

**Kolhapur Institute of Technology's
College of Engineering (Autonomous),
Kolhapur**



KOLHAPUR INSTITUTE
OF TECHNOLOGY'S
**COLLEGE OF
ENGINEERING**
(AUTONOMOUS),
KOLHAPUR



**Department of Civil Engineering
Curriculum and Syllabus for
B. Tech. Civil Engineering
Scheme: 2023-24 (As Per NEP 2020)**

DEPARTMENT OF CIVIL ENGINEERING

ABOUT THE DEPARTMENT

The department of Civil Engineering was established in year 1988 with an intake capacity of 30 students. The intake capacity was then increased to 60 in the year 2007 & subsequently increased to 120 in year 2011. The department is equipped with total 10 labs with an investment of Rs. 1,36,93,135.86/- which are used for various academics, research and consultancy works.

The college has been accredited by NAAC with 3.33 CGPA. The department of Civil Engineering has been accredited by NBA five times for three years terms 2005, 2008, 2018, 2020 and 2023. The college has been granted autonomous status as well from the year 2017-18.

DEPARTMENT VISION

To produce dynamic and compatible civil engineer who will meet the requirements of local and global industries and impart services to the society.

DEPARTMENT MISSION

M1:	To make the students responsible towards society through technical guidance, exhibition and awareness campaigns.
M2:	To inculcate flexibility and dynamism in instructional method along with sound knowledge base through modern tools, discipline and hard work.
M3:	To create academic excellence by encouragement to students for participation and to win laurels for attaining self-esteem and personality development.
M4:	To inculcate discipline and hardworking attitude in students

PROGRAMME EDUCATIONAL OBJECTIVES (PEO)

PEO1:	To pursue an education in enriching knowledge of civil engineering.
PEO2:	To work with a firm foundation in mathematical, scientific, engineering and logical fundamentals of civil engineering required to solve civil engineering problems and also to pursue higher studies.
PEO3:	To exhibit good scientific and engineering breadth related to computers, environmental issues and remote electronic applications so as to comprehend, analyze, design and execute civil engineering projects.
PEO4:	To acquire professional and ethical attitude, effective communication skills, teamwork and leadership skills and ability to relate various issues for uplift.

DEPARTMENT OF CIVIL ENGINEERING

PEO5:	To have an academic environment excellence, leadership, guidelines and lifelong learning needed for successful professional career in civil engineering.
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PROGRAMME OUTCOMES (PO)	
PO1:	Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and engg. Specialization to the solution of complex engineering problems.
PO2:	Problem analysis: Identify, formulate, research literature, and analyze engineering problems to arrive at substantiated conclusions using first principles of mathematics, natural, and engineering sciences.
PO3:	Design/development of solutions: Design solutions for complex engineering problems and design system components, processes to meet the specifications with consideration for the public health and safety, and the cultural, societal, and environmental considerations.
PO4:	Conduct investigations of complex problems: Use research-based knowledge including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
PO5:	Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
PO6:	The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
PO7:	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.
PO8:	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
PO9:	Individual and team work: Function effectively as an individual, and as a member or leader in teams, and in multidisciplinary settings.
PO10:	Communication: Communicate effectively with the engineering community and with society at large. Be able to comprehend and write effective reports documentation. Make effective presentations, and give and receive clear instructions.
PO11:	Project management and finance: Demonstrate knowledge and understanding of engineering and management principles and apply these to one's own work, as a member and leader in a team. Manage projects in multidisciplinary environments.
PO12:	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.

DEPARTMENT OF CIVIL ENGINEERING

PROGRAMME SPECIFIC OUTCOMES (PSO)

PSO1:	Foundation for work on site: Ability to understand and demonstrate ability to visualize & work on site quality control systems through consultancy work in the department.
PSO2:	Ability to apply knowledge in various fields to provide solution to new ideas and innovations through the departmental expertise in various fields like Structural, Geotechnical, Water resource, Environmental, Transportation, Quality control, Surveying, Remote sensing & GIS, Project management.
PSO3:	Show excellent performance in academics to pursue higher studies and succeed in engineering service examinations

MAPPING OF PEOs TO POs

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
PEO1	3	1	1	--	--	--	--	1	1	1	2	1
PEO2	1	2	--	2	1	--	1	--	--	1	3	1
PEO3	1	1	1	--	3	--	--	--	--	1	--	--
PEO4	--	--	3	--	1	2	3	2	--	3	2	3
PEO5	1	2	1	--	--	--	2	--	--	2	2	3

