



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

Structure for
B. Tech in
Civil and Environmental Engineering

Department of Civil and Environmental Engineering

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

**Kolhapur Institute of Technology's
College of Engineering (Autonomous), Kolhapur
DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING**

VISION AND MISSION OF INSTITUTE

VISION:

- To be the Centre of Excellence in technical education and preferred choice of Faculty, Students, Industry and Society.

MISSION:

- To empower the faculty, staff and aspiring Engineers with essential technical knowledge and skills.
- To develop competence towards serving the ever changing needs of industry and society.
- To inculcate social and ethical values amongst the Students and Employees.
- To strengthen collaborative Research and Consulting Environment with industry and other institutions.

VISION AND MISSION OF DEPARTMENT

VISION

- To develop as a center of excellence in Civil and Environmental Engineering Education.

MISSION

- To impart essential technical knowledge, skills and Environmental ethics.
- To develop professional capabilities to meet changing societal and industrial needs.
- To build up base for Research and Consultancy activities.

PROGRAM EDUCATION OBJECTIVES (PEOs)

PEO 1: Solve Civil and Environmental Engineering problems and pursue higher studies using solid foundation in mathematics, science and technology.

PEO2: Design, execute and operate various Civil and Environmental Systems in related fields through participative education.

PEO3: Develop skills to communicate effectively and work in a team in multidisciplinary areas.

PEO4: Respond to the challenges of issues of Civil and Environmental Engineering through research and development.

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PROGRAM OUTCOMES (POs)

Civil and Environmental Engineering Graduates will be able to:

1. Apply the knowledge of mathematics, Science and Engineering fundamentals for solution of problems of Civil and Environmental Engineering.
2. Identify, formulate, review research literature and analyze Civil and Environmental Engineering problems using fundamentals of mathematics, sciences and engineering.
3. Develop solutions for Civil and Environmental Engineering problems and design system components and processes to meet the specified needs with appropriate consideration for the public health and safety.
4. Make use of their knowledge to interpret the data by experimental analysis to provide valid conclusions.
5. Select and apply various engineering and IT tools and models to solve Civil and Environmental Engineering problems.
6. Assess societal, health, safety and legal issues by applying Civil and Environmental Engineering knowledge.
7. Assess the impact of Civil and Environmental Engineering solutions in Societal and Environmental context for Sustainable Development.
8. Practice ethical principles to fulfill responsibilities as Civil and Environmental Engineer.
9. Function effectively as an individual, and as member or leader in multidisciplinary areas.
10. Discuss effectively issues of Civil and Environmental Engineering and solutions through written and oral presentations to engineering communities and society.
11. Demonstrate knowledge and understanding of the engineering and management principles to manage Civil and Environmental Engineering projects.
12. Practice the need of lifelong learning through updating technical knowledge in the context of technological change.

PROGRAM SPECIFIC OUTCOMES (PSOs)

1. Identify and analyze the pollution related problems generated due to urbanization and industrialization.
2. Interpret the data using various tools and techniques to provide effective and applicable solutions.

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MAPPING OF PROGRAM OUTCOMES TO PROGRAM EDUCATION OBJECTIVES

PEO	PO												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
PEO 1	3	1	2			1		1			1	2	1	3
PEO 2	2	1	3	2	1	2	1	1					2	3
PEO 3									2	3	2			2
PEO 4	2	3	2				2					2	1	3

Kolhapur Institute of Technology's
College of Engineering (Autonomous), Kolhapur
Teaching and Evaluation scheme for

