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Program Schemes for B.E (Civil Engineering)

Cluster: Engineering and Technology, Institute: UIE, Department: Civil Engineering, Type of Program: UG

First Year				Second Year			
	Course Name	**Course Category**	**Credits**		**Course Name**	**Course Category**	**Credits**
Semester-1	Logical Thinking & Problem Solving	Major Core	4	**Semester-3**	Strength of materials	Major Core	4
	Mathematics-I	Major Core	5		Mechanics and Dynamics of Fluid	Major Core	4
	Communication Skills-I	Ability Enhancement	2		Geotechnical Engineering	Major Core	4
	Semiconductor Physics & Applications	Major Core	3		Gender Equality and Empowerment	Value Education	1
	Engineering Physics	Major Core	4		Aptitude-1	Ability Enhancement	1
	Engineering Graphics using CAD Lab	Major Core	2		Universal Human Values, Ethics and Life Skills-2	Value Education	2
	Academic and Career Pathway Planning	Value Education	0		General Proficiency-II	Ability Enhancement	1
	AI Applications Lab	Major Core	1		Entrepreneurship Mindset	Skill Enhancement	1
	Environment Science, Waste and Disaster Management	Value Education	2		Critical Enquiry and Research Methodology	Ability Enhancement	1
					Social Internship (Community Engagement and Social Responsibility- For Non LEET)	Internship or Training	2
					Sustainable Engineering (For LEET)	Minor Core	2
					Building Materials and Fast Track Construction (For Non LEET)	Minor Core	2
					Constructionarium (For Non LEET)	Minor Core	1
					Bridge Course on Mathematics (For LEET)	Major Core	3

Semester -2	Basic Data Structures	Major Core	4	Semester-4	Mathematics-III	Major Core	4
	Mathematics-II	Major Core	5		Surveying and Geomatics	Major Core	3
	Soft Skills-1	Skill Enhancement	1		Transportation Engineering	Major Core	4
	General Proficiency-1	Ability Enhancement	1		Structural Analysis	Major Core	3
	Emerging & Disruptive Technologies Workshop	Major Core	2		Minor Elective 1	Minor Elective	3
	Engineering Chemistry	Major Core	3		Concrete Technology	Minor Core	2
	Engineering Mechanics	Major Core	3		Mid-Grade Project [MGP-1]	PROJECT	1
	Workshop	Major Core	1		Institution Training on 2D Drawing and 3D Building, Information Modelling	Internship or Training	1
	Design Thinking & Innovation	Skill Enhancement	1		Aptitude-2	Ability Enhancement	1
	Universal Human values, Ethics and Life Skills-I	Value Education	1		Soft Skills-2	Skill Enhancement	1
	Communications Skills - II	Skill Enhancement	1		Marketing & Management Essentials	Ability Enhancement	1
					Business Planning & Legal Basics	Skill Enhancement	1
					Academic Writing	Ability Enhancement	1
					Statistical Data Analysis	Skill Enhancement	1

Third Year				Fourth Year			
Semester -5	**Course Name**	**Course Category**	**Credits**	Semester-7	**Course Name**	**Course Category**	**Credits**
	AI & ML for Civil Engineering	Major Core	2		Open Elective-II	Open Elective	3
	Probability and Statistics	Major Core	3		Numerical Analysis and Optimization Techniques	Major Core	4

	Environmental Engineering	Major Core	4		Capstone Project-1 / Dissertation (Part - I)	PROJECT	4
	Minor Elective 2	Minor Elective	3		Minor Elective -5	Minor Elective	4
	Minor Elective 3	Minor Elective	2		Industry Internship	Internship/ Training	1
	General Proficiency-3	Skill Enhancement	1		General Proficiency-4	Skill Enhancement	1
	Technical/Domain Intership	SUMMER INTERNSHIP	1				
	Professional Ethics	Ability Enhancement	1				
	Aptitude-3	Ability Enhancement	1				
	Soft Skills-3	Skill Enhancement	1				
	Customer Engagement & Organic Growth	Ability Enhancement	1				
	AI Automation & Sustainability	Skill Enhancement	1				
	AI & Data-Driven Research	Ability Enhancement	1				
	Research Ethics & Intellectual Property Rights	Ability Enhancement	1				
Semester-6	Open Elective-I	Open Elective	3	**Semester-8**	Minor Elective -6	Minor Elective	3
	Water Resources and Irrigation Engineering	Major Core	2		Open Elective-III	Open Elective	3
	Professional Practice and Construction Management	Major Core	3		Capstone Project-2 / Dissertation (Part -I I)	PROJECT	8
	Design of Concrete Structures-I	Minor Core	4		Internship	Internship	12
	Structural Design and Detailing using Automation Tools	Minor Core	1				
	Smart Structures and Automation Lab	Minor Core	1				
	Earth Sciences	Minor Core	2				