MAPPING OF PEOs TO PSOs

	PSO1	PSO2	PSO3
PEO1	--	--	2
PEO2	--	2	1
PEO3	1	3	1
PEO4	--	2	2
PEO5	3	1	1

Kolhapur Institute of Technology's
**COLLEGE OF ENGINEERING, KOLHAPUR (EMPOWERED
AUTONOMOUS)**



DEPARTMENT OF CIVIL ENGINEERING

As per NEP Guidelines
Proposed Scheme of Credit Distribution

Year		FY		SY		TY		B. Tech.		Actual	NEP Guidelines
Sr No		I	II	III	IV	V	VI	VII	VIII		
1	Basic Science course	8	8							16	14-18
2	Engineering Science course	7	6							13	12-16
3	Programme Core Courses	3		16	15	10	10	11		61	44-56
4	Programme Elective course					3	4	3	6	16	20
5	Multi Minor			2	3	3	3	3		14	14
6	Open elective					3	3	2		8	8
7	Vocational and Skill Enhancement course	1	3		1		1			6	8
8	Ability enhancement course		3				1			4	4
9	Entrepreneurship /Economics/ Management courses (Mgt/Economics/Mkt/Finance)			2		2				4	4
10	Indian knowledge system	2								2	2
11	Value Education course			2	2					4	4
12	Research Methodology (Project)							4		4	4
13	Comm. Engg Project/Field Project (PBL/Seminar/Mini Project)					1	1			2	2
14	Project								4	4	4
15	Internship/OJT (PBL/Seminar/Mini Project/Virtual Internship/Physical)			1	1				6	8	12
16	Co curricular courses		1		1		1		1	4	4
		20-22	20-22	20-22	20-22	20-22	20-22	20-22	20-22	174	
		21	21	23	23	23	23	23	17	174	

DEPARTMENT OF CIVIL ENGINEERING

B. Tech. Civil Engineering Regulation 2023-24

SEMESTER I												
Sr. No	Category	Course Code	Course Name	L	T	P	Hrs. / Week	Credits	Evaluation Scheme			
									Component	Marks		
										Max.	Min. for Passing	
1	BSC	UHSBS0101	Engineering Mathematics-I	3	1	-	4	4	ISE1	10		40
									MSE	30		
									ISE2	10		
									ESE	50	20	
2	BSC	UHSBS0108	General Physics and Optics	3	-	-	3	3	ISE1	10		40
									MSE	30		
									ISE2	10		
									ESE	50	20	
3	ESC	UHSES0109	Engineering Mechanics	3	-	-	3	3	ISE1	10		40
									MSE	30		
									ISE2	10		
									ESE	50	20	
4	ESC	UHSES0110	Basic Mechanical Engineering	2	-	-	2	2	ISE1	10		40
									MSE	30		
									ISE2	10		
									ESE	50	20	
5	ESC	UHSES0111	Introduction to Python Programming	2	-	-	2	2	ISE1	10		40
									MSE	30		
									ISE2	10		
									ESE	50	20	
6	BSC	UHSBS0128	General Physics and Optics Laboratory	-	-	2	2	1	ISE	50	20	
7	ESC	UHSES0129	Engineering Mechanics Laboratory	-	-	2	2	1	ISE	50	20	
8	ESC	UHSES0130	Basic Mechanical Engineering Laboratory	-	-	2	2	1	ISE	50	20	
9	ESC	UHSES0131	Introduction to Python programming Laboratory	-	-	2	2	1	ISE	50	20	
10	VSEC	UHSVS0132	Workshop Practice Laboratory	-	-	2	2	1	ISE	50	20	
11	IKS	UHSIK0136	Ecology, Energy & Environment	2	-	-	2	2	ISE	100	40	
Total							26	21		800		

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SEMESTER II												
Sr. No	Category	Course Code	Course Name	L	T	P	Hrs. / Week	Credits	Evaluation Scheme			
									Component	Marks		
										Max.	Min. for Passing	
1	BSC	UHSBS0201	Engineering Mathematics-II	3	1	-	4	4	ISE1	10		40
									MSE	30		
									ISE2	10		
									ESE	50	20	
2	BSC	UHSBS0212	Applied Chemistry	3	-	-	3	3	ISE1	10		40
									MSE	30		
									ISE2	10		
									ESE	50	20	
3	ESC	UHSAE0203	Communication Skills	3	-	-	3	3	ISE1	10		40
									MSE	30		
									ISE2	10		
									ESE	50	20	
4	ESC	UHSES0213	Basic Civil Engineering	2	-	-	2	2	ISE1	10		40
									MSE	30		
									ISE2	10		
									ESE	50	20	
5	ESC	UHSPC0214	Fundamentals of Electrical Engineering	2	-	-	2	2	ISE1	10		40
									MSE	30		
									ISE2	10		
									ESE	50	20	
6	BSC	UHSBS0233	Applied Chemistry Laboratory	-	-	2	2	1	ISE	50	20	
7	ESC	UHSAE0222	Communication Skills Laboratory	-	-	2	2	1	ISE	50	20	
8	ESC	UHSES0234	Basic Civil Engineering Laboratory	-	-	2	2	1	ISE	50	20	
9	ESC	UHSPC0235	Fundamentals of Electrical Engineering Laboratory	-	-	2	2	1	ISE	50	20	
10	VSEC	UHSVS0238	Computer Aided Engineering Drawing	-	-	2	2	1	ISE	50	20	
11	IKS	UHSCC0239	Co-Curricular Course	2	-	-	2	2	ISE	100	40	
Total							24	21		800		

