

SRI KRISHNA COLLEGE OF ENGINEERING AND TECHNOLOGY An Autonomous Institution, Affiliated to Anna University Coimbatore - 641 008

DEPARTMENT OF CIVIL ENGINEERING



CURRICULUM AND SYLLABI
BE CIVIL ENGINEERING
REGULATION 2022



SRI KRISHNA COLLEGE OF ENGINEERING AND TECHNOLOGY

An Autonomous Institution affiliated to Anna University, Chennai Kuniamuthur, Coimbatore - 641 008

DEPARTMENT OF CIVIL ENGINEERING

BE CIVIL ENGINEERING

CURRICULUM AND SYLLABIREGULATION 2022 (B:2022-2026)
CHOICE BASED CREDIT SYSTEM

SRI KRISHNA COLLEGE OF ENGNEERING AND TECHNOLOGY

An Autonomous Institution Affiliated to Anna University

Kuniamuthur, Coimbatore - 641 008

VISION AND MISSION OF THE DEPARTMENT

Our Vision

To be a center of excellence in Civil Engineering Education through full-fledged learning experience along with research.

Our Mission

To accomplish our vision, we are committed to

- M1: Faculty experts from all specialization of Civil Engineering to facilitate teaching learning process
- M2: Excellent infrastructure facilities to apply Civil Engineering knowledge and perform societal based research
- M3: Exposure to latest technologies in Civil Engineering through industry-institute interaction and professional bodies
- M4: Environs to develop their innovative thoughts, ethics, communication, inter- and intrapersonal skills
- M5: Enthusiasm towards self-learning, social responsibility and entrepreneurship

Program Outcomes (POs):-

At the time of their graduation students of Civil Engineering Program should be in possession of the following Program Outcomes

- PO 1. **Engineering knowledge:** Apply the knowledge of mathematics, science and engineering fundamentals for the solution of complex Civil Engineering problems.
- PO 2. **Problem analysis:** Identify, formulate and analyse complex Civil Engineering problems reaching substantiated conclusions using first principles of mathematics and engineering sciences.
- PO 3. **Design/development of solutions:** Design solutions for complex Civil Engineering problems and design system components with appropriate consideration for public health & safety, cultural, societal and environmental considerations.

- PO 4. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis & interpretation of data and synthesis of the information to provide valid conclusions.
- PO 5. **Modern tool usage:** Create, select & apply appropriate techniques, resources, modern engineering and IT tools, including prediction and modeling to complex Civil Engineering activities, with an understanding of the limitations.
- PO 6. The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal & cultural issues and the consequent responsibilities relevant to the professional engineering practice.
- PO 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.
- PO 8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities as well as norms of the engineering practice.
- PO 9. **Individual and team work:** Function effectively as an individual, a member or leader in diverse teams and in multidisciplinary settings.
- PO 10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with the 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.
- PO 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.
- PO 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 Educational Objectives (PEOs):-

The following Program Educational Objectives are designed based on the department mission

- To apply knowledge of mathematics, science and engineering to solve existing problems in the area of Structural, Geotechnical, Water Resources, Environmental, Transportation, Urban Planning, Construction Materials and Management in Civil Engineering
- 2. To analyze, design, construct Civil Engineering traditional and modern structures

- 3. To perform investigation on any complicated Civil Engineering problems by conducting research using modern equipment's and software tools
- 4. To communicate and develop strong inter- and intra- personal skills to prepare them for placement and higher studies
- 5. To be self-motivated towards lifelong learning and entrepreneurship

Mapping of POs to PEOs

Program	Program Outcomes											
Educational Objectives	1	2	3	4	5	6	7	8	9	10	11	12
PEO 1	3	2	3	2	2	3	2	2	3	3	3	2
PEO 2	3	3	2	2	3	2	2	2	2	2	2	3
PEO 3	3	3	3	2	3	3	2	2	2	3	2	3
PEO 4	3	3	2	2	3	2	2	2	2	2	2	3
PEO 5	3	3	3	2	3	3	2	2	2	3	2	3

