

**Government College of Engineering, Salem - 11**  
**Department of Civil Engineering**  
**COs - POs and PSO Mapping**  
**Course Articulation Matrix – 22 Regulation**

<b>Semester - I</b>																
<b>22MA101-Matrices, Calculus and Ordinary Differential Equation</b>																
<b>Course Outcomes</b>		<b>Program Outcomes</b>												<b>Program Specific Outcomes</b>		
		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>1</b>	<b>2</b>	<b>3</b>
1	Learn the fundamental knowledge of Matrix theory.	3	2	-	2	-	-	-	-	-	-	-	-	2	-	-
2	Use both the limit definition and rules of differentiation to differentiable functions.	3	2	-	2	-	-	-	-	-	-	-	-	2	-	-
3	Apply differentiation to solve maxima and minima problems.	3	2	-	2	-	-	-	-	-	-	-	-	2	-	-
4	Apply integration to compute multiple integrals, area, volume, integrals in polar coordinates, in addition to a change of order and change of variables.	3	2	-	2	-	-	-	-	-	-	-	-	2	-	-
5	Apply various techniques in solving differential equations.	3	2	-	2	-	-	-	-	-	-	-	-	2	-	-
<b>Average</b>		3	2	-	2	-	-	-	-	-	-	-	-	2	-	-

Semester - I																
22PH101-Engineering Physics																
Course Outcomes		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Understand the principle to produce ultrasonic waves and acoustics of buildings.	3	2	1	1	1	1	-	-	-	-	-	2	2	1	-
2	Understand the principle and applications of laser & optical fiber.	2	3	1	1	2	1	-	-	-	-	-	2	1	1	-
3	Analyze various modes involved in heat transmission.	3	2	1	1	-	-	-	-	-	-	-	1	2	-	-
4	Gain knowledge in the basic concept of quantum physics.	3	2	1	1	2	-	1	-	-	-	-	1	1	-	-
5	Recognize Crystal structure, crystal defects and crystal growth techniques.	2	2	1	1	2	-	-	-	-	-	-	1	-	1	1
<b>Average</b>		2.6	2.2	1	1	1.7	1	1	-	-	-	-	1.7	1.5	3	1

Semester - I																	
22CY101-Engineering Chemistry																	
Course Outcomes		Program Outcomes												Program Specific Outcomes			
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	
1	Recall the basic principles of spectroscopy and their applications	3	3	-	3	-	-	-	-	-	-	-	-	-	3	1	1
2	Paraphrase the different methods for water analysis & purification and Nanomaterial & its applications	3	2	-	1	-	2	-	-	-	-	-	-	-	3	1	1
3	Apply the various adsorption techniques and basic knowledge of Phase equilibria	3	1	-	1	-	-	-	-	-	-	-	-	-	2	1	1
4	Integrate the principles of electrochemistry, electrochemical cells, corrosion, and its control	2	1	-	1	-	2	-	-	-	-	-	-	-	2	3	2
5	Assess the basis of polymer preparations & applications and enhancement of the quantity & quality of fuels.	3	2	-	3	-	2	-	-	-	-	-	-	-	1	1	1
<b>Average</b>		2.8	1.8	-	1.8	-	2	-	-	-	-	-	-	-	2.2	1.4	1.2

Semester - I																	
22EE101-Basic Electrical and Electronics Engineering																	
Course Outcomes		Program Outcomes												Program Specific Outcomes			
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	
1	Analyze the DC circuits using fundamental laws and theorems.	1	1	-	-	-	-	-	-	-	-	-	1	1	-	-	-
2	Analyze the single and three phase AC circuits.	1	1	-	-	-	-	-	-	-	-	-	1	1	-	-	-
3	Recognize the working principle of electrical machines and transformers.	1	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-
4	Recognize the fundamentals and characteristics of diode, BJT and operational amplifier.	1	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-
5	Demonstrate the concept of electrical installations.	1	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-
<b>Average</b>		1	1	-	-	-	-	-	-	-	-	-	1	1	-	-	-