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SEMESTER III												
Sr. No	Category	Course Code	Course Name	L	T	P	Hrs. / Week	Credits	Evaluation Scheme			
									Component	Marks		
										Max.	Min. for Passing	
1	PC	UCVPC0301	Mathematics and Numerical Analysis	3	1	-	4	4	ISE1	10		40
									MSE	30		
									ISE2	10		
									ESE	50	20	
2	PC	UCVPC0302	Mechanics of Solids	3	-	-	3	3	ISE1	10		40
									MSE	30		
									ISE2	10		
									ESE	50	20	
3	PC	UCVPC0303	Modern Surveying	3	-	-	3	3	ISE1	10		40
									MSE	30		
									ISE2	10		
									ESE	50	20	
4	PC	UCVPC0304	Building Construction and Services	3	-	-	3	3	ISE1	10		40
									MSE	30		
									ISE2	10		
									ESE	50	20	
5	VEC	UCVVE0305	Environmental Studies	2	-	-	2	2	ISE	50	20	
6	HSSM	UCVEM0306	Engineering Economics	2	-	-	2	2	ESE	50	20	
7	PC	UCVPC0331	Modern Surveying Laboratory	-	-	2	2	1	ISE	25	10	20
									ESE(POE)	25		
8	PC	UCVPC0332	Mechanics of Solids Laboratory	-	-	2	2	1	ISE	25	10	20
									ESE(OE)	25		
9	PC	UCVPC0333	Computer Aided Drafting Laboratory	-	-	2	2	1	ISE	50	20	
10	OJT	UCVIL0371	Innovative Practices and Learning I Laboratory	-	-	2	2	1	ISE	50	20	
11	MM	U**MM****	Multi Disciplinary Minor I*	2	-	-	2	2	ESE	100	40	
			Total:				27	23		800		

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SEMESTER IV												
Sr. No	Category	Course Code	Course Name	L	T	P	Hrs. / Week	Credits	Evaluation Scheme			
									Component	Marks		
										Max.	Min. for Passing	
1	PC	UCVPC0401	Concrete Technology	2	-	-	2	2	ISE1	10		40
									MSE	30		
									ISE2	10		
									ESE	50	20	
2	PC	UCVPC0402	Structural Analysis	3	-	-	3	3	ISE1	10		40
									MSE	30		
									ISE2	10		
									ESE	50	20	
3	PC	UCVPC0403	Water Treatment & Supply Systems	3	-	-	3	3	ISE1	10		40
									MSE	30		
									ISE2	10		
									ESE	50	20	
4	PC	UCVPC0404	Building Planning & Design	2	-	-	2	2	ISE1	10		40
									MSE	30		
									ISE2	10		
									ESE	50	20	
5	PC	UCVPC0405	Engineering Hydraulics	3	-	-	3	3	ISE1	10		40
									MSE	30		
									ISE2	10		
									ESE	50	20	
6	VEC	UCVVE0406	Constitution of India	2	-	-	2	2	ISE	50	20	
7	PC	UCVPC0431	Engineering Hydraulics Laboratory	-	-	2	2	1	ISE	25	10	20
									ESE(POE)	25		
8	VSEC	UCVVS0432	Computer Aided Design And Drafting Laboratory	-	-	2	2	1	ISE	25	10	20
									ESE(OE)	25		
9	PC	UCVPC0433	Concrete Technology Laboratory	-	-	2	2	1	ISE	25	10	
10	OJT	UCVIL0471	Innovative Practices and Learning II Laboratory	-	-	2	2	1	ISE	25	10	
11	CC	UCVCC0434	Co-curricular Activities II	-	-	2	2	1	ISE	50	20	
12	MM	U**MM****	Multi Disciplinary Minor II*	3	-	-	3	3	ESE	100	40	
	Total:						28	23		850		