1	Reasonably agreed	2	Moderately agreed	3	Strongly agreed
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Program Specific Outcomes (PSOs):-

At the end of the Program, Graduate shall have

PSO 1	Analytical Knowledge	The ability to analyse, design and interpret by applying								
	and Practical Skills	the concepts of mathematics and physical sciences in								
		the core areas of Civil Engineering.								
PSO 2	Civil Engineer and	The propensity to excel in portfolio of waste								
	Sustainability	management, sanitation, housing and construction								
		management for the sustainable environment.								
PSO 3	Environment and	The ability to acquire and update knowledge								
	Social Commitment	continuously and offer engineering solutions to meet								
		the environmental and societal needs.								

B.E. CIVIL ENGINEERING - REGULATION 2022 (B:2022-2026) CHOICE BASED CREDIT SYSTEM I – VIII SEMESTER CURRICULUM AND SYLLABI

SEME	ESTER I								
SL. No.	Course Code	Course	L	Т	Р	Contact hrs./wk.	-	Ext / Int	Cat.
1.	22CE101	Introduction to Civil Engineering	3	0	0	3	3	60 / 40	HSMC
2.	22MA101	Engineering Mathematics		1	0	4	4	60 / 40	BSC
3.	22EE113	Fundamentals of Electrical and Electronics Engineering	3	0	0	3	3	60 / 40	ESC
4.	22PH104	Applied Physics		0	2	5	4	50 / 50	BSC
5.	22EN101	Technical Communication Skills	2	0	2	4	3	50 / 50	BSC
6.	22CS101	Problem solving using C++	3	0	2	5	4	50 / 50	ESC
7.	22CE102	Engineering Practices Laboratory	0	0	4	4	2	40/60	ESC
8.	22EE115	Fundamentals of Electrical and Electronics Engineering Laboratory	0	0	2	2	1	40/60	ESC
9.	22MC101	Mandatory Course I		3 WEEK		(S	0	0/100	MC
		Total	17	1	12	30	24	900	

SEM	ESTER II								
SL. No.	Course Code	Course	L	Т	Р	Contact hrs./wk.		Ext / Int	Cat.
1.	22GE201	Universal Human Values	3	0	0	3	3	60/40	HSMC
2.	22ME101	Engineering Mechanics	3	0	0	3	3	60/40	ESC
3.	22MA201	Engineering Mathematics	3	1	0	4	4	60/40	BSC
4.	22CH101	Engineering Chemistry	3	0	2	5	4	50/50	BSC
5.	22CS201	Data Structures and Algorithms	3	0	2	5	4	50/50	ESC
6.	22TA101	Heritage of Tamils	1	0	0	1	1	60/40	HSMC
7.	22CE201	Engineering Graphics Laboratory		0	4	4	2	40/60	ESC
8.	22MCxxx	Mandatory Course II		0	0	2	0	0/100	MC
		Total	18	1	8	27	21	800	

SEME	ESTER III								
SL. No.	Course Code	Course	L	Т	Р	Contact hrs./wk.		Ext / Int	Cat.
1.	22CE301	Surveying and Geomatics	3	1	0	4	4	60/40	PCC
2.	22MA301	Probability and Numerical Methods	3	1	0	4	4	60/40	BSC
3.	22CE302	Architectural Planning and Building Drawing	3	0	3	6	4.5	50/50	ESC
4.	22CE303	Strength of Materials	3	0	3	6	4.5	50/50	PCC
5.	22IT311	Introduction to Python programming	1	0	4	5	3	50/50	ESC
6.	22TA201	Tamils and Technology	1	0	0	1	1	60/40	HSMC
7.	22CE304	Surveying and Geomatics Laboratory	0	0	3	3	1.5	40/60	PCC
8.	22MCxxx	Mandatory Course III	2	0	0	2	0	0/100	MC
		Total	16	2	13	31	22.5	800	