Semester - I																	
22ME101-Engineering Graphics and Design																	
Course Outcomes		Program Outcomes												Program Specific Outcomes			
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	
1	Familiarize with the fundamentals and standards of engineering graphics.	3	1	-	-	-	-	-	-	-	-	-	-	-	3	1	-
2	Ability to understand the fundamental concepts of projection of points, lines and planes.	3	1	-	-	-	-	-	-	-	-	-	-	-	3	1	-
3	Project the solids and section of solids.	3	1	-	-	-	-	-	-	-	-	-	-	-	3	1	-
4	Familiarize and develop the lateral surfaces of solids	3	1	-	-	-	-	-	-	-	-	-	-	-	3	1	-
5	Visualize and project the orthographic, isometric and perspective sections of simple solids.	3	1	-	-	-	-	-	-	-	-	-	-	-	3	1	-
<b>Average</b>		3	1	-	-	-	-	-	-	-	-	-	-	-	3	1	-

<b>Semester - I</b>																
<b>22EN102-Professional Skills Laboratory</b>																
		<b>Program Outcomes</b>												<b>Program Specific Outcomes</b>		
<b>Course Outcomes</b>		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>1</b>	<b>2</b>	<b>3</b>
1	Read passages fluently with good pronunciation	-	-	-	1	-	-	-	-	2	3	-	1	-	-	1
2	Develop an expressive style of reading	-	-	-	1	-	-	-	-	2	3	-	1	-	-	1
3	Make effective oral presentations in technical and general contexts	-	-	-	2	-	-	-	-	2	3	-	1	-	-	1
4	Excel at professional oral communication	-	-	-	2	-	-	-	-	2	3	-	1	-	-	3
<b>Average</b>		-	-	-	1.5	-	-	-	-	2	3	-	1	-	-	1.5

Semester - I																
22PH103- Physics Laboratory																
Course Outcomes		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Handle different measuring instruments and to measure different parameters.	3	2	-	3	3	-	-	-	3	1	-	2	1	1	1
2	Calculate the important parameters and to arrive at the final result based on the experimental measurements.	3	2	-	2	1	-	-	-	2	-	-	1	1	1	1
<b>Average</b>		3	2	-	2.5	2	-	-	-	2.5	1	-	1.5	1	1	1

Semester - I																
22CY102- Chemistry Laboratory																
		Program Outcomes												Program Specific Outcomes		
Course Outcomes		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Summarize the applicability of the practical skill gained in various fields.	1	1	-	3	-	-	-	-	-	-	-	-	2	-	-
2	Calculate the composition of brass quantitatively and the molecular weight of polymers.	1	2	-	3	-	-	-	-	-	-	-	-	2	-	-
3	Understand the principle and applications of conductometric and ph titrations, spectrometer, and potentiometric titrations.	2	2	-	3	-	-	-	-	-	-	-	-	2	-	-
<b>Average</b>		1.3	1.7	-	3	-	-	-	-	-	-	-	-	2	-	-



Semester - I																	
22EE102- Basic Electrical and Electronics Engineering Laboratory																	
Course Outcomes		Program Outcomes												Program Specific Outcomes			
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	
1	Analyse DC and AC circuits.	1	1	-	-	-	-	-	-	-	-	-	1	1	-	-	-
2	Calculate various losses in transformer.	1	1	-	-	-	-	-	-	-	-	-	1	1	-	-	-
3	Recognise the parts of single-phase and three phase induction motors.	1	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-
4	Demonstrate the characteristics of electron devices.	1	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-
5	Practice electrical connections by wires of appropriate ratings.	1	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-
<b>Average</b>		1	2	-	-	-	-	-	-	-	-	-	1	1	-	-	-

Semester - II																
22EN101- Communicative English																
Course Outcomes		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Comprehend the main ideas, key details and inferred meanings of technical texts	-	-	-	1	-	-	-	-	1	3	-	1	-	-	1
2	Use language effectively at technical and professional contexts	-	-	-	1	-	-	-	-	1	3	-	2	-	-	2
3	Apply the academic and functional writing skills in formal and informal communicative contexts	-	-	-	2	-	-	-	-	1	3	-	1	-	-	1
4	Interpret pictorial representation of statistical data and charts	-	-	-	3	-	-	-	-	1	3	-	1	-	-	1
<b>Average</b>		-	-	-	1.7	-	-	-	-	1	3	-	1.2	-	-	1.2