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SEMESTER V												
Sr. No	Category	Course Code	Course Name	L	T	P	Hrs. / Week	Credits	Evaluation Scheme			
									Component	Marks		
										Max.	Min. for Passing	
1	PC	UCVPC0501	Design of Steel Structures	3	-	-	3	3	ISE1	10	20	40
									MSE	30		
									ISE2	10		
									ESE	50		
2	PC	UCVPC0502	Theory of Structures	2	-	-	2	2	ISE1	10	20	40
									MSE	30		
									ISE2	10		
									ESE	50		
3	PC	UCVPC0503	Geotechnical Engineering	3	-	-	3	3	ISE1	10	20	40
									MSE	30		
									ISE2	10		
									ESE	50		
4	PEC	UCVPE051*	Program Elective – I	3	-	-	3	3	ISE1	10	20	40
									MSE	30		
									ISE2	10		
									ESE	50		
5	OE	UCVOE052*	Open Elective I	3	-	-	3	3	ISE1	10	20	40
									MSE	30		
									ISE2	10		
									ESE	50		
6	HSSM	UCVEM0504	Construction Project Management	2	-	-	2	2	ESE	50	20	
7	PC	UCVPC0531	Geotechnical Engineering Laboratory	-	-	2	2	1	ISE	25	10	20
									ESE(POE)	25		
8	PC	UCVPC0532	Water Quality Monitoring Laboratory	-	-	2	2	1	ISE	25	10	20
									ESE(OE)	25		
9	VSEC	UCVVS0533	Simulation and Design Laboratory	-	-	2	2	1	ISE	25	10	
10	CEP	UCVIL0571	Community Field Project	-	-	2	2	1	ISE	25	10	
11	MM	U**MM****	Multi Disciplinary Minor III*	3	-	-	3	3	ESE	100	40	
			Total:				27	23		800		

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SEMESTER VI													
Sr. No	Category	Course Code	Course Name	L	T	P	Hrs. / Week	Credits	Evaluation Scheme				
									Component	Marks			
										Max.	Min. for Passing		
1	PC	UCVPC0601	Design of Reinforced Concrete Structures	3	-	-	3	3	ISE1	10		40	
									MSE	30			
									ISE2	10			
									ESE	50	20		
2	PC	UCVPC0602	Engineering Hydrology	2	-	-	2	2	ISE1	10		40	
									MSE	30			
									ISE2	10			
									ESE	50	20		
3	PC	UCVPC0603	Transportation Engineering	3	-	-	3	3	ISE1	10		40	
									MSE	30			
									ISE2	10			
									ESE	50	20		
4	PEC	UCVPE061*	Program Elective - II	3	-	-	3	3	ISE1	10		40	
									MSE	30			
									ISE2	10			
									ESE	50	20		
5	OE	UCVOE062*	Open Elective II	3	-	-	3	3	ISE1	10		40	
									MSE	30			
									ISE2	10			
									ESE	50	20		
6	AEC	UCVAE0631	Business Communication and Value Science	-	-	2	2	1	ISE	50		20	
7	PC	UCVPC0632	Design of Steel Structure Laboratory	-	-	2	2	1	ISE	25		20	
									ESE(POE)	25	10		
8	PC	UCVPC0633	Transportation Engineering Laboratory	-	-	2	2	1	ISE	25		20	
									ESE(OE)	25	10		
9	PC	UCVPC0634	Wastewater Monitoring Laboratory	-	-	2	2	1	ISE	25	10		
10	FP	UCVIL0671	Mini Project	-	-	2	2	1	ISE	25	10		
11	CC	UCVCC0635	Co-curricular Activities III	-	-	2	2	1	ISE	50	20		
12	MM	U**MM****	Multi Disciplinary Minor IV*	3	-	-	3	3	ESE	100	40		
			Total:					29	23		850		