SEME	ESTER IV								
SL. No.	Course Code	Course	L	T	Р	Contact hrs./wk.		Ext / Int	Cat.
1.	22CE401	Environmental Engineering	3	0	0	3	3	60/40	PCC
2.	22xxxxx	Open Elective I	1 or 3	0 or 0	4 or 0	5 or 3	3	50/50 or 60/40	OEC
3.	22CE402	Construction Materials and Technology	3	0	3	6	4.5	50/50	PCC
4.	22CE403	Fluid Mechanics and Hydraulic Machinery	3	0	3	6	4.5	50/50	PCC
5.	22CE404	Structural Analysis	3	0	3	6	4.5	50/50	PCC
6.	22CE405	Environmental Engineering Laboratory	0	0	3	3	1.5	40/60	PCC
7.	22EES101	Employability Enhancement Skills (Internship / Training – 2 weeks)						40/60	EES
8.	22MCxxx	Mandatory Course IV	2	0	0	2	0	0/100	MC
		Total	16	31	22	800			

SEME	ESTER V								
SL. No.	Course Code	Course	L	Т	Р	Contact hrs./wk.		Ext / Int	Cat.
1.	22CE501	Geotechnical Engineering	3	1	0	4	4	60/40	PCC
2.	22CExxx	Professional Elective I	3	0	0	3	3	60/40	PEC
3.	22xxxxx	Open Elective II		0 or 0	4 or 0	5 or 3	3	50/50 or 60/40	OEC
4.	22CE502	Design of Reinforced Concrete Structures	3	0	3	6	4.5	50/50	PCC
5.	22CE503	Transportation Engineering	3	0	3	6	4.5	50/50	PCC
6.	22CE504	Soil Mechanics Laboratory	0	0	3	3	1.5	40/60	PCC
7.	22EES102	Employability Enhancement Skills (Internship / Training – 2 weeks)						40/60	EES
		Total 13 1 13 27 21.5 700							

SEME	SEMESTER VI											
SL. No.	Course Code	Course	L	Т	Р	Contact hrs./wk.		Ext / Int	Cat.			
1.	22CE601	Construction Planning and Management	3	1	0	4	4	60/40	PCC			
2.	22Cexxx	Professional Elective II	3	0	0	3	3	60/40	PEC			
3.	22Cexxx	Emerging Elective I	3	0	0	3	3	60/40	EEC			
4.	22Cexxx	Emerging Elective II		0	0	3	3	60/40	EEC			
5.	22CE602	Construction Cost Estimation and Valuation	3	0	3	6	4.5	50/50	PCC			
6.	22CE603	Design of Steel Structures	3	0	3	6	4.5	50/50	PCC			
7.	22CE604	Project Planning and Development Laboratory	0	0	2	2	1	40/60	PCC			
		Total	18	1	8	27	23	700				

SEM	SEMESTER VII										
SL. No.	Course Code	Course	L	Т	Р	Contact hrs./wk.		Ext / Int	Cat.		
1.	22Cexxx	Professional Elective III	3	0	0	3	3	60/40	PEC		
2.	22Cexxx	Professional Elective IV	3	0	0	3	3	60/40	PEC		
3.	22Cexxx	Professional Elective V	3	0	0	3	3	60/40	PEC		
4.	22Cexxx	Professional Elective VI	3	0	0	3	3	60/40	PEC		
5.	22Cexxx	Emerging Elective III	3	0	0	3	3	60/40	EEC		
6.	22Cexxx	Emerging Elective IV	3	0	0	3	3	60/40	EEC		
7.	22CE701	CE701 Design Comprehensive Project		0	4	4	2	40/60	PROJ		
		Total	18	0	4	22	20	700			