Semester - II																
22MA201- Partial Differential Equations, Vector Calculus and Complex Variables																
Course Outcomes		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Understand how to solve the given standard partial differential equations.	3	2	1	2	-	-	-	-	-	-	-	-	2	-	-
2	Solve higher order partial differential equations.	3	2	1	2	-	-	-	-	-	-	-	-	2	-	-
3	Use Gauss, Stokes and Green's theorems for the verification of line, surface and volume integrals.	3	2	1	2	-	-	-	-	-	-	-	-	2	-	-
4	Familiar with the concept of Conformal and Bilinear transformations.	3	2	1	2	-	-	-	-	-	-	-	-	2	-	-
5	Acquire the knowledge of Contour integration over unit circle and semi-circle.	3	2	1	2	-	-	-	-	-	-	-	-	2	-	-
<b>Average</b>		3	2	1	2	-	-	-	-	-	-	-	-	2	-	-

Semester-II																
22CY201-Environmental Science and Engineering																
		Program Outcomes												Program Specific Outcomes		
Course Outcomes		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Play an important role in conservation of natural resources for future generation.	3	3	2	-	-	1	3	2	-	-	-	1	2	-	1
2	Paraphrase the importance of ecosystem and biodiversity.	3	3	2	-	-	1	3	2	-	-	-	1	2	-	1
3	Analyze the impact of pollution and hazardous waste in a global and social context.	3	3	2	-	-	1	3	2	-	-	-	1	2	-	1
4	Understand contemporary issues that result in environmental degradation that would attempt to provide solutions to overcome the problems.	3	3	2	-	-	1	3	2	-	-	-	1	2	-	1
5	Consider the issues of environment and human population in their professional undertakings.	3	3	2	-	-	1	3	2	-	-	-	1	2	-	1
<b>Average</b>		3	3	2	-	-	1	3	2	-	-	-	1	2	-	1

Semester - II																	
22CS1010 Problem Solving and C Programming																	
Course Outcomes		Program Outcomes												Program Specific Outcomes			
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	
1	Explain the concepts of C Programming and roles of system software in programming	2	1	3	-	-	-	-	-	-	-	-	-	3	1	-	-
2	Use general problem-solving techniques to develop solution to problems	2	1	3	-	2	-	-	-	-	-	-	-	3	2	-	-
3	Apply the concepts of C Programming to develop solutions by writing C programs	2	1	3	-	2	-	-	-	-	-	-	-	3	3	-	-
<b>Average</b>		2	1	3	-	2	-	-	-	-	-	-	-	3	2	-	-

Semester - II																
22CE101- Engineering Mechanics																
Course Outcomes		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Demonstrate the basics and statics of the particle by applying, knowledge of mathematics and engineering sciences	2	3	1	1	-	-	1	-	-	-	-	-	1	-	-
2	Explain the equilibrium of rigid bodies and draw the free body diagram and mention the supports and the reaction for the diagram.	2	3	2	1	-	-	1	-	-	-	-	-	1	-	-
3	Select and apply appropriate techniques to determine the areas of the surfaces using the various theorems and find the moment of inertia of different body shapes	2	3	2	1	-	-	1	-	-	-	-	-	1	-	-
4	Understand the complex engineering problems to solve the dynamics of particles	2	3	2	1	-	-	1	-	-	-	-	-	1	-	-
5	Understand the mechanisms of rigid bodies using Civil engineering solutions for sustainable development.	2	3	2	1	-	-	1	-	-	-	-	-	1	-	-
<b>Average</b>		2	3	1.8	1	-	-	1	-	-	-	-	-	1	-	-

Semester-II																
22HS201-Universal Human Values																
Course Outcomes		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Become more aware of themselves, and their surroundings (family, society, nature) and become more responsible in life	-	-	1	-	-	1	-	2	-	1	-	3	2	-	1
2	Handle problems with sustainable solutions, while keeping human relationships and human nature in mind	-	-	1	-	-	3	-	1	-	1	-	3	1	-	1
3	Become sensitive to their commitment towards what they have understood (human values, human relationship and human society)	-	-	1	-	-	2	-	1	-	1	-	3	1	-	2
4	Apply what they have learnt to their own self in different day-to-day settings in real life, at least a beginning would be made in this direction.	-	-	2	-	-	1	-	1	-	1	-	3	1	-	1
<b>Average</b>		-	-	1.2	-	-	1.7	-	1.2	-	1	-	3	1.2	-	1.2