DEPARTMENT OF CIVIL ENGINEERING

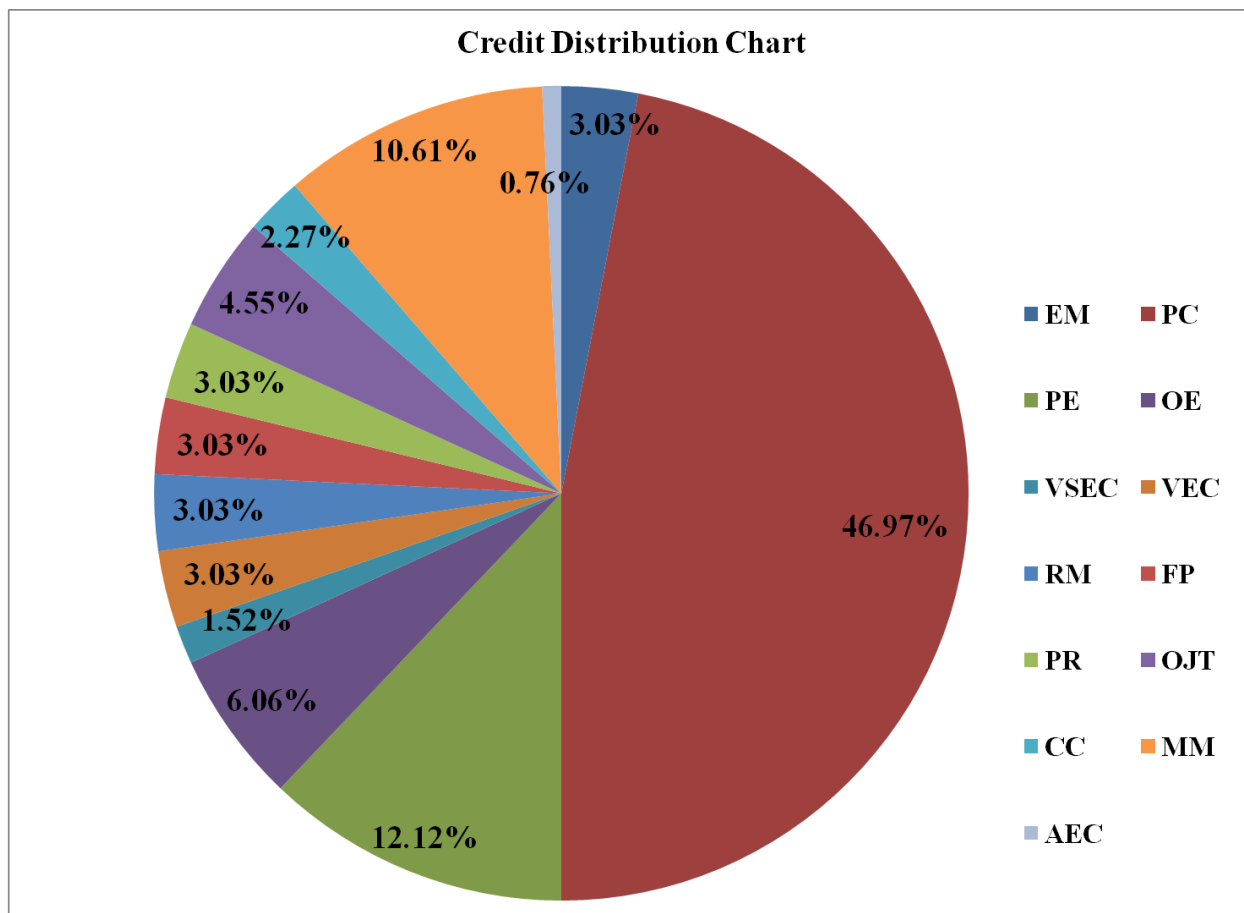
SEMESTER VII													
Sr. No	Category	Course Code	Course Name	L	T	P	Hrs. / Week	Credits	Evaluation Scheme				
									Component	Marks			
										Max.	Min. for Passing		
1	PC	UCVPC0701	Quantity Surveying and Valuation	3	-	-	3	3	ISE1	10		40	
									MSE	30			
									ISE2	10			
									ESE	50	20		
2	PC	UCVPC0702	Earthquake Engineering & Structural Dynamics	3	-	-	3	3	ISE1	10		40	
									MSE	30			
									ISE2	10			
									ESE	50	20		
3	PC	UCVPC0703	Water Resource Engineering	3	-	-	3	3	ISE1	10		40	
									MSE	30			
									ISE2	10			
									ESE	50	20		
4	PEC	UCVPE071*	Program Elective - III	3	-	-	3	3	ISE1	10		40	
									MSE	30			
									ISE2	10			
									ESE	50	20		
5	OE	UCVOE072*	Open Elective III	2	-	-	2	2	ISE1	10		40	
									MSE	30			
									ISE2	10			
									ESE	50	20		
6	PC	UCVPC0731	Quantity Surveying and Valuation Laboratory	-	-	2	2	1	ISE	25	10	20	
									ESE(POE)	25			
7	PC	UCVPC0732	Reinforced Concrete Structures Design Laboratory	-	-	2	2	1	ISE	25	10	20	
									ESE(OE)	25			
8	RM	UCVIL0771	Major Project I	-	-	8	8	4	ISE	50	20	40	
									ESE (OE)	50			
9	MM	U**MM****	Multi Disciplinary Minor V*	3	-	-	3	3	ESE	100	40		
	,		Total:					29	23		800		