Second Year B. Tech. Program in Civil and Environmental Engineering Semester-III

Course Code	Course Name	Curriculum Component	Hours/Week				Evaluation Scheme			
			L	T	P	Credits	Component	Marks		
								Max	Min for passing	
UCEE0301	Applied Mathematics	BS	3	1	-	4	ISE I	10		40
							MSE	30		
							ISE II	10		
							ESE	50	20	
UCEE0302	Surveying	PC	3	-	-	3	ISE I	10		40
							MSE	30		
							ISE II	10		
							ESE	50	20	
UCEE0303	Fluid Mechanics	PC	3	-	-	3	ISE I	10		40
							MSE	30		
							ISE II	10		
							ESE	50	20	
UCEE0304	Solid Mechanics	PC	4	-	-	4	ISE I	10		40
							MSE	30		
							ISE II	10		
							ESE	50	20	
UCEE0305	Building Materials and Concrete Technology	PC	3	-	-	3	ISE I	10		40
							MSE	30		
							ISE II	10		
							ESE	50	20	
UCEE0361	Audit Course I: Environmental Studies	BS	2	-	-	-	ESE	100	40	40
UCEE0331	Surveying Laboratory	PC	-	-	2	1	ISE	50	20	
							ESE(OE)	50	20	
UCEE0332	Fluid Mechanics Laboratory	PC	-	-	2	1	ISE	25	10	
							ESE(OE)	25	10	
UCEE0333	Strength of Materials Laboratory	PC	-	-	2	1	ISE	50	20	
UCEE0334	Concrete Technology Laboratory	PC	-	-	2	1	ISE	25	10	
							ESE(OE)	25	10	
UCEE0335	Building Drawing Laboratory	PC	-	-	2	1	ISE	50	20	
			18	1	10	22	500 + 300 = 800 + Audit Course			

Total Credits - 22, Total Contact hours – 29

Kolhapur Institute of Technology's
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Teaching and Evaluation scheme for

Second Year B. Tech. Program in Civil and Environmental Engineering Semester - IV

Course Code	Course Name	Curriculum Component	Hours/Week				Evaluation Scheme			
			L	T	P	Credits	Component	Marks		
								Max	Min for passing	
UCEE0401	Environmental Chemistry and Microbiology	BS	3	-	-	3	ISE I	10	20	40
							MSE	30		
							ISE II	10		
							ESE	50		
UCEE0402	Hydrology and Water Resources Engineering	PC	3	-	-	3	ISE I	10	20	40
							MSE	30		
							ISE II	10		
							ESE	50		
UCEE0403	Structural Analysis	PC	3	-	-	3	ISE I	10	20	40
							MSE	30		
							ISE II	10		
							ESE*	50		
UCEE0404	Hydraulics	PC	3	-	-	3	ISE I	10	20	40
							MSE	30		
							ISE II	10		
							ESE	50		
UCEE04**	Professional Elective I	PE	3	1	-	4	ISE I	10	20	40
							MSE	30		
							ISE II	10		
							ESE	50		
UCEE0462	Audit Course II: Surveying and Geospatial Technology	PC	2	-	-	-	ESE	100	40	40
UCEE0431	Environmental Chemistry and Microbiology Laboratory	BS	-	-	2	1	ISE	25	10	
							ESE (OE)	25	10	
UCEE0432	Building Planning and Design Laboratory	PC	-	-	4	2	ISE	50	20	
							ESE (OE)	50	20	
UCEE0433	Open Channel Hydraulics Laboratory	PC	-	-	2	1	ISE	25	10	
							ESE (OE)	25	10	
UCEE0434	Spreadsheets Laboratory	PC	-	-	2	1	ISE	50	20	
UCEE0435	Geospatial Laboratory	PC	-	-	2	1	ISE	50	20	
			17	1	12	22	500 + 300 = 800 + Audit Course			

Total Credits - 22, Total Contact hours – 30

Professional Elective – I	
UCEE0421	Ecology and Environmental Sanitation
UCEE0422	Green Buildings
UCEE0423	Construction Practices

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Teaching and Evaluation scheme for