SEME	SEMESTER VIII										
SL. No.	Course Code Course L T P Contact hrs./wk. C Ext / Int Cat.										
PRO	PROJECT WORK										
1.	22CE801	Project Work	0	0	24	24	12	40/60	PROJ		
		Total	0	0	24	24	12	100			

L: Lecture T: Tutorial P: Practical C: Credit O: Outside Class hours Cat.: Category

HSMC: Humanities and Social **OEC**: Open Elective Courses Sciences including Management **EEC**: Emerging Elective Courses

BSC : Basic Science Courses EC : Emerging Courses

ESC: Engineering Science Courses **PROJ**: Project Work

PCC : Professional Core Courses EES : Employability Enhancement Skills

PEC: Professional Elective Courses MC: Mandatory Course

Definition of Credit:

L – Lecture
T – Tutorial
P - Practical/Practice (Project and Industry based Courses)

1 Hr. Lecture (L) per week
1 credit
1 Hr. Tutorial (T) per week
1 tredit
1 Hr. Practical (P) per week
0.5 credit

SCHEME OF CREDIT DISTRIBUTION – SUMMARY

SL.	Stream			С	redits/S	Semest	er			Total
No.	Stream	ı	II	III	IV	V	VI	VII	VIII	Credits
1.	Humanities & Social Sciences Including Management (HSMC)	3	4	1						8
2.	Basic Sciences (BSC)	11	8	4						23
3.	Engg. Sciences (ESC)	10	9	7.5						26.5
4.	Professional Core (PCC)			10	18	14.5	14			56.5
5.	Professional Electives (PEC)					3	3	12		18
6.	Open Electives (OEC) / Emerging Elective Courses (EEC)				3	3	6	6		18
7.	Project Work (PROJ) / (EES)				1	1		2	12	16
8.	Mandatory Course (MC)	Non-credit							0	
	Total	24	21	22.5	22	21.5	23	20	12	166

SEMESTER WISE CREDIT DISTRIBUTION: -

Semester	I	=	Ш	IV	٧	VI	VII	VIII	Total
Credits	24	21	22.5	22	21.5	23	20	12	166

Total Credits: 166

STRUCTURE FOR UNDERGRADUATE ENGINEERING PROGRAMME

SL. No.	Course Work – Subject Area	AICTE Suggested Breakdown of Credits	SKCET Suggested Breakdown of Credits	Civil-SKCET Credits			
1.	Humanities and Social Sciences including Management courses	12*	6-12	8			
2.	Basic Science courses	25*	20-29	23			
3.	ngineering Science courses cluding Workshop, Drawing, asics of Electrical / Mechanical Computer etc. 15-32		26.5				
4.	Professional core courses	48*	53-106.5	56.5			
5.	Professional Electives courses relevant to the chosen specialization / branch	18*	15-18	18			
6.	Open Subjects – Electives from other technical and / or emerging subjects	18*	6-18	18			
7.	Project Work, Seminar and / or Internship in Industry or elsewhere.	15.*	13-18 / 27	14			
8.	Industrial Practice /		2/1.5	2			
9.	Mandatory Courses	Non-credit	Non-credit	Non-credit			
Total 160* 167 166							
*Min	or Variations is allowed as per need	d of the respective di	sciplines				

HUMANITIES & SOCIAL SCIENCES INCLUDING MANAGEMENT (8 Credits)

SL. No.	Course Code	Course Title		Contact hrs./Wk.	С	Cat.
1.	22GE201	Universal Human Values	3/0/0	3	3	HSMC
2.	20CE101	Introduction to Civil Engineering	3/0/0	3	3	HSMC
3.	22TA101	Heritage of Tamils	1/0/0	1	1	HSMC
4.	22TA201	Tamils and Technology	1/0/0	1	1	HSMC

BASIC SCIENCE COURSES (23 Credits)