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SEMESTER VIII												
Sr. No	Category	Course Code	Course Name	L	T	P	Hrs. / Week	Credits	Evaluation Scheme			
									Component	Marks		
										Max.	Min. for Passing	
1	PEC	UCVPE081*	Program Elective – IV	3	-	-	3	3	ISE1	10		40
									MSE	30		
									ISE2	10		
									ESE	50	20	
2	PEC	UCVPE081*	Program Elective - V	3	-	-	3	3	ISE1	10		40
									MSE	30		
									ISE2	10		
									ESE	50	20	
3	RP	UCVIL0871	Major Project II	-	-	8	8	4	ISE	50		40
									ESE(OE)	50		
4	OJT	UCVIL0872	Internship	-	-	12	12	6	ISE 1	75	30	
									ISE 2	75	30	
5	CC	UCVCC0831	Co-curricular Activities IV	-	-	2	2	1	ISE	50	20	
			Total:				28	17		500		

DEPARTMENT OF CIVIL ENGINEERING

Credit Distribution:



Pie chart showing the distribution of credits

ENTREPRENEURSHIP /ECONOMICS/ MANAGEMENT COURSES							
Sr. No.	Course Code	Course Name	L	T	P	Hrs. / Week	Credits
1	UCVEM0306	Engineering Economics	2	-	-	2	2
2	UCVEM0504	Construction Project Management	2	-	-	2	2
Total:						4	4

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PROGRAM CORE							
Sr. No.	Course Code	Course Name	L	T	P	Hrs. / Week	Credits
1	UCVPC0301	Differential Equations and Statistical Techniques	3	1	-	4	4
2	UCVPC0302	Mechanics of Solids	3	-	-	3	3
3	UCVPC0303	Modern Surveying	3	-	-	3	3
4	UCVPC0304	Building Construction and Services	3	-	-	3	3
5	UCVPC0331	Modern Surveying Laboratory	-	-	2	2	1
6	UCVPC0332	Mechanics of Solids Laboratory	-	-	2	2	1
7	UCVPC0333	Computer Aided Drafting Laboratory	-	-	2	2	1
8	UCVPC0401	Concrete Technology	2		-	2	2
9	UCVPC0402	Structural Analysis	3		-	3	3
10	UCVPC0403	Water Treatment & Supply Systems	3		-	3	3
11	UCVPC0404	Building Planning & Design	2		-	2	2
12	UCVPC0405	Engineering Hydraulics	3		-	3	3
13	UCVPC0431	Engineering Hydraulics Laboratory	-		2	2	1
14	UCVPC0433	Concrete Technology Laboratory	-		2	2	1
15	UCVPC0501	Design of Steel Structures	3	-	-	3	3
16	UCVPC0502	Theory of Structures	2	-	-	2	2
17	UCVPC0503	Geotechnical Engineering	3	-	-	3	3
18	UCVPC0531	Geotechnical Engineering Laboratory	-	-	2	2	1
19	UCVPC0532	Water Quality Monitoring Laboratory	-	-	2	2	1
20	UCVPC0601	Design of Reinforced Concrete Structures	3	-	-	3	3

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PROGRAM CORE							
Sr. No.	Course Code	Course Name	L	T	P	Hrs. / Week	Credits
21	UCVPC0602	Engineering Hydrology	2	-	-	2	2
22	UCVPC0603	Transportation Engineering	3	-	-	3	3
23	UCVPC0632	Design of Steel Structure Laboratory	-	-	2	2	1
24	UCVPC0633	Transportation Engineering Laboratory	-	-	2	2	1
25	UCVPC0634	Wastewater Monitoring Laboratory	-	-	2	2	1
26	UCVPC0701	Quantity Surveying and Valuation	3	-	-	3	3
27	UCVPC0702	Earthquake Engineering & Structural Dynamics	3	-	-	3	3
28	UCVPC0703	Water Resource Engineering	3	-	-	3	3
29	UCVPC0731	Quantity Surveying and Valuation Laboratory	-	-	2	2	1
30	UCVPC0732	Reinforced Concrete Structures Design Laboratory	-	-	2	2	1
Total:						75	63

Program Electives:

PROGRAM ELECTIVE I							
Sr. No.	Course Code	Course Name	L	T	P	Hrs. / Week	Credits
1	UCVPE0511	Municipal Wastewater Analysis and Treatment – (PE)	3	-	-	3	3
2	UCVPE0512	Industrial Wastewater Treatment – (PE)	3	-	-	3	3
3	UCVPE0513	Solid and Hazardous Waste Management – (PE)	3	-	-	3	3
4	UCVPE0514	Open Channel and River Hydraulics	3	-	-	3	3
Total:						3	3