Third Year B. Tech. Program in Civil and Environmental Engineering Semester - V

Course Code	Course Name	Curriculum Component	Hrs/Week				Evaluation Scheme			
			L	T	P	Credits	Component	Marks		
								Max	Min for passing	
UCEE0501	Water Supply Engineering	PC	3	-	-	3	ISE I	10	20	40
							MSE	30		
							ISE II	10		
							ESE	50		
UCEE0502	Highway and Traffic Engineering	PC	3	-	-	3	ISE I	10	20	40
							MSE	30		
							ISE II	10		
							ESE	50		
UCEE0503	Solid and Hazardous Waste Management	PC	3	-	-	3	ISE I	10	20	40
							MSE	30		
							ISE II	10		
							ESE	50		
UCEE0504	Geotechnical Engineering	PC	3	1	-	4	ISE I	10	20	40
							MSE	30		
							ISE II	10		
							ESE	50		
UCEE05**	Professional Elective II	PE	3	1	-	4	ISE I	10	20	40
							MSE	30		
							ISE II	10		
							ESE	50		
UCEE0563	Audit Course III: Engineering Management and Economics	HS	2	-	-	-	ESE	100	40	40
UCEE0531	Water Treatment Laboratory	PC	-	-	2	1	ISE	50	20	
							ESE (OE)	50	20	
UCEE0532	Transportation Engineering Laboratory	PC	-	-	2	1	ISE	25	10	
							ESE (OE)	25	10	
UCEE0533	Geotechnical Engineering Laboratory	PC	-	-	2	1	ISE	25	10	
							ESE (OE)	25	10	
UCEE0534	Solid Waste Analysis Laboratory	PC	-	-	2	1	ISE	50	20	
UCEE0541	Mini Project	MC	-	-	2	1	ISE	50	20	
			17	2	10	22	500 + 300 = 800 + Audit Course			

Total Credits - 22, Total Contact hours – 29

Professional Elective – II	
UCEE0521	Renewable Energy Resources
UCEE0522	Irrigation and Hydraulic Structures
UCEE0523	Noise Pollution and Control
UCEE0524	Design of Steel Structures

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Teaching and Evaluation scheme for

Third Year B. Tech. Program in Civil and Environmental Engineering Semester - VI

Course Code	Course Name	Curriculum Component	Teaching Scheme				Evaluation Scheme			
			L	T	P	Credits	Components	Marks		
								Max	Min for passing	
UCEE0601	Wastewater Engineering	PC	3	-	-	3	ISE-I	10		40
							ISE-II	10		
							MSE	30		
							ESE	50	20	
UCEE0602	Air Pollution and Control	PC	3	-	-	3	ISE-I	10		40
							ISE-II	10		
							MSE	30		
							ESE	50	20	
UCEE0603	Design of Concrete Structures	PC	4	-	-	4	ISE-I	10		40
							ISE-II	10		
							MSE	30		
							ESE	50	20	
UCEE06**	Professional Elective III	PE	3	1	-	4	ISE-I	10		40
							ISE-II	10		
							MSE	30		
							ESE	50	20	
UOEL06**	Open Elective I	OE	3	-	-	3	ISE-I	10		40
							ISE-II	10		
							MSE	30		
							ESE	50	20	
UCEE0664	Audit Course IV: Transportation Infrastructure	PC	2	-	-	-	ESE	100	40	40
UCEE0631	Wastewater Engineering Laboratory	PC	-	-	2	1	ISE	50	20	
							ESE (OE)	50	20	
UCEE0632	Air Pollution and Control Laboratory	PC	-	-	2	1	ISE	25	10	
							ESE (OE)	25	10	
UCEE0633	Design of Concrete Structures Laboratory	PC	-	-	2	1	ISE	50	20	
UCEE0634	Design and Drawing of Environmental Systems	PC	-	-	4	2	ISE	50	20	
							ESE (OE)	50	20	
			18	1	10	22	500 + 300 = 800 + Audit Course			

Total Credits - 22, Total Contact hours - 29

Professional Elective – III		Open Elective I	
UCEE0621	Environmental Geotechnology	UOEL0631	Environmental Laws and Policies
UCEE0622	Optimization Techniques	UOEL0632	Occupational Safety and Health
UCEE0623	Operation and Maintenance of Environmental Facilities	UOEL0633	Water Conservation and Management

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Teaching and Evaluation scheme for