Semester-II																	
22NC201-NCC COURSE-I (Only for NCC Students)																	
Course Outcomes		Program Outcomes												Program Specific Outcomes			
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	
1	Demonstrate the usage of features supported by word processing applications.	-	-	-	-	-	-	-	-	-	-	3	-	-	1	-	-
2	Demonstrate the usage of features supported by spread sheet applications.	2	3	-	-	-	-	-	-	-	-	-	-	-	1	-	-
3	Apply general programming techniques to develop digital solution to problems	2	3	3	-	-	-	-	-	-	-	-	-	3	2	-	-
4	Implement solutions develop with general programming techniques in C programming language	1	1	1	-	-	-	-	-	-	-	-	-	3	3	-	-
<b>Average</b>		1.7	2.3	2	-	-	-	-	-	-	-	3	-	3	1.7	-	-



Semester-III																
22MA301-Transforms And Numerical Methods																
Course Outcomes		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Apply the knowledge of Fourier transform in engineering problems.	3	2	2	2	-	-	-	-	-	-	-	-	2	-	-
2	Apply the knowledge of Laplace transforms method to solve second order differential equations.	3	2	2	2	-	-	-	-	-	-	-	-	2	-	-
3	Obtain the numerical solutions of linear, non-linear equations and interpolations for given data.	3	2	2	2	-	-	-	-	-	-	-	-	2	-	-
4	Use the numerical differentiation, integration and IVP on Ordinary differential equations.	3	3	3	2	-	-	-	-	-	-	-	-	2	-	-
5	Solve the Boundary value problems in ordinary and partial differential equations	3	3	3	2	-	-	-	-	-	-	-	-	2	-	-
<b>Average</b>		3	2	2	2	-	-	-	-	-	-	-	-	2	-	-

Semester-III																
22CE301-Mechanics Of Fluids																
		Program Outcomes												Program Specific Outcomes		
Course Outcomes		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Understand Fluid Properties	2	3	2	1	-	-	-	-	-	-	-	-	2	-	-
2	Apply Fluid Statics, Kinematics concepts	2	3	2	1	-	-	-	-	-	-	-	-	2	-	-
3	Study Euler's equation, Bernoulli's equation, its applications	2	3	2	1	1	-	-	-	-	-	-	-	2	-	-
4	Analyze Boundary layer problems, flow through pipes	2	3	2	1	-	-	-	-	-	-	-	-	2	-	-
5	Understand Dimensional and Model Analysis	2	3	2	1	-	-	-	-	-	-	-	-	2	-	-
<b>Average</b>		2	3	2	1	1	-	-	-	-	-	-	-	2	-	-

Semester-III																
22CE302- Surveying																
Course Outcomes		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Use conventional surveying instruments in the field of civil engineering applications	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	Calculate the Elevation for Different terrain from the datum	1	3	3	-	-	-	-	-	3	2	1	-	-	-	-
3	Categorized the terrain and Calculate the Area and Volume for the Terrain	1	3	3	-	-	-	-	-	3	-	-	-	-	-	-
4	Understand the concept of Tacheometric Surveying and Curves layout	2	3	3	2	-	-	-	-	-	1	-	-	-	-	-
5	Use Advanced Equipment in the field of civil engineering.	-	-	-	-	3	-	-	-	3	-	-	3	-	-	-
<b>Average</b>		1.2	3	3	2	3	-	-	-	3	1.5	1	1	-	-	-



Semester-III																
22ES301-Mechanics Of Solids																
Course Outcomes		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Thorough understanding of fundamental concepts of stress, strain in mechanics of solids and in composite structures and also able to develop constitutive relationships between stress and strain for linearly elastic solid.	3	3	2	3	3	-	1	-	-	-	2	1	2	3	-
2	The ability to analyze the determinate beams by determining shear force and bending moments.	3	3	3	3	3	-	-	-	-	-	-	-	3	3	-
3	Determine shear stresses and bending stresses in beams of various types under different loading conditions with varying cross sections.	3	3	3	3	1	-	-	-	-	-	-	-	2	2	-
4	Analyze the determinate trusses and the deformations in thin cylinders and shells.	3	3	3	3	3	-	-	-	-	-	-	-	3	3	-
5	Sufficient knowledge in design shafts to transmit required power and springs for its maximum energy and is able to analyze complex stresses in 2D, principal stresses and their directions.	3	3	3	3	2	-	-	-	-	-	-	-	3	3	-
<b>Average</b>		3	3	2.8	3	2.4	-	1	-	-	-	1	1	2.6	2.8	-