SL. No.	Course Code	Course Title	L/T/P	Contact hrs./Wk.	С	Cat.
1.	22EN101	Technical Communication Skills	2/0/2	4	3	BSC
2.	22PH104	Applied Physics	3/0/2	5	4	BSC
3.	22CH101	Engineering Chemistry	3/0/2	5	4	BSC
4.	22MA101	Engineering Mathematics I	3/1/0	4	4	BSC
5.	22MA201	Engineering Mathematics II	3/1/0	4	4	BSC
6.	22MA301	Probability and Numerical Methods	3/1/0	4	4	BSC

ENGINEERING SCIENCE COURSES (26.5 Credits)

SL. No.	Course Code	Course Title	L/T/P	Contact hrs./Wk.	С	Cat.
1.	22EE111	Fundamentals of Electrical and	3/0/0	3	3	ESC
	1. 2266111	Electronics Engineering	0/0/0	O)	LUC
2	22EE115	Fundamentals of Electrical and	0/02	2	1	ESC
2.	2. ZZEE115	Electronics Engineering Laboratory	0/02	2	ı	ESC
3.	22CS101	Problem solving using C++	3/0/2	5	4	ESC
4.	22CS201	Data Structures and Algorithms	3/0/2	5	4	ESC
5.	22IT311	Introduction to Python programming	1/0/4	5	3	ESC
6.	22ME101	Engineering Mechanics	3/0/0	3	3	ESC
7.	22CE102	Engineering Practices Laboratory	0/0/4	4	2	ESC
8.	22CE201	Engineering Graphics Laboratory	0/0/4	4	2	ESC
9.	22CE302	Architectural Planning and Building Drawing	3/0/3	6	4.5	ESC

PROFESSIONAL CORE COURSES (51 Credits)

SL. No.	Course Code	Course Title	L/T/P	Contact hrs./Wk.	С	Cat.
1.	22CE301	Surveying and Geomatics	3/1/0	4	4	PCC
2.	22CE303	Strength of Materials	3/0/3	6	4.5	PCC
3.	22CE401	Environmental Engineering	3/0/0	3	3	PCC
4.	22CE402	Construction Materials and Technology	3/0/3	6	4.5	PCC
5.	22CE403	Fluid Mechanics and Hydraulic Machinery	3/0/3	6	4.5	PCC
6.	22CE404	Structural Analysis	3/0/3	6	4.5	PCC
7.	22CE501	Geotechnical Engineering	3/1/0	4	4	PCC
8.	22CE502	Design of Reinforced Concrete Structures	3/0/3	6	4.5	PCC
9.	22CE503	Transportation Engineering	3/0/3	6	4.5	PCC

10.	22CE601	Construction Planning and Management	3/1/0	4	4	PCC
11.	22CE602	Construction Cost Estimation and Valuation	3/0/3	6	4.5	PCC
12.	22CE603	Design of Steel Structures	3/0/3	6	4.5	PCC

PROFESSIONAL LABORATORY COURSES (5.5 Credits)

SL. No.	Course Code	Course Title	L/T/P	Contact hrs./Wk.	С	Cat.
1.	22CE304	Surveying and Geomatics Laboratory	0/0/3	3	1.5	PCC
2.	22CE405	Environmental Engineering Laboratory	0/0/3	3	1.5	PCC
3.	22CE504	Soil Mechanics Laboratory	0/0/3	3	1.5	PCC
4.	22CE604	Project Planning and Development Laboratory	0/0/2	2	1	PCC

PROFESSIONAL ELECTIVE COURSES (18 Credits)