Final Year B. Tech. Program in Civil and Environmental Engineering Semester-VII

Course Code	Course Name	Curriculum Component	Teaching Scheme				Evaluation Scheme			
			L	T	P	Credits	Components	Marks		
								Max	Min for passing	
UCEE0701	Environment, Health and Safety	PC	3	-	-	3	ISE I	10		40
							MSE	30		
							ISE II	10		
							ESE	50	20	
UCEE0702	Advanced Water and Wastewater Treatment	PC	3	1	-	4	ISE I	10		40
							MSE	30		
							ISE II	10		
							ESE	50	20	
UCEE0703	Quantity Surveying and Valuation	PC	3	-	-	3	ISE I	10		40
							MSE	30		
							ISE II	10		
							ESE *	50	20	
UCEE0704	Environmental Impact Assessment and Environmental Legislation	PC	3	-	-	3	ISE I	10		40
							MSE	30		
							ISE II	10		
							ESE	50	20	
UOEL07**	Open Elective II	OE	3	-	-	3	ISE I	10		40
							MSE	30		
							ISE II	10		
							ESE	50	20	
UCEE0765	Audit Course V: Foundation Engineering	PC	2	-	-	-	ESE	100	40	40
UCEE0731	Treatability Studies Laboratory	PC	-	-	2	1	ISE	50	20	
							ESE (OE)	50	20	
UCEE0732	Quantity Surveying and Valuation Laboratory	PC	-	-	2	1	ISE	50	20	
							ESE (OE)	50	20	
UCEE0741	Seminar	MC	-	-	2	1	ISE	50	20	
UCEE0751	Project Phase I	MC	-	-	2	1	ISE	50	20	
			17	1	08	20	500 + 300 = 800 + Audit Course			

Total Credits – 20, Total Contact hours – 26

Sr. No.	Open Elective II
UOEL0731	Disaster Management and Risk Analysis
UOEL0732	Waste Management

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Final Year B. Tech. Program in Civil and Environmental Engineering Semester-VIII

Course Code	Course Name	Curriculum Component	Teaching Scheme				Evaluation Scheme		
			L	T	P	Credits	Components	Marks	
UCEE0852	Internship and Project Phase II	MC	-	-	12	6	ISE I	75	30
							ISE II	75	30
							ESE (OE)	150	60
UCEE08**	Professional Elective IV	PE	3	-	-	3	ISE-I	10	20
							ISE-II	10	
							MSE	30	
							ESE	50	20
UCEE08**	Professional Elective V	PE	3	-	-	3	ISE-I	10	20
							ISE-II	10	
							MSE	30	
							ESE	50	20
			6	-	12	12	300 + 100 + 100 = 500		