Semester-III																
22ETC301-Technical English																
Course Outcomes		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Draft effective technical documents	-	-	2	-	-	1	-	-	2	3	-	3	-	-	1
2	Attain perfection in grammar and communication	-	-	1	-	-	2	-	-	2	3	-	2	-	-	1
3	Apply professional skills at the work place	-	-	3	-	-	2	-	-	2	3	-	3	-	-	3
4	Communicate in everyday life effectively	-	-	2	-	-	3	-	-	1	3	-	2	-	-	3
5	Participate in interview and group discussion confidently	-	-	2	-	-	2	-	-	3	3	-	3	-	-	3
<b>Average</b>		-	-	2	-	-	2	-	-	2	3	-	2.6	-	-	2.2

**Semester-III**

**22CE304-Advanced Surveying and Basic GIS Practical**

Course Outcomes		Program Outcomes												Program Specific Outcomes			
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	
1	Use conventional surveying instruments in the field of civil engineering applications	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	Calculate the Elevation for Different terrain from the datum	1	3	3	-	-	-	-	-	3	2	1	-	-	-	-	
3	Categorized the terrain and Calculate the Area and Volume for the Terrain	1	3	3	-	-	-	-	-	3	-	-	-	-	-	-	
4	Understand the concept of Tacheometric Surveying and Curves layout	2	3	3	2	-	-	-	-	-	1	-	-	-	-	-	
5	Use Advanced Equipment in the field of civil engineering.	-	-	-	-	3	-	-	-	3	-	-	-	-	-	-	
<b>Average</b>		1.5	3	3	2	3	-	-	-	3	1.5	1	-	-	-	-	

Semester-III																
22CE305-Material Testing & Evaluation Laboratory																
		Program Outcomes												Program Specific Outcomes		
Course Outcomes		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Identify the type of materials	3	1	-	-	-	-	1	-	2	-	-	2	3	-	-
2	Adopt appropriate test to find the properties of materials	3	1	-	-	-	-	1	-	2	-	-	2	3	-	-
3	Arrive the required properties of materials	3	1	-	-	-	-	1	-	2	-	-	2	3	-	-
4	Justify the quality of the materials	3	1	-	-	-	-	1	-	2	-	-	2	3	-	-
5	Recommend the material for a construction work	3	1	-	-	-	-	1	-	2	-	-	2	3	-	-
<b>Average</b>		3	1	-	-	-	-	1	-	2	-	-	2	3	-	-



**SEMESTER-IV****22CE401-Strength Of Materials**

<b>Course Outcomes</b>		<b>Program Outcomes</b>												<b>Program Specific Outcomes</b>		
		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>1</b>	<b>2</b>	<b>3</b>
1	Apply the principle of various theorems in measurement of slope and deflection for beams	2	3	-	2	1	-	-	-	-	-	-	-	-	-	-
2	Plot shear force and bending moment diagram for indeterminate beams	-	3	-	2	2	-	-	-	-	-	-	-	-	-	-
3	Visualize the behaviour of column for combined bending and axial loading	2	2	2	3	2	-	-	-	-	-	-	-	-	-	-
4	Apply the different methods in unsymmetrical bending analysis	2	3	-	2	2	1	-	-	-	-	-	-	-	-	-
5	Demonstrate the different theories of failure for brittle and ductile materials and Different stress developed in thick cylinders and spherical shells	-	3	-	2	2	1	-	-	-	-	-	-	2	-	-
<b>Average</b>		2	2.8	2	2.2	1.8	1	-	-	-	-	-	-	2	-	-

