING DEPT.	CATEGORY	L	T	P	C	PREREQUISITE
1	34125I26	Soft Skills	CSE//INFOSYS	EC-IE	3	0	0	3	NIL
2	34125I16	Green Buildings and Built Environment	Civil/IGBC	EC-IE	3	0	0	3	NIL
3	34125I24	Paint Technology and Applications	Civil/ Paints and coatings skill council	EC-IE	3	0	0	3	NIL
Vocational Skill Development Courses (2)									
S. No.	CODE	COURSE	OFFERING DEPT.	CATEGORY	L	T	P	C	PREREQUISITE
1	34225V81	AUTOCAD For Civil Drafting	CIVIL	EC-VSD	0	0	2	1	NIL
2	34225V83	Plumbing & Sanitation System Design	CIVIL	EC-VSD	0	0	2	1	NIL
3	34225V82	Construction Safety & Site Management	CIVIL	EC-VSD	0	0	2	1	NIL
4	34225V84	Quantity Surveying & Estimation	CIVIL	EC-VSD	0	0	2	1	NIL
Open Electives									
Innovation and Entrepreneurship (3 -9)									
S. No.	CODE	COURSE	OFFERING DEPT.	CATEGORY	L	T	P	C	PREREQUISITE
1	34125O05	Creativity and Innovation Management	MANAG	OE-IE	3	0	0	3	NIL
2	34125O08	Intellectual Property Rights	MANAG	OE-IE	3	0	0	3	NIL
3	34125O09	Product Design & Development	MANAG	OE-IE	3	0	0	3	NIL
4	34125O07	Entrepreneurship And New Venture Creation	MANAG Ignite 5.0 course by Wadhvani foundation	OE-IE	3	0	0	3	NIL
Interdisciplinary Open Electives (3-9)									
S. No.	CODE	COURSE	OFFERING DEPT.	CATEGORY	L	T	P	C	PREREQUISITE
1	35325O01	Body Area Networks	BME	OE- EA	3	0	0	3	NIL
2	35325O02	Fundamentals of Biomedical Engineering	BME	OE- EA	3	0	0	3	NIL
3	35325O03	Telehealth Technology	BME	OE- EA	3	0	0	3	NIL
4	38125O01	Biofertilizer Technology	BTE	OE- EA	3	0	0	3	NIL

5	38125O02	Food Science and Industry 4.0	BTE	OE- EA	3	0	0	3	NIL
6	38125O03	Introduction To Biofuels	BTE	OE- EA	3	0	0	3	NIL
7	35025O01	Cyber Security	CSE	OE- EA	3	0	0	3	NIL
8	35025O03	Fundamental of Machine Learning	CSE	OE- EA	3	0	0	3	NIL
9	35025O02	Data Science for Professionals	CSE	OE- EA	3	0	0	3	NIL
10	34725O02	Digital Image Processing & Pattern Generation	ECE	OE- EA	3	0	0	3	NIL
11	34725O03	Evolution of Mobile Communication 1G To 5G	ECE	OE- EA	3	0	0	3	NIL
12	34725O04	Principles of Radar and Satellite Communication	ECE	OE- EA	3	0	0	3	NIL
13	34425O01	3D Printing and its Applications	MECH	OE- EA	3	0	0	3	NIL
14	34425O02	Energy Harvesting and Renewable Energy Systems	MECH	OE- EA	3	0	0	3	NIL
15	34425O03	Industrial Robotics	MECH	OE- EA	3	0	0	3	NIL
16	36925O02	Biopharmaceutics	PCE	OE- EA	3	0	0	3	NIL
17	36925O03	Functional Foods & Nutraceuticals	PCE	OE- EA	3	0	0	3	NIL
18	36925O01	Biomolecules	PCE	OE- EA	3	0	0	3	NIL
19	34625O02	IOT Systems: An Introduction to Sensors and Transducers	EEE	OE- EA	3	0	0	3	NIL
20	34625O03	Smart Cities: Electrical Systems and Technologies	EEE	OE- EA	3	0	0	3	NIL
21	34625O01	Energy Conservation and Management	EEE	OE- EA	3	0	0	3	NIL
22	34125O02	Total Quality Management	MANAG	OE- EA	3	0	0	3	NIL
23	34125O01	Engineering Management and Ethics	MANAG	OE- EA	3	0	0	3	NIL
24	34125O03	Management Principles for Engineers	MANAG	OE- EA	3	0	0	3	NIL

University Open Electives (1)

S. No.	CODE	COURSE	OFFERING DEPT.	CATEGORY	L	T	P	C	PREREQUISITE
1	40625U01	Dental Hygiene & Quality of Life	DENTISTRY	OE - UOE	1	0	0	1	NIL

