



Department of Civil Engineering

Academic Year: 2020-21, SE Semester I

Program Outcomes (PO)		
PO1: Engineering Knowledge	PO5: Modern Tool Usage	PO9: Individual and team work
PO2: Problem Analysis	PO6: The engineer and Society	PO10: Communication
PO3: Design/Development of solutions	PO7: Environment and Sustainability	PO11: Project Management and Finance
PO4: Conduct Investigations of Complex Problems	PO8: Ethics	PO12: Life-long learning

Program Specific Outcomes (PSO)	
PSO1	Carry out projects in the field of real estate and infrastructural engineering
PSO2	Provide solution for environmental and social issues through sustainable approach
PSO3	Substantiate professionalism through leadership qualities and moral values

Subject: Building Technology and Architectural Planning

Course Outcomes:

On completion of the course, learner will be able to:

1. Identify types of building and basic requirements of building components.
2. Make use of Architectural Principles and Building byelaws for building construction.
3. Plan effectively various types of Residential Building forms according to their utility, functions with reference to National Building Code.
4. Plan effectively various types of Public Buildings according to their utility functions with reference to National Building Code.
5. Make use of Principles of Planning in Town Planning, Different Villages and Safety aspects.
6. Understand different services and safety aspects

CO - PO/PSO Mapping

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	1				2		1						1		
CO2					1							1			
CO3							1						2		
CO4					1						1			1	1
CO5	2	1								1					
CO6							1	2	2	2		2			2



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Subject: Mechanics of Structures

On completion of the course, learner will be able to:

1. Understand concept of stress-strain and determine different types of stress, strain in determinate, indeterminate homogeneous and composite structures.
2. Calculate shear force and bending moment in determinate beams for different loading conditions and illustrate shear force and bending moment diagram.
3. Explain the concept of shear and bending stresses in beams and demonstrate shear and bending stress distribution diagram.
4. Use theory of torsion to determine the stresses in circular shaft and understand concept of Principal stresses and strains.
5. Analyse axially loaded and eccentrically loaded column.
6. Determine the slopes and deflection of determinate beams and trusses.

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CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	1					1	1				1		1
CO2	3	2							1				1		
CO3	3	2						1	1				1		
CO4	3	2	1	1				1	1				1		1
CO5	3	2							1				1		
CO6	3	2	1						1				1		



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Subject: Fluid Mechanics

At the end of the course, the learners will be able to

1. Understand the use of Fluid Properties, concept of Fluid statics, basic equation of Hydrostatics, measurement of fluid pressure, buoyancy & floatation and its application for solving practical problems.
2. Understand the concept of fluid kinematics with reference to Continuity equation and fluid dynamics with reference to Modified Bernoulli's equation and its application to practical problems of fluid flow
3. Understand the concept of Dimensional analysis using Buckingham's π theorem, Similarity & Model Laws and boundary layer theory and apply it for solving practical problems of fluid flow.
4. Understand the concept of laminar and turbulent flow and flow through pipes and its application to determine major and minor losses and analyze pipe network using Hardy Cross method.
5. Understand the concept of open channel flow, uniform flow and depth-Energy relationships in open channel flow and make the use of Chezy's and Manning's formulae for uniform flow computation and design of most economical channel section.
6. Understand the concept of gradually varied flow in open channel and fluid flow around submerged objects, compute GVF profile and calculate drag and lift force on fully submerged body.

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CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	1			1					1			1		1
CO2	2	2			2					1			1		1
CO3	3	3	2	1	3		1			2			1		1
CO4	2	2	2		2					1			1		1
CO5	1	1	1							1			1		2
CO6	1	1	1							1			1		2



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Subject: Geotechnical Engineering

At the end of the course, the learners will be able to

1. Identify and classify the soil based on the index properties and its formation process
2. Explain permeability and seepage analysis of soil by construction of flow net.
3. Illustrate the effect of compaction on soil and understand the basics of stress distribution.
4. Express shear strength of soil and its measurement under various drainage conditions.
5. Evaluate the earth pressure due to backfill on retaining structures by using different theories.
6. Analysis of stability of slopes for different types of soils.

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CO1	2	3	1	3	2	1			2	1			2	1	2
CO2	2	2			1				1	2			1		1
CO3	2	2			1					1			1		
CO4	2	2	1	1	2				1	2			1	1	1
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Subject: Surveying

At the end of the course, the learners will be able to

1. Define and Explain basics of plane surveying and differentiate the instruments used for it.
2. Express proficiency in handling surveying equipment and analyse the surveying data from this equipment.
3. Describe different methods of surveying and find relative positions of points on the surface of earth.
4. Execute curve setting for civil engineering projects such as roads, railways etc.
5. Articulate advancements in surveying such as space-based positioning systems
6. Differentiate map and aerial photographs, also interpret aerial photographs

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CO1	3	1	1	2	1	1	1	2	2	2	1	1	1	1	2
CO2	3	1	1	2	1	1	1	2	2	2	1	1	1	1	2
CO3	3	1	1	2	1	1	1	2	2	2	1	1	2	1	1
CO4	3	1	1	2	1	1	1	2	2	2	1	1	1	2	1
CO5	3	1	1	2	1	1	1	2	2	2	1	1	1	2	2
CO6	3	1	1	2	1	1	1	2	2	2	1	1	1	2	2



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Subject: Concrete Technology

At the end of the course, the learners will be able to

1. Understand chemistry, properties and classification of cement flyash, aggregates and admixtures, and hydration of cement
2. Check the properties of concrete in fresh state.
3. Check the properties of hardened concrete with destructive and nondestructive testing instruments
4. Design concrete mix of desired grade.
5. Get acquainted to concrete handling equipment and different special concrete types.
6. Predict deterioration in concrete and repair it with appropriate methods and techniques.

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CO3	3							1	1	1			1		
CO4	3												1		
CO5	3		3	2		2	1	1	1	1			2		
CO6	3												1		