Semester-IV																
22CE402-Steel Structural Elements																
Course Outcomes		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Describe the concepts of steel structures and its design philosophies.	1	2	3	3	-	-	-	-	-	1	-	-	2	3	-
2	Design structural steel bolted and welded connections for steel structures	1	2	3	3	-	-	-	-	-	1	-	-	2	3	-
3	Design structural steel members subjected to tension	1	2	3	3	-	-	-	-	-	1	-	-	2	3	-
4	Design compression members using simple and built-up sections and column bases	1	2	3	3	-	-	-	-	-	1	-	-	2	3	-
5	Understand the behaviour of beams and design of laterally supported and unsupported beams.	1	2	3	3	-	-	-	-	-	1	-	-	2	3	-
<b>Average</b>		1	2	3	3	-	-	-	-	-	1	-	-	2	3	-

Semester-IV																
22CE403-Mechanics Of Soils																
Course Outcomes		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Classify the soil based on the tests conducted.	3	1	2	1	-	-	-	-	-	-	-	-	3	-	-
2	Do proper stress estimation for various types of foundation loads.	3	1	2	1	-	-	-	-	-	-	-	-	3	-	-
3	Analyze any practical problems related to soil stresses estimation, permeability and seepage including flow net diagram	3	2	2	1	-	-	-	-	-	-	-	-	3	-	-
4	Solve practical problems related to consolidation settlement and time rate of settlement	3	3	2	1	-	-	-	-	-	-	-	-	3	-	-
5	Estimate shear strength of soil using the parameters obtained from different lab tests.	3	3	2	1	-	-	-	-	-	-	-	-	3	-	-
<b>Average</b>		3	2	2	1	-	-	-	-	-	-	-	-	3	-	-

Semester-IV																
22CE404- Water Supply Engineering																
Course Outcomes		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Identify the sources of water supply, analyse the characteristics of water and an understanding of water quality criteria and standards and their relation to public health.	3	1	2	-	2	3	3	-	-	1	2	1	3	1	2
2	Get an insight into water transport and classification of intake structures, pipes and pumps.	3	3	2	-	-	3	3	-	-	-	2	1	3	-	2
3	Get the knowledge in various unit operations and processes in water treatment.	3	3	3	2	1	3	3	-	-	2	2	1	3	1	1
4	Assess the various advanced water treatment methods	2	2	1	1	-	3	1	-	2	3	2	3	3	1	2
5	Express the analysis of distribution network and house service connections.	2	2	1	1	1	3	1	1	2	3	2	1	3	1	2
<b>Average</b>		2.6	2.2	1.8	1.3	1	3	2.2	1	2	2.2	2	1.4	3	1	1.8

Semester-IV																
22CE405-Applied Hydraulics and Fluid Machinery																
		Program Outcomes												Program Specific Outcomes		
Course Outcomes		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Understand open channel flow,	2	3	2	2	-	-	-	-	-	-	-	-	2	-	-
2	Analyse varied flow, hydraulic jump problems	2	3	2	2	-	-	-	-	-	-	-	-	2	-	-
3	Apply momentum principle in Hydraulic machines	2	3	2	2	-	-	-	-	-	-	-	-	2	-	-
4	Analyse the characteristics, performance of various turbines	2	3	2	2	-	-	-	-	-	-	-	-	2	-	-
5	Understand about working of different pumps and Efficiency	2	3	2	2	-	-	-	-	-	-	-	-	2	-	-
<b>Average</b>		2	3	2	2	-	-	-	-	-	-	-	-	2	-	-

Semester-IV																
22CE406-Concrete Technology																
Course Outcomes		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Test all the concrete materials as per IS code.	-	-	-	-	3	-	1	1	1	2	1	1	1	-	1
2	Design the concrete mix using ACI and IS code methods.	-	-	-	-	3	-	3	-	1	1	-	-	2	-	1
3	Determine the properties of fresh and hardened concrete.	-	-	-	-	-	-	3	-	-	1	-	-	1	-	1
4	Know about the applications of special concretes and different concreting methods.	-	-	-	-	3	2	1	-	-	-	-	-	-	-	1
5	Ensure quality control while testing/ sampling and acceptance criteria.	-	-	-	-	3	3	3	1	1	3	1	-	3	-	1
<b>Average</b>		-	-	-	-	3	2.5	2.2	1	1	1.7	1	1	1.7	-	1