SL. No.	Course Code	Course Title	L/T/P	Contact hrs./Wk.	С	Cat.
1.	22CE901	Bridge Engineering and Design of Special Elements	3/0/0	3	3	PEC
2.	22CE902	Conditional Assessment and Rehabilitation of Structures	3/0/0	3	3	PEC
3.	22CE903	Design of Foundations and Retaining Structures	3/0/0	3	3	PEC
4.	22CE904	Green Building Technology	3/0/0	3	3	PEC
5.	22CE905	Ground Improvement and Geosynthetics	3/0/0	3	3	PEC
6.	22CE906	Prefabricated Structures	3/0/0	3	3	PEC
7.	22CE907	Pre-stressed Concrete Structures	3/0/0	3	3	PEC
8.	22CE908	Soil Dynamics and Earthquake Engineering	3/0/0	3	3	PEC
9.	22CE909	Smart Materials and Structures	3/0/0	3	3	PEC
10.	22CE910	Air and Noise Pollution	3/0/0	3	3	PEC
11.	22CE911	Assessment of Contaminated Site and Remediation	3/0/0	3	3	PEC
12.	22CE912	Computing Techniques In Environmental Engineering	3/0/0	3	3	PEC
13.	22CE913	Groundwater and surface water pollution	3/0/0	3	3	PEC
14.	22CE914	Irrigation and water resources engineering	3/0/0	3	3	PEC
15.	22CE915	Remote Sensing and GIS for Civil Engineering	3/0/0	3	3	PEC
16.	22CE916	Surface Water Hydrology	3/0/0	3	3	PEC
17.	22CE917	Solid and Hazardous waste Management	3/0/0	3	3	PEC

22CE918	Operation and Maintenance of Water and Wastewater Treatment Systems	3/0/0	3	3	PEC
22CE919	Computer Simulation Applications in Transportation Engineering		3	3	PEC
22CE920	Construction Personnel Management	3/0/0	3	3	PEC
22CE921	Economics and Business Finance	3/0/0	3	3	PEC
22CE922	Highway Construction and Management	3/0/0	3	3	PEC
22CE923	Marketing Management	3/0/0	3	3	PEC
22CE924	Lean Startup Management	3/0/0	3	3	PEC
22CE925	Risk and Reliability Analysis of Civil Infrastructure Systems	3/0/0	3	3	PEC
22CE926	Road Transport Management and Economics	3/0/0	3	3	PEC
22CE927	Valuation of Real Properties	3/0/0	3	3	PEC
22CE928	Finite Element Analysis	3/0/0	3	3	PEC
22CE929	Advanced Structural Analysis	3/0/0	3	3	PEC
22CE930	Design of Substructures	3/0/0	3	3	PEC
22CE931	Seismic Design of Structures	3/0/0	3	3	PEC
22CE932	Coastal Engineering	3/0/0	3	3	PEC
22CE933	Supply Chain Management and Logistics in Construction	3/0/0	3	3	PEC
22CE934	Formwork Engineering	3/0/0	3	3	PEC
22CE935	Intelligent transportation system	3/0/0	3	3	PEC
22CE936	Building Services and Management	3/0/0	3	3	PEC
	22CE919 22CE921 22CE922 22CE923 22CE924 22CE925 22CE926 22CE927 22CE928 22CE929 22CE930 22CE931 22CE932 22CE933 22CE933 22CE934 22CE934	22CE918 Wastewater Treatment Systems 22CE919 Computer Simulation Applications in Transportation Engineering 22CE920 Construction Personnel Management 22CE921 Economics and Business Finance 22CE922 Highway Construction and Management 22CE923 Marketing Management 22CE924 Lean Startup Management 22CE925 Risk and Reliability Analysis of Civil Infrastructure Systems 22CE926 Road Transport Management and Economics 22CE927 Valuation of Real Properties 22CE928 Finite Element Analysis 22CE929 Advanced Structural Analysis 22CE930 Design of Substructures 22CE931 Seismic Design of Structures 22CE932 Coastal Engineering 22CE933 Supply Chain Management and Logistics in Construction 22CE935 Intelligent transportation system	22CE918Wastewater Treatment Systems3/0/022CE919Computer Simulation Applications in Transportation Engineering3/0/022CE920Construction Personnel Management3/0/022CE921Economics and Business Finance3/0/022CE922Highway Construction and Management3/0/022CE923Marketing Management3/0/022CE924Lean Startup Management3/0/022CE925Risk and Reliability Analysis of Civil Infrastructure Systems3/0/022CE926Road Transport Management and Economics3/0/022CE927Valuation of Real Properties3/0/022CE928Finite Element Analysis3/0/022CE929Advanced Structural Analysis3/0/022CE930Design of Substructures3/0/022CE931Seismic Design of Structures3/0/022CE932Coastal Engineering3/0/022CE933Supply Chain Management and Logistics in Construction3/0/022CE934Formwork Engineering3/0/022CE935Intelligent transportation system3/0/0	22CE918 Wastewater Treatment Systems 3/0/0 3 22CE919 Computer Simulation Applications in Transportation Engineering 3/0/0 3 22CE920 Construction Personnel Management 3/0/0 3 22CE921 Economics and Business Finance 3/0/0 3 22CE922 Highway Construction and Management 3/0/0 3 22CE923 Marketing Management 3/0/0 3 22CE924 Lean Startup Management 3/0/0 3 22CE925 Risk and Reliability Analysis of Civil Infrastructure Systems 3/0/0 3 22CE926 Road Transport Management and Economics 3/0/0 3 22CE927 Valuation of Real Properties 3/0/0 3 22CE928 Finite Element Analysis 3/0/0 3 22CE929 Advanced Structural Analysis 3/0/0 3 22CE931 Seismic Design of Substructures 3/0/0 3 22CE932 Coastal Engineering 3/0/0 3 22CE933 Supply Chain Management and Logistics in Construction 3/0/0	22CE918 Wastewater Treatment Systems 3/0/0 3 3 22CE919 Computer Simulation Applications in Transportation Engineering 3/0/0 3 3 22CE920 Construction Personnel Management 3/0/0 3 3 22CE921 Economics and Business Finance 3/0/0 3 3 22CE922 Highway Construction and Management 3/0/0 3 3 22CE923 Marketing Management 3/0/0 3 3 22CE924 Lean Startup Management 3/0/0 3 3 22CE925 Risk and Reliability Analysis of Civil Infrastructure Systems 3/0/0 3 3 22CE926 Road Transport Management and Economics 3/0/0 3 3 22CE927 Valuation of Real Properties 3/0/0 3 3 22CE928 Finite Element Analysis 3/0/0 3 3 22CE930 Design of Substructures 3/0/0 3 3 22CE931 Seismic Design of Structures 3/0/0 3 3