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PROGRAM ELECTIVE II

Sr. No.	Course Code	Course Name	L	T	P	Hrs. / Week	Credits
1	UCVPE0611	Ground Improvement & Earth Pressure Theories – (PE)	3	-	-	3	3
2	UCVPE0612	Geotechnical Foundation Engineering – (PE)	3	-	-	3	3
3	UCVPE0613	Soil Investigation and Foundation Design – (PE)	3	-	-	3	3
Total:						3	3

PROGRAM ELECTIVE III

Sr. No.	Course Code	Course Name	L	T	P	Hrs. / Week	Credits
1	UCVPE0711	Transportation And Smart City Planning – (PE)	3	-	-	3	3
2	UCVPE0712	Structural Health Monitoring and Retrofitting – (PE)	3	-	-	3	3
3	UCVPE0713	Human Resource Management – (PE)	3	-	-	3	3
4	UCVPE0714	GEODESY, Remote Sensing & GNSS – (PE)	3	-	-	3	3
Total:						3	3

PROGRAM ELECTIVE IV

Sr. No.	Course Code	Course Name	L	T	P	Hrs. / Week	Credits
1	UCVPE0811	Advanced Structural Analysis – (PE)	3	-	-	3	3
2	UCVPE0812	Traffic Engineering and Management – (PE)	3	-	-	3	3
3	UCVPE0813	Finite Elements Methods– (PE)	3	-	-	3	3
4	UCVPE0814	Legal Aspects in Construction Engineering – (PE)	3	-	-	3	3
5	UCVPE0815	Soil Conservation and Watershed Management – (PE)	3	-	-	3	3

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PROGRAM ELECTIVE IV

Sr. No.	Course Code	Course Name	L	T	P	Hrs. / Week	Credits
		Total:				3	3

PROGRAM ELECTIVE V

Sr. No.	Course Code	Course Name	L	T	P	Hrs. / Week	Credits
1	UCVPE0816	Prestressed Concrete Design – (PE)	3	-	-	3	3
2	UCVPE0817	Structural Design and Drawing of Foundation and Retaining Wall – (PE)	3	-	-	3	3
3	UCVPE0818	Design of Bridges – (PE)	3	-	-	3	3
4	UCVPE0819	Advanced Design of Concrete Structures – (PE)	3	-	-	3	3
		Total:				3	3

Open Elective Courses:

OPEN ELECTIVE I

Sr. No.	Course Code	Course Name	L	T	P	Hrs. / Week	Credits
1	UCVOE052*	Green Technology/Building	3	-	-	3	3
		Total:				3	3

OPEN ELECTIVE II

Sr. No.	Course Code	Course Name	L	T	P	Hrs. / Week	Credits
1	UCVOE062*	Appropriate Technology	3	-	-	3	3
		Total:				3	3

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VOCATIONAL AND SKILL ENHANCEMENT COURSE

Sr. No.	Course Code	Course Name	L	T	P	Hrs. / Week	Credits
1	UCVVS0432	Computer Aided Design And Drafting Laboratory	-	-	2	2	1
2	UCVVS0533	Simulation and Design Laboratory	-	-	2	2	1
Total:						4	2

VALUE EDUCATION COURSE

Sr. No.	Course Code	Course Name	L	T	P	Hrs. / Week	Credits
1	UCVVE0305	Environmental Studies	2	-	-	2	2
2	UCVVE0406	Constitution of India	2	-	-	2	2
Total:						4	4

RESEARCH METHODOLOGY (PROJECT)

Sr. No.	Course Code	Course Name	L	T	P	Hrs. / Week	Credits
1	UCVIL0771	Major Project I	-	-	8	8	4
Total:						8	4

COMMUNITY ENGINEERING PROJECT/FIELD PROJECT (PBL/SEMINAR/Mini PROJECT)

Sr. No.	Course Code	Course Name	L	T	P	Hrs. / Week	Credits
1	UCVIL0371	Innovative Practices and Learning I Laboratory	-	-	2	2	1
2	UCVIL0471	Innovative Practices and Learning II Laboratory	-	-	2	2	1
3	UCVIL0571	Community Field Project	-	-	2	2	1
4	UCVIL0671	Mini Project	-	-	2	2	1

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COMMUNITY ENGINEERING PROJECT/FIELD PROJECT (PBL/SEMINAR/MINI PROJECT)

Sr. No.	Course Code	Course Name	L	T	P	Hrs. / Week	Credits
		Total:				8	4

PROJECT

Sr. No.	Course Code	Course Name	L	T	P	Hrs. / Week	Credits
1	UCVIL0871	Major Project II	-	-	8	8	4
		Total:				8	4

INTERNSHIP/ON JOB TRAINING

Sr. No.	Course Code	Course Name	L	T	P	Hrs. / Week	Credits
1	UCVIL0872	Internship / On job Training	-	-	12	12	6
		Total:				12	6