Semester-IV																
22CE407-Computer Aided Building Drawing																
Course Outcomes		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Draft the plan, elevation and sectional views of the Residential buildings with load bearing walls manually and using computer software.	-	-	-	-	-	-	2	-	2	2	1	-	2	3	2
2	Draft the plan, elevation and sectional views of the framed buildings using computer software and manually.	-	-	-	-	-	-	2	-	2	2	2	-	2	3	2
3	Draft the plan, elevation and sectional views of the office building using computer software and manually.	-	-	-	-	-	-	2	-	2	2	2	-	2	3	2
4	Draft the plan, elevation and sectional views of the industrial structures, manually.	-	-	-	-	-	-	2	-	2	2	2	-	2	3	3
5	Draft the perspective views for small buildings,	-	-	-	-	-	-	-	-	2	2	-	-	2	3	1
<b>Average</b>		-	-	-	-	-	-	2	-	2	2	1.7	-	2	3	2

Semester-IV																
22CE408-Applied Hydraulic & Machinery Laboratory																
Course Outcomes		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Explain the operations of various types of flow measuring devices and determine the frictional and minor losses.	1	1	1	1	-	-	-	-	-	-	-	-	1	-	-
2	Calibrate flow measuring devices used in pipes, channels and tanks	3	3	3	3	-	-	-	2	-	-	-	2	2	1	-
3	Determine fluid and flow properties	3	3	3	3	-	-	-	-	-	-	-	-	2	1	-
4	Design and study the performance of various types of hydraulic turbines	3	3	1	1	-	1	-	-	-	-	-	-	2	1	1
5	Design and study the performance of various types of hydraulic turbines	3	3	3	3	-	1	1	2	-	-	-	-	2	1	1
<b>Average</b>		2.6	2.6	2.2	2.2	-	2	1	2	-	-	-	2	1.8	1	1



Semester-IV																
22MC401-Disaster Preparedness and Planning																
Course Outcomes		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Identifying the different disasters and its causes.	-	-	1	-	2	2	2	1	-	-	1	2	2	-	1
2	Identifying the vulnerable areas of disasters in India.	-	-	1	-	2	2	2	1	-	-	1	1	2	-	1
3	Getting knowledge about preparedness during disasters.	-	-	1	-	2	2	2	1	-	-	1	2	2	-	1
4	Analysing the risk in disasters.	-	-	1	-	2	2	2	1	-	-	1	1	2	-	1
5	Knowing the corrective measures to mitigate disasters.	-	-	1	-	2	2	2	1	-	-	1	2	2	-	1
<b>Average</b>		-	-	1	-	2	2	2	1	-	-	1	1.6	2	-	1

Semester-V																
22CE501- Basic Structural Analysis																
Course Outcomes		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Construct influence line diagram for determinate and indeterminate beams	2	1	1	3	1	1	1	-	-	-	-	-	2	1	-
2	Analyse beams and trusses by strain energy method	2	1	1	3	1	1	1	-	-	-	-	-	2	1	-
3	Adopt the arch shape in construction	3	1	1	2	3	1	1	-	-	-	-	-	2	1	-
4	Analyse the cable stayed bridges under different loads	2	1	1	2	1	1	1	-	-	-	-	-	2	1	-
5	Analyse the beams and single bay frames in plastic behaviour	2	1	1	3	1	1	1	-	-	-	-	-	2	1	-
<b>Average</b>		2.2	1	1	2.6	1.4	1	1	-	-	-	-	-	2	1	-

<b>Semester-V</b>																
<b>22CE502-Foundation Engineering</b>																
		<b>Program Outcomes</b>												<b>Program Specific Outcomes</b>		
<b>Course Outcomes</b>		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>1</b>	<b>2</b>	<b>3</b>
1	Characterise the soil investigation for any civil engineering construction.	3	2	2	1	1	2	-	-	-	-	-	-	3	-	-
2	Estimate the bearing capacity and settlement of soils	3	3	2	1	1	2	-	-	-	-	-	-	3	-	-
3	Calculate the load carrying capacity	3	3	2	1	1	2	-	-	-	-	-	-	3	-	-
4	Analyse the stability of slopes	3	3	2	1	1	2	-	-	-	-	-	-	3	-	-
5	Calculate the earth pressure on retaining walls	3	3	2	1	1	2	-	-	-	-	-	-	3	-	-
<b>Average</b>		3	2.8	2	1	1	2	-	-	-	-	-	-	3	-	-

