AISSMS
COLLEGE OF ENGINEERING
ज्ञानम् सकलजनहिताय
Accredited by NAAC with "A+" Grade

Department of Civil Engineering

2020-21

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: Hydrology and Water Resource Engineering

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

1. Produced civil engineering graduates who are introduced with Hydrological processes and Stream Gauging.
2. Students are introduced with the basics of Run off and Floods and its measurements
3. Students are able to pursue his /her careers in Hydraulic Engineering field with Reservoir Planning
4. Students can be able to knowing the water requirements for crops and Irrigation Methodology.
5. Students have the ability to enhance the knowledge in Water Resources Engineering Field and related software.
6. The students can able to design Water Management and Lift Irrigation Scheme.

Subject: Hydrology and Water Resource Engineering															
CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**	**PSO3**
CO1	2	1			1					1				1	
CO2	2	2			2					1			1		2
CO3	3	3	2	1	3		1			2			1		1
CO4	2	2	2		2					1			2		
CO5	1	1	1							1				1	
CO6	1	1	1							1			1		

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Subject: IECT

At the end of the course, the learners will be able to
1. To know the scope of infrastructure engineering in national and global development.
2. To know about the basics of various components of railway engineering, the types and functions of track, junctions and railway stations
3. Study of construction techniques as dewatering, dredging, slip form and hoists cranes
4. Study of tunnelling methods and various operations required in tunnelling
5. Study about the types and components of docks and harbours
6. Understand concepts of Construction techniques and its practical applications, Earth moving equipments

Subject: Infrastructure Engineering and Construction Techniques															
CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**	**PSO3**
CO1			1										1		
CO2		1	1										1		
CO3		1											1		
CO4			1	1	2								1		
CO5	1		1		2								1		
CO6	1	2	2		2								1		

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Subject: Structural Design I

Course Outcomes:
On completion of the course, learner will be able to:
1. Ability to understand IS code of practice for the design of steel structural elements.
2. Analyze and design axially loaded column & built-up column with lacing and batten system.
3. Analyze and design the eccentrically loaded column and column bases.
4. Ability to analyze and design the flexural member as laterally restrained and unrestrained beams
5. Ability to design the connection between beam to beam , beam to column and Design of welded plate girder
6. Analyze and design roof truss and gantry girder for industrial building

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

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Subject: Structural Analysis II

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

1. Analyse of beams and frames by Slope deflection method
2. Analyse of beams and frames by Moment distribution method
3. Analyse of beams and frames by Flexibility method
4. Analyse of beams and frames by Stiffness method
5. Apply finite difference method for determinate beams and approximate methods for indeterminate
6. Know the basic concept of finite element method

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

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Subject: Fluid Mechanics II

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

1. Apply knowledge to use find Drag and lift Force.
2. Understand the concept of Open channel flow and Depth Energy Relationship in open channel.
3. Analyze fluid problems Using Mannings and Chezy formula.
4. Remembering concept of Impact of Jet, its various conditions and Centrifugal pump, problem on Pump efficiency.
5. Distinguish between various types of Hydropower plant and different types of turbine.
6. Evaluate and able to compute gradual varying flow by different methods.

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

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Subject: Structural Design II

At the end of the course, the learners will be able to
1. Application of different specification of IS -456-200 For design and ability to understand the design Philoshopyprocess
2. Ability to analyze the design of RC Beams and slab based on guidelines given in IS 456.
3. Analysis and design of Two Way slab and staircase for Different Support Condition.
4. To Understand design flexure member for different Support Condition.
5. Application of Re-Distribution of moments ,Bond Length ,Lap Splice and detailing requirements for RC Members.
6. Analyze and design RC Columns and footing

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

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Subject: Project Management and Engineering Economics

At the end of the course, the learners will be able to
1. Understand Concept of project management, project life cycle and organization structure.
2. Explain networking methods and their applications in planning and management.
3. Segregate the construction materials as per their annual usage and understand the concept of equipment management.
4. Analyse Project Network for time and cost control using concepts of crashing, resource allocation
5. Understand fundamentals of project economics and various laws associated with project management
6. Apply methods of project selection to recommend most economical project.

Subject: Project Management and Engineering Economics															
CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**	**PSO3**
CO1			1				1						1		
CO2	2			1	1		1				2		1		
CO3	1		1	1	1	1	1						1		
CO4	1			2	1		1				2		1		
CO5							1						1		
CO6		2		1			1				1		1		

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Subject: Environmental Engineering I

At the end of the course, the learners will be able to
1. To understand the source, control and effect of air and noise pollution
2. To understand the fundamentals of water treatment units and parts of water supply system.
3. To understands the importance of laboratory analysis for design of Water treatment unit
4. Able to Design of water treatment plant
5. Study of Miscellaneous treatment systems
6. Study of water distribution system and rain water harvesting

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

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Subject: Advanced Surveying

At the end of the course, the learners will be able to
1. Understand the GNSS and triangulation.
2. Demonstrate the knowledge of hydrographic surveying
3. Understand the concepts of remote sensing and GIS to civil engineering problems.
4. Identify the traverse adjustments and understand laws of weights.
5. Apply the aerial photogrammetry concepts to the real life problems.
6. Apply the various surveying concepts for setting out engineering works.

Subject: Advanced Surveying															
CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**	**PSO3**
CO1		1	1				1						1		
CO2	1			1	1		1				1		1		
CO3	1		1	1	1		1						1		
CO4	1	1		1	1		1				1		1		
CO5							1						1		
CO6		1		1			1				1		1		

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Subject: Foundation Engineering

At the end of the course, the learners will be able to
1. Analyze the need and methods of soil exploration and Ability to relate the field test and soil investigation.
2. Ability to understand the concepts of bearing capacity analysis
3. Develop an understanding to the settlement of footings in soils and consolidation process
4. Compute the load carrying capacity of individual pile and pile groups
5. To understand the techniques of cofferdams and foundation in BC soil
6. To know concepts of geosynthetics material in soil structure and earhquake geotechniques

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