CO CURRICULAR COURSES

Sr. No.	Course Code	Course Name	L	T	P	Hrs. / Week	Credits
1	UCVCC0434	Co-curricular Activities I	-	-	2	2	1
2	UCVCC0635	Co-curricular Activities II	-	-	2	2	1
3	UCVCC0831	Co-curricular Activities III	-	-	2	2	1
		Total:				6	3

ABILITY ENHANCEMENT COURSE

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Sr. No.	Course Code	Course Name	L	T	P	Hrs. / Week	Credits
1	UCVAE0631	Business Communication and Value Science	-	-	2	2	1
Total:						2	1

MULTI DISCIPLINARY MINOR (PROJECT AUTOMATION)

Sr. No.	Course Code	Course Name	L	T	P	Hrs. / Week	Credits
1	UCVMM0341	Basics of Projects and Automation	2	-	-	2	2
2	UCVMM0441	Instrumentation and Data Analytics	3	-	-	3	3
3	UCVMM0541	Applications of AI	3	-	-	3	3
4	UCVMM0641	Digital Twin and Asset Management	3	-	-	3	3
5	UCVMM0741	Automation in Project Implementation	3	-	-	3	3
Total:						14	14

MULTIDISCIPLINARY MINOR (DATA SCIENCE)

Sr. No.	Course Code	Course Name	L	T	P	Hrs. / Week	Credits
1	UCEMM0341	Introduction to Data Science	2	-	-	2	2
2	UCEMM0441	Statistics for Data Science	3	-	-	3	3
3	UCEMM0541	Python for Data Science	3	-	-	3	3
4	UCEMM0641	Data Analytics	3	-	-	3	3
5	UCEMM0741	Mathematical Modeling & Simulation	3	-	-	3	3
Total:						14	14

MULTIDISCIPLINARY MINOR (LEADERSHIP AND MANAGEMENT)

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Sr. No.	Course Code	Course Name	L	T	P	Hrs. / Week	Credits
1	UCEMM0342	Introduction to Management	2	-	-	2	2
2	UCEMM0442	Introduction to Human Resource Management	3	-	-	3	3
3	UCEMM0542	Introduction to Marketing Management	3	-	-	3	3
4	UCEMM0642	HR Practices in the Organization	3	-	-	3	3
5	UCEMM0742	Introduction to Financial Management	3	-	-	3	3
Total:						14	14

EMERGING SPECIALIZATION MINOR (LEAN TECHNOLOGY)

Sr. No.	Course Code	Course Name	L	T	P	Hrs. / Week	Credits
1	UCVMN0341	Basics of construction project & management	3	1	-	4	4
2	UCVMN0441	Lean Concept and Management approach	3	1	-	4	4
3	UCVMN0541	Productivity measurement System	3	1	-	4	4
4	UCVMN0641	Lean Tools and Practices	3	1	-	4	4
5	UCVMN0741	Lean and Green Project Management	2	-	-	2	2
Total:						18	18

HONORS (STRATEGIC CIVIL INFRASTRUCTURE)

Sr. No.	Course Code	Course Name	L	T	P	Hrs. / Week	Credits
1	UCVHN0351	Traffic Engineering and Management	3	1	-	4	4
2	UCVHN0451	Pavement Analysis, Evaluation and Design	3	1	-	4	4
3	UCVHN0551	Urban Transportation Systems Planning	3	1	-	4	4

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HONORS (STRATEGIC CIVIL INFRASTRUCTURE)

Sr. No.	Course Code	Course Name	L	T	P	Hrs. / Week	Credits
4	UCVHN0651	Aviation Infrastructure and Facility Planning	3	1	-	4	4
5	UCVHN0751	Mini Project	-	-	4	4	2
Total:						20	18

EXIT COURSES (AFTER S. Y. B. TECH)

Sr. No.	Course Code	Course Name	L	T	P	Hrs. / Week	Credits
1	UCVEX0491	Building Quantity Surveying Training	-	-	4	4	2
2	UCVEX0492	Fundamentals of Transportation Engineering	3	-	-	3	3
3	UCVEX0493	Fundamentals of Structural Design & Detailing	3	-	-	3	3
Total:						10	8

EXIT COURSES (AFTER T. Y. B. TECH)

Sr. No.	Course Code	Course Name	L	T	P	Hrs. / Week	Credits
1	UCVEX0691	Prefabricated Structures	3	-	-	3	3
2	UCVEX0692	Construction Safety Management	3	-	-	3	3
3	UCVEX0693	Structural Design Training	-	-	4	4	2
Total:						10	8