	PRO	FESSIONAL ELECT	TIVE COURSES - VERT	TCALS	
Vertical I Structural Engineering	Vertical II Geotechnical Engineering	Vertical III Construction Management	Vertical IV Environmental Engineering	Vertical V Infrastructures Engineering	Vertical VI Diversified Courses
Bridge Engineering and Design of Special Elements	Design of Foundations and Retaining Structures	Construction Personnel Management	Air and Noise Pollution	Green Building Technology	Smart Materials and Structures
Conditional Assessment and Rehabilitation of Structures	Ground Improvement and Geosynthetics	Economics and Business Finance	Assessment of Contaminated Site and Remediation	Computer Simulation Applications in Transportation Engineering	Computing Techniques In Environmental Engineering
Prefabricated Structures	Soil Dynamics and Earthquake Engineering	Lean Startup Management	Groundwater and surface water pollution	Highway Construction and Management	Surface Water Hydrology
Pre-stressed Concrete Structures	Design of Substructures	Risk and Reliability Analysis of Civil Infrastructure Systems	Irrigation and water resources engineering	Remote Sensing and GIS for Civil Engineering	Marketing Management
Finite Element Analysis	Seismic Design of Structures	Supply Chain Management and Logistics in Construction	Solid and Hazardous waste Management	Road Transport Management and Economics	Valuation of Real Properties
Advanced Structural Analysis	Coastal Engineering	Formwork Engineering	Operation and Maintenance of Water and Wastewater Treatment Systems	Intelligent transportation system	Building Services and Management