	Minor Elective -4	Minor Elective	3				
	Mid-Grade Project [MGP-2]	PROJECT	1				
	Introduction to SDGs	Value Education	1				
	Aptitude-4	Ability Enhancement	1				
	Soft Skills-4	Skill Enhancement	1				
	Business Strategies & Operations	Ability Enhancement	1				
	Finance & Economics Fundamentals	Skill Enhancement	1				
	Emerging Resaerch Tools and Technologies	Skill Enhancement	1				
	Domain Specific Term Paper	Skill Enhancement	1				

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Minor Electives			
Semester	**Course Name**	**Course Category**	**Credits**
4	Traffic Engineering	Minor Elective	3
4	Health Monitoring, Repair and Rehabilitation of Structures	Minor Elective	3
4	Advance Geotechnical Engineering	Minor Elective	3
4	Solid Waste Management	Minor Elective	3
4	Infrastructure Planning and Lean Management	Minor Elective	3
5	Urban Transportation Planning	Minor Elective	3
5	Design of Metal Structures	Minor Elective	3
5	Air Pollution Control	Minor Elective	3
5	Foundation Engineering	Minor Elective	3
5	Quality Control & Safety Management	Minor Elective	3
5	Traffic Modelling, Analysis and Design	Minor Elective	3
5	Energy Efficient Buildings	Minor Elective	3
5	Land and Water Management	Minor Elective	3
5	Ground Improvements	Minor Elective	3
5	High rise and facilities management	Minor Elective	3
6	Planning and Design of Railways, Harbour and Airport	Minor Elective	3
6	Pre-Stressed Concrete	Minor Elective	3
6	Industrial wastewater and solid waste management	Minor Elective	3
6	Geosynthetics & Reinforced Soil Structures	Minor Elective	3
6	Resource Utilization and Construction Productivity	Minor Elective	3
7	Pavement Construction, Maintenance and Management	Minor Elective	3
7	Design of High Rise Structures	Minor Elective	3
7	Soil Dynamics	Minor Elective	3
7	Environmental Geotechnology	Minor Elective	3
7	Contract Management	Minor Elective	3
8	Intelligent Transport System Technologies and Applications	Minor Elective	3
8	Design of concrete structures – II	Minor Elective	3
8	Environment Impact, laws and regulations	Minor Elective	3
8	Landfill Engineering	Minor Elective	3
8	Design and construction of prefabricated structures	Minor Elective	3

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Employability Track			
Semester	**Course Name**	**Course Category**	**Credits**
4	Aptitude-2	Ability Enhancement	1
4	Soft Skills-2	Skill Enhancement	1
5	Aptitude-3	Ability Enhancement	1
5	Soft Skills-3	Skill Enhancement	1
6	Aptitude-4	Ability Enhancement	1
6	Soft Skills-4	Skill Enhancement	1

Innovation Track			
Semester	**Course Name**	**Course Category**	**Credits**
4	Marketing & Management Essentials	Ability Enhancement	1
4	AI Automation & Sustainability	Skill Enhancement	1
5	Business Strategies & Operations	Ability Enhancement	1
5	Finance & Economics Fundamentals	Skill Enhancement	1
6	Customer Engagement & Organic Growth	Ability Enhancement	1
6	Business Planning & Legal Basics	Skill Enhancement	1

Research Track			
Semester	**Course Name**	**Course Category**	**Credits**
4	Academic Writing	Ability Enhancement	1
4	Research Ethics & Intellectual Property Rights	Skill Enhancement	1
5	Statistical Data Analysis	Ability Enhancement	1
5	Emerging Research Tools and Technologies	Skill Enhancement	1
6	AI & Data-Driven Research	Ability Enhancement	1
6	Domain Specific Term Paper	Skill Enhancement	1