2	40625U02	Nutrition for Wellness & Specific Diseases	NURSING	OE - UOE	1	0	0	1	NIL
3	40625U03	Fundamentals of Homoeopathy	HOMOEOPATHY	OE - UOE	1	0	0	1	NIL
4	40625U04	Advertising	ARTS & SCIENCE	OE - UOE	1	0	0	1	NIL
5	40625U05	Teamwork & Collaboration	ARTS & SCIENCE	OE - UOE	1	0	0	1	NIL
6	40625U06	Emotional Intelligence	ARTS & SCIENCE	OE - UOE	1	0	0	1	NIL
7	40625U07	Media Management	ARTS & SCIENCE	OE - UOE	1	0	0	1	NIL
8	40625U08	Exercise Essentials for Physical Fitness	PHYSIOTHERAPY	OE - UOE	0	0	2	1	NIL
9	40625U06	Essential Skills for Medical Emergencies	MEDICINE	OE - UOE	1	0	0	1	NIL
10	40625U10	Medicine Plants in Disease Management	PHARMACY	OE - UOE	1	0	0	1	NIL
11	40625U11	Basic Life Support	ALLIED HEALTH SCIENCES	OE - UOE	1	0	0	1	NIL
12	40625U12	Mallarkhambam	PHYSICAL EDUCATION	OE - UOE	0	0	2	1	NIL
13	40625U13	Silambam	PHYSICAL EDUCATION	OE - UOE	0	0	2	1	NIL
14	40625U14	Basic Fitness Training	PHYSICAL EDUCATION	OE - UOE	0	0	2	1	NIL
15	40625U15	Recreational Games	PHYSICAL EDUCATION	OE - UOE	0	0	2	1	NIL
16	40625U16	Introduction to Law	LAW	OE - UOE	1	0	0	1	NIL
17	40625U17	Fundamentals of Law in Technology and Cyber Space	LAW	OE - UOE	1	0	0	1	NIL
18	40625U18	Foundation Course in Yoga	REHABILITATION AND BEHAVIORAL SCIENCES	OE - UOE	1	0	0	1	NIL
19	40625U19	Introduction to Psychology	REHABILITATION AND BEHAVIORAL SCIENCES	OE - UOE	1	0	0	1	NIL
20	40625U20	Introduction to Public Policy and Governance	LIBERAL ARTS	OE - UOE	1	0	0	1	NIL
21	40625U21	Indian Economy and Development Challenges	LIBERAL ARTS	OE - UOE	1	0	0	1	NIL
22	Course Code will be given after receiving SWAYAM Certificate	Any SWAYAM / MOOC / NPTEL Courses which are not related to the discipline of study of the student can be chosen as an Open Elective in		OE - UOE	1	0	0	1	NIL

		Consultation with the respective Faculty Advisor of the Institution.							
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D. Indian Knowledge Systems (2)

S. No.	CODE	COURSE	OFFERING DEPT.	CATEGORY	L	T	P	C	PREREQUISITE
1	34225K01	Indian Knowledge Systems	ENG	IKS	2	0	0	2	NIL

E. Design Thinking (2)

S. No.	CODE	COURSE	OFFERING DEPT.	CATEGORY	L	T	P	C	PREREQUISITE
1	34225D01	Design Thinking and Advanced Problem Solving	CSE/HCL	DT	1	0	0	1	NIL

F. Courses for Presentation of technical Skills related to the Specialization (14)

S. No.	CODE	COURSE	OFFERING DEPT.	CATEGORY	L	T	P	C	PREREQUISITE
1	34225R01	Project Work	CIVIL	PI-P	0	0	16	8	NIL
2	34225M01	Mini Project	CIVIL	PI-M	0	0	6	3	NIL
3	34225T01	Internship	CIVIL	PI-I	3 Weeks			3	NIL

**G. Mandatory Courses (5)

S. No.	CODE	COURSE	OFFERING DEPT.	CATEGORY	L	T	P	C	PREREQUISITE
1	34225Z82	Research Methodology	CIVIL	MC	0	0	2	1	NIL
2	34125Z81	Indian Constitution	LAW	MC	0	0	2	1	NIL
3	34125Z01	Environmental Sciences	CHEM	MC	0	0	2	1	NIL
4	34225Z01	Idea Lab	CIVIL	MC	0	0	2	1	NIL
5	34125Z82 / 34125Z84 / 34125Z85 / 34125Z86 / 34125Z90/ 34125Z87/ 34125Z87/ 34125Z88 / 34125Z89 / 34125Z83	Yoga and Meditation / NCC / NSS / RRC / YRC / Student Clubs / Unnat Bharat Abhiyan / Swachh Bharat / Sports and Games	GEN / PHED	MC	0	0	2	1	NIL

Minor Degree

Sustainable Construction and Management

S. No.	CODE	COURSE	OFFERING DEPT.	CATEGORY	L	T	P	C	PREREQUISITE
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1	34225G05	Renewable Energy Systems	CIVIL	MIN	3	0	0	3	NIL
2	34225G07	Thermal Insulation Installation	CIVIL	MIN	3	0	0	3	NIL
3	34225G06	Sustainable Urban Systems	CIVIL	MIN	3	0	0	3	NIL
4	34225G01	Energy Auditing in Special Structures	CIVIL	MIN	3	0	0	3	NIL
5	34225G04	Life Cycle Assessment for Complex Systems	CIVIL	MIN	3	0	0	3	NIL
6	34225G03	Infrastructure Project Development	CIVIL	MIN	3	0	0	3	NIL
7	34225G02	Green Building and Energy Efficient Building	CIVIL	MIN	3	0	0	3	NIL
8	34225G81	Sustainable Building Material Laboratory	CIVIL	MIN	0	0	4	2	NIL