Total Credits - 12, Total Contact hours – 18

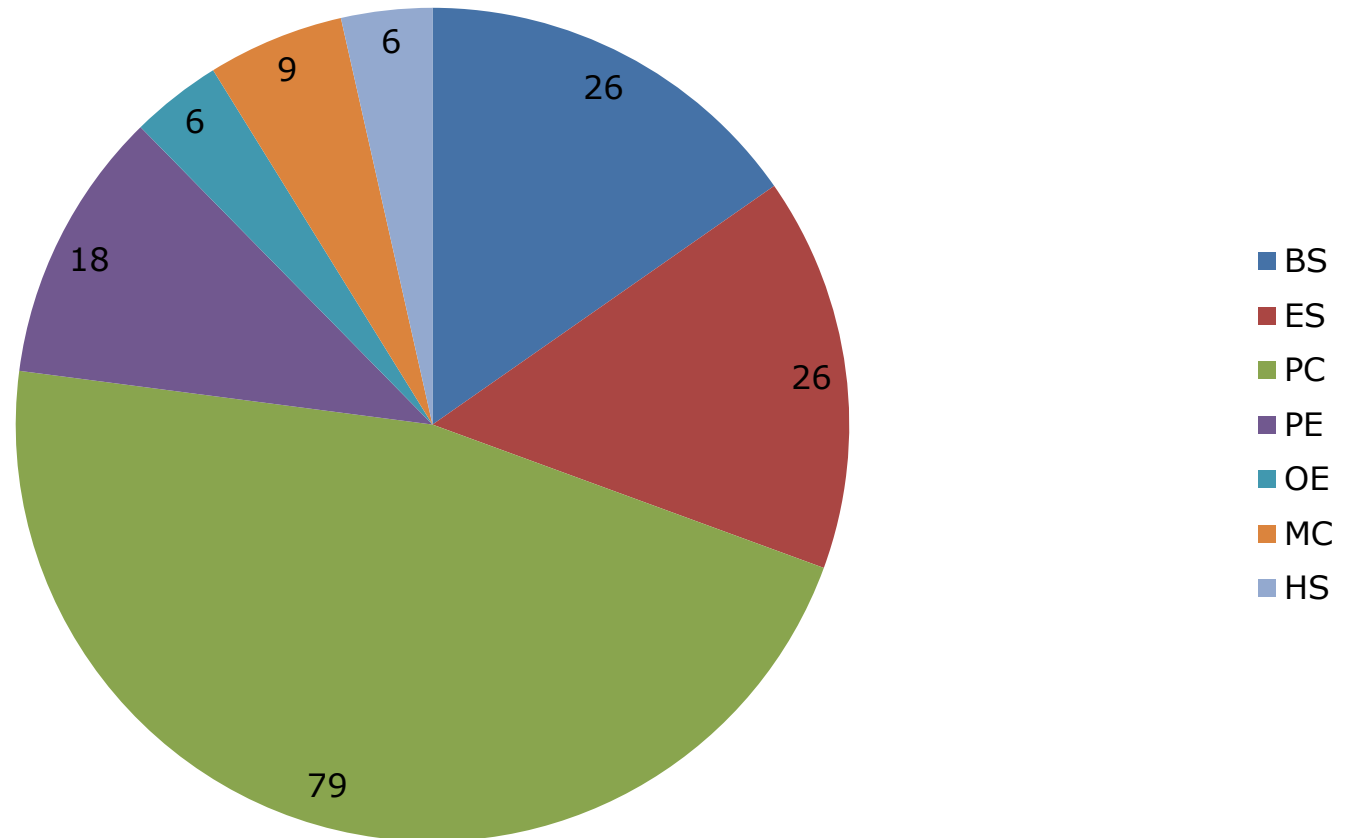
Professional Elective – IV		Professional Elective – V	
UCEE0821	Industrial Wastewater Treatment	UCEE0824	Environmental Management System
UCEE0822	Project Management	UCEE0825	Advanced Construction Technology
UCEE0823	Urban Infrastructure and Smart Cities	UCEE0826	Environmental Sustainability

**Kolhapur Institute of Technology's
College of Engineering (Autonomous), Kolhapur
B. Tech. Program in Civil and Environmental Engineering**

Total Credits Distribution from F.Y.B.Tech to Final Year B.Tech in Civil and Environmental Engineering

Component	F.Y.B.Tech		S.Y.B.Tech		T.Y.B.Tech		Final Year B.Tech		Total	% age
	Sem I	Sem II	Sem III	Sem IV	Sem V	Sem VI	Sem VII	Sem VIII		
Basic Sciences (BS)	9	9	4	4	-	-	-	-	26	15.29
Engineering Sciences (ES)	13	13	-	-	-	-	-	-	26	15.29
Program Core (PC)	-	-	18	14	17	15	15	-	79	46.47
Professional Elective (PE)	-	-	-	4	4	4	-	6	18	10.59
Open Elective (OE)	-	-	-	-	-	3	3	-	6	3.53
Mandatory Course (MC)	-	-	-	-	1	-	2	6	9	5.29
Humanities (HS)	3	3	-	-	-	-	-	-	6	3.53
Total	25	25	22	22	22	22	20	12	170	100

Total Credits Distribution from F.Y.B.Tech to Final Year B.Tech in Civil and Environmental Engineering



**Total Credits (%) Distribution from F.Y.B.Tech to Final Year
B.Tech in Civil and Environmental Engineering**

