

B.E. 5th Sem

Course: Design of Reinforced & Prestressed Concrete Structures Course Code: (5CE01)

At the end of Design of Reinforced & Prestressed Concrete Structures course the student will be able to:

CO No.	Course Outcome	Level of Learning (as per Bloom's Taxonomy)
1	Analyse and design the rectangular section.	L5
2	Analyse and design of slab.	L5
3	Analyse and design of staircase and retaining wall	L5
4	Analyse and design of column and footing.	L5
5	Design grid slab and provide ductile detailing.	L5
6	Explain the general behaviour of PC sections under external load.	L2

Course: Surveying & Geomatics

Course Code: (5CE02)

At the end of Surveying & Geomatics course the student will be able to:

CO No.	Course Outcome	Level of Learning (as per Bloom's Taxonomy)
1	Classify the use of different types of curves and their field implications.	L2
2	Discuss the triangulation adjustment	L2
3	Discuss the hydrographic survey.	L2
4	Analyse spatial data base for warehousing and mining.	L3
5	Discuss the surveying with advanced instruments like remote sensing, PS and GIS.	L2
6	Explain the EIA and transportation Planning.	L2

Course: Numerical Methods and Computer Programming **Course Code: (5CE03)**

At the end of Numerical Methods and Computer Programming course the student will be able to:

CO No.	Course Outcome	Level of Learning (as per Bloom's Taxonomy)
1	Interpret the data with a spreadsheet for solving civil engineering problems.	L3
2	Apply knowledge to analyse, solve, design and code numerical method problem using C language.	L3
3	Apply knowledge to analyse, solve, design and code civil engineering problems using C language	L3
4	Solve the matrix operations and Runge Kutta methods.	L3
5	Solve Quadratic Equation and numerical Integral.	L3
6	Analyses, solve and design civil engineering problem by using computer programming	L4

Course: Watershed Engineering and Management **Course Code: (5CE04)**

At the end of Watershed Engineering and Management course the student will be able to:

CO No.	Course Outcome	Level of Learning (as per Bloom's Taxonomy)
1	Explain the hydrology and hydrological data.	L2
2	Analyse the hydrological methods for runoff.	L4
3	Calculate the groundwater hydrological problems.	L4
4	Discuss the concept of hydrology of groundwater	L2
5	Discuss the watershed management.	L2
6	Discuss the concept of stormwater management.	L2

Laboratory Outcome

Course: Design of RCC & Prestressed Concrete Structures Lab Course Code: (5CE06)

At the end of Design of Reinforced & Prestressed Concrete Structures Lab the student will be able to:

LO No.	Laboratory Outcome	Level of Learning (as per Bloom's Taxonomy)
1	Design of continuous simply supported slab.	L5
2	Design of Dog-legged staircase	L5
3	Locate theoretical knowledge into practical.	L3

Course: Surveying and Geomatics Lab

Course Code: (5CE07)

At the end of Surveying and Geomatics Lab the student will be able to:

LO No.	Laboratory Outcome	Level of Learning (as per Bloom's Taxonomy)
1	Demonstrate the tests, measure the length of the chord, measure the offset from the tangent, and measure the offset from the created chord.	L3
2	Demonstrate the triangulation via satellite station tests for ranging circular curves using Rankin's approach. & Baseline assessment under the triangulation framework.	L3
3	Find horizontal distance and difference in elevation between two points by using Total station & plot a layout using Total station.	L2

Numerical Methods & Computer Programming- Lab**Course code: (5CE08)**

At the end of Numerical Methods & Computer Programming Lab the student will be able to:

LO No.	Laboratory Outcome	Level of Learning (as per Bloom's Taxonomy)
1	Solve basic mathematical problems using the C programming language.	L3
2	Formulate and solve Civil Engineering problems using the C programming language.	L3
3	Solve Civil Engineering problems using spreadsheet software.	L3

Course: Watershed Engineering and Management- Lab. Course Code: (5CE09)

At the end of Watershed Engineering and Management course the student will be able to:

LO No.	Laboratory Outcome	Level of Learning (as per Bloom's Taxonomy)
1	Discuss of watershed management technologies, Watershed planning and development & preparation of watershed map.	L2
2	Analysis of hydrologic data for planning of watershed development, Water budgeting of watersheds & Grid survey of watershed area.	L2
3	Discuss about Aquifer, infiltration galleries, unit hydrograph & storm hydrograph including types, working & design.	L2

B.E. 6th Sem

Course: Design of Steel Structure

Course Code: (6CE01)

At the end of Design of Steel Structure course, the student will be able to:

CO No.	Course Outcome	Level of Learning (as per Bloom's Taxonomy)
1	Describe steel structures and its components	L2
2	Classify methods of design of steel structure.	L2
3	Apply structural steel fasteners like welding and bolting	L3
4	Design method of tension & compression members.	L4
5	Design method of beams, Column, Base Plate.	L4
6	Design load on a typical steel roof truss.	L4

Course: Environmental Engineering – I

Course Code: (6CE02)

At the end of Environmental Engineering – I course the student will be able to:

CO No.	Course Outcome	Level of Learning (as per Bloom's Taxonomy)
1	Discuss sources and its demand of water	L2
2	Differentiate the basic characteristics of water and its determination.	L4
3	Design of sedimentation tank.	L5
4	Explain the water filtration process.	L2
5	Categorize different methods of water disinfection.	L4
6	Use of different distribution systems as per actual field condition.	L3

Course: Fluid Mechanics**Course Code: (6CE03)**

At the end of Fluid Mechanics course, the student will be able to:

CO No.	Course Outcome	Level of Learning (as per Bloom's Taxonomy)
1	Describe basic properties of fluid flow.	L2
2	Apply the knowledge to fluid flow problems.	L3
3	Analyse the type of flow by using the basics of mathematical principle.	L4
4	Solve and modeling the pipe flow problems.	L3
5	Analyse Dimensional and model analysis and its application	L4
6	Classify different types of flow, energy and momentum principle.	L2

Course: Advanced Construction Materials**Course Code: (6CE04)**

At the end of Advanced Construction Materials course, the student will be able to:

CO No.	Course Outcome	Level of Learning (as per Bloom's Taxonomy)
1	Describe a special type of concrete and supplementary cementations materials.	L2
2	Use various types of metals and new alloy steels.	L3
3	Choose different thermal and Sound insulating materials	L3
4	Explain types of construction chemicals and wastes.	L2
5	recognize types of shoring and formwork materials.	L2
6	Explain the elementary concept of smart materials	L2

Laboratory Outcome

Course: Design of Steel Structure lab

Course Code: (6CE06)

At the end of Design of Steel Structure lab Practical's the Student will be able to:

LO No.	Lab. Outcome	Level of Learning (as per Bloom's Taxonomy)
1	Design the steel industrial shed.	L2
2	Design the steel column base.	L2
3	Prepare report on industrial site visit.	L3

Course: Environmental Engineering – I

Course Code: (6CE07)

At the end of Environmental Engineering–I lab Practical's the student will be able to:

LO No.	Lab. Outcome	Level of Learning (as per Bloom's Taxonomy)
1	Perform the experiments on water sample to determine the turbidity, electrical conductivity, pH, hardness, acidity, and alkalinity.	L2
2	Perform the experiments on water sample to analyze dissolved, suspended, total, volatile & fixed solids.	L2
3	Perform the experiments on water sample to determine the iron, manganese, residual chlorine contents & total bacteria count.	L2

Course: Fluid Mechanics-I**Course Code: (6CE08)**

At the end of Fluid Mechanics lab Practical's the student will be able to:

LO No.	Lab. Outcome	Level of Learning (as per Bloom's Taxonomy)
1	Demonstrate practical understanding of various equations of Bernoulli.	L3
2	Calculation of coefficient of discharge for various instrumental setups.	L4
3	Calculation of meta centric height, chezys's constant and coefficient of friction for GI pipes	L4

Course: Minor Project**Course Code: (6CE09)**

At the end of Minor Project Practical's the student will be able to:

LO No.	Lab. Outcome	Level of Learning (as per Bloom's Taxonomy)
1	Demonstrate detailed survey in seven days camp.	L3
2	Analyse the Data and prepare design.	L4