EMERGING ELECTIVE COURSES (12 Credits)

SL. No.	Course Code	Course Title	L/T/P	Contact hrs./Wk.	С	Cat.
1.	22CE007	Applications of Sensors and IoT in Civil Engineering	3/0/0	3	3	EEC
2.	22CE008	Building and Town Planning	3/0/0	3	3	EEC
3.	22CE009	Environmental Ethics and Management	3/0/0	3	3	EEC
4.	22CE010	Environmental Geotechnics	3/0/0	3	3	EEC
5.	22CE011	Low carbon Building Materials and Systems	3/0/0	3	3	EEC
6.	22CE012	Metro Rail Engineering and Infrastructure	3/0/0	3	3	EEC
7.	22CE013	Nanotechnology in Civil and Environmental Engineering	3/0/0	3	3	EEC
8.	22CE014	Project Formulation and Implementation	3/0/0	3	3	EEC
9.	22CE015	Rural Water Supply and Onsite Sanitation Systems	3/0/0	3	3	EEC
10.	22CE016	Smart City Planning and Development	3/0/0	3	3	EEC
11.	22CE017	Sustainable Construction Materials and Methods	3/0/0	3	3	EEC
12	22CE018	Waste to Energy	3/0/0	3	3	EEC

OPEN ELECTIVE COURSES (6 Credits) [Offered to Other Branches]

SL. No.	Course Code	Course Title	L/T/P	Contact hrs./Wk.	С	Cat.
1.	22CE001	Disaster Management	3/0/0	3	3	OEC
2.	22CE002	Engineering Risk and Uncertainty	3/0/0	3	3	OEC
3.	22CE003	Environmental Pollution and Global issues	3/0/0	3	3	OEC
4.	22CE004	Project Management	3/0/0	3	3	OEC
5.	22CE005	Industrial Safety	3/0/0	3	3	OEC
6.	22CE006	Research Methodology and IPR	3/0/0	3	3	OEC

PROJECT WORK (14 Credits)

SL. No.	Course Code	Course Title	L/T/P	Contact hrs./Wk.	С	Cat.
1.	22CE701	Design Comprehensive Project	0/0/4	4	2	PROJ
2.	22CE801	Project Work	0/0/24	24	12	PROJ

EMPLOYABILITY ENHANCEMENT SKILLS (2 Credits)

SL. No.	Course Code	Course Title	Duration	С	Cat.
1.	22EES101	Employability Enhancement Skills (Internship / Training)	2 Weeks	1	EES
2.	22EES102	Employability Enhancement Skills (Internship / Training)	2 Weeks	1	EES

MANDATORY COURSES (Non-credit)

SL. No.	Course Code	Course Title	L/T/P	Contact hrs./Wk.	С	Cat.
1.	22MC101	Induction Programme	3 WEEKS		0	MC
2.	22MC102	Environmental Sciences	2/0/0	2	0	MC
3.	22MC103	Soft Skills	2/0/0	2	0	MC
4.	22MC104	Management Organizational Behavior	2/0/0	2	0	MC
5.	22MC105	General Aptitude	2/0/0	2	0	MC

VALUE ADDED COURSES (Additional credit courses)

SL. No.	Course Code	Course Title	Course Credits
1.	22VA130	Effective Communication Skills	2
2.	22VA101	Building Function Design using AutoCAD	1
3.	22VA102	Total Station and GPS Surveying	1
4.	22VA103	Arc GIS for Civil Engineers	1
5.	22VA104	Structural Analysis and Design Using STAAD.Pro	1
6.	22VA105	Project Management Using Primavera	1
7.	22VA106	3DBuilding Modeling Using Revit Architecture	1