Micro Credential

S. No.	CODE	COURSE	OFFERING DEPT.	CATEGORY	L	T	P	C	PREREQUISITE
1	34225J01	Non-destructive testing (NDT) of structures	CIVIL	MCC	1	0	2	2	NIL
2	34225J02	Structural health monitoring	CIVIL	MCC	1	0	2	2	NIL
3	34225J03	Environmental Impact & Carbon Footprint Basics	CIVIL	MCC	1	0	2	2	NIL

SKILL DEVELOPMENT COURSES

S. No.	CODE	COURSE	OFFERING DEPT.	CATEGORY	L	T	P	C	PREREQUISITE
1	34225S83	Plumbing Systems and Sanitary Fittings	CIVIL	SDC	0	0	4	2	NIL
2	34225S82	Engineering Drawing & AutoCAD Basics	CIVIL	SDC	0	0	4	2	NIL
3	34225S04	Fundamentals of Masonry Works	CIVIL	SDC	2	0	0	2	NIL
4	34225S01	Building Safety and Construction Practices	CIVIL	SDC	2	0	0	2	NIL
5	34225S81	Computer-Aided Drafting and 3D Modelling	CIVIL	SDC	0	0	4	2	NIL
6	34225S02	Construction Estimation and Billing	CIVIL	SDC	2	0	0	2	NIL
7	34225S03	Construction Tools, Equipment, and Site Safety	CIVIL	SDC	2	0	0	2	NIL

8	34225S84	Surveying Instruments and Measurements	CIVIL	SDC	0	0	4	2	NIL
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Honors - Degree Programme									
S. No.	CODE	COURSE	OFFERING DEPT.	CATEGORY	L	T	P	C	PREREQUISITE
1	34225A01	Sustainable Infrastructure and Intelligent Construction Systems	CIVIL	HON	3	0	0	3	NIL
2	34225A02	Geo-Spatial Surveying and Drone-Based Mapping Technologies	CIVIL	HON	3	0	0	3	NIL
3	34225A03	Building Information Modeling and Digital Twin Applications	CIVIL	HON	3	0	0	3	NIL
4	34225A04	Green Infrastructure and Environmental Design Innovations	CIVIL	HON	3	0	0	3	NIL
5	34225A05	Advanced Concrete Science and Smart Construction Materials	CIVIL	HON	3	0	0	3	NIL
6	34225A06	Disaster Risk Mitigation and Resilient Infrastructure Systems	CIVIL	HON	3	0	0	3	NIL
7	34225A07	Intelligent Transportation Networks and Urban Mobility Planning	CIVIL	HON	3	0	0	3	NIL
8	34225A08	Computational Structural Modelling and Simulation Tools	CIVIL	HON	3	0	0	3	NIL

Fundamentals of AI and Work Productivity Tools**Specialization Electives (15)**

S. No.	CODE	COURSE	OFFERING DEPT.	CATEGORY	L	T	P	C	PREREQUISITE
1		Power of Structured Questions	CSE/HCL	EC-SE	2	0	0	2	NIL
2		AI and Gen AI	CSE/HCL	EC-SE	2	0	0	2	NIL
3		Adoption of AI in Careers	CSE/HCL	EC-SE	2	0	0	2	NIL
4		M365 Collaborative Tools	CSE/HCL	EC-SE	2	0	0	2	NIL
5		Understanding Data and Analytics Tools	CSE/HCL	EC-SE	2	0	4	4	NIL
6		Cyber and Data Security at Work	CSE/HCL	EC-SE	2	0	4	4	NIL

Building Information Modelling**Specialization Electives (15)**

S. No.	CODE	COURSE	OFFERING DEPT.	CATEGORY	L	T	P	C	PREREQUISITE
1		Introduction to BIM & Introduction to AutoCAD	CIVIL/Medini	EC-SE	1	1	2	4	Basic computer literacy
2		Advanced AutoCAD & Revit Architecture	CIVIL/Medini	EC-SE	1	1	2	4	Advanced 2D drawing & 3D modeling
3		Integrated BIM for MEP, Structure & Coordination	CIVIL/Medini	EC-SE	1	1	2	4	Basics of 3D modeling & building services
4		Open Roads	CIVIL/Medini	EC-SE	1	1	2	4	Design Of Highway Geometric Alignment
5		Hydraulic Analysis and Design using Open Flows Water GEMS	CIVIL/Medini	EC-SE	1	1	2	4	Fluids Mechanics and Hydraulic Engineering
6		Hydraulic Analysis and Design using Open Flows Sewer GEMS	CIVIL/Medini	EC-SE	1	1	2	4	Environmental Engineering and Design (Theory And Practicals)
7		BIM Concepts, BIM Coordination & Green Building Studio	CIVIL/Medini	EC-SE	1	1	2	4	Advanced AutoCAD & Revit Architecture