<b>Semester-V</b>																
<b>22CE503-Water Resources Engineering</b>																
		<b>Program Outcomes</b>												<b>Program Specific Outcomes</b>		
<b>Course Outcomes</b>		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>1</b>	<b>2</b>	<b>3</b>
1	Understand the various concepts in the surface water hydrology	3	3	3	2	3	3	3	-	-	-	-	-	3	-	-
2	Identify the various types of reservoirs and design aspects	3	3	3	2	3	3	3	-	-	-	-	-	3	-	-
3	Understand the various concepts in ground water hydrology	3	3	3	2	3	3	3	-	-	-	-	-	3	-	-
4	Design the various components of distribution system	3	3	3	2	3	3	3	-	-	-	-	-	3	-	-
5	Assess the problems and remedies of water logging	3	3	3	2	3	3	3	-	-	-	-	-	3	-	-
<b>Average</b>		3	3	3	2	3	3	3	-	-	-	-	-	3	-	-

Semester-V																
22CE504-Design of Reinforced Concrete Elements																
Course Outcomes		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Understand the objective of the structural design and to apply the fundamental concepts of various design philosophies. Use IS code of practice to design the basic reinforced concrete elements	1	1	1	2	-	-	1	-	-	1	-	1	3	1	-
2	Analyse, design and to present detailing of reinforcement for flexure members.	3	3	2	2	-	-	2	-	-	1	-	1	3	1	-
3	Analyse, design and to present detailing of Slab and beam elements for bond, anchorage, shear and torsion.	3	3	2	2	-	-	2	-	-	1	-	1	3	1	-
4	Analyse, design and detailing of Columns	3	3	2	2	-	-	2	-	-	1	-	1	3	1	-
5	Analyse, design and detailing of Footings and staircases.	3	3	2	2	-	-	2	-	-	1	-	1	3	1	-
<b>Average</b>		2.6	2.6	1.8	2	-	-	1.8	-	-	1	-	1	3	1	-

<b>Semester-V</b>																
<b>22CE505-Wastewater Engineering</b>																
		<b>Program Outcomes</b>												<b>Program Specific Outcomes</b>		
<b>Course Outcomes</b>		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>1</b>	<b>2</b>	<b>3</b>
1	Estimate sewage generation and design sewer system including sewage pumping stations	2	3	2	1	1	2	-	2	-	-	3	-	3	2	2
2	Summarize the characteristics and composition of sewage, preliminary and primary treatment of sewage	-	1	3	-	1	3	2	2	-	-	3	-	3	-	-
3	Perform basic design of the biological treatment processes that are used in sewage treatment	-	-	2	-	1	3	-	2	-	-	3	-	3	-	1
4	Gain knowledge on sludge treatment and disposal	-	-	2	1	1	3	2	2	-	-	3	-	3	-	2
5	Justify the methods for disposal of sewage and reuse of wastewater	-	-	3	-	1	3	-	2	1	1	3	-	3	-	3
<b>Average</b>		2	2	2.4	1	1	2.8	2	2	1	1	3	-	3	2	2

<b>Semester-V</b>																
<b>22CE506- Transportation Engineering</b>																
		<b>Program Outcomes</b>												<b>Program Specific Outcomes</b>		
<b>Course Outcomes</b>		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>1</b>	<b>2</b>	<b>3</b>
1	Understand surveys involved in highway alignment	2	2	3	1	-	-	-	-	-	-	-	-	3	-	1
2	Design cross section elements and compute sight distance, horizontal and vertical profile of a road	2	3	2	-	2	-	-	-	-	-	1	1	3	-	-
3	Apply construction procedure & maintenance for highways	1	1	-	1	-	-	-	-	-	-	-	-	1	-	-
4	Describe the components of railways way and compute superelevation of railways	3	2	1	1	-	-	-	-	-	-	1	-	3	-	1
5	Apply the various methods for track alignment, procedure for construction of railway & maintenance of track	1	-	3	-	3	-	-	-	-	-	1	-	2	-	1
<b>Average</b>		1.8	2	2.2	1	2.5	-	-	-	-	-	1	1	2.4	-	1

Semester-V																
22CE507-Geotechnical Engineering Laboratory																
Course Outcomes		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Identify the index properties of soil by conducting laboratory tests.	3	2	1	1	2	1	-	-	-	2	-	-	3	-	-
2	Classify the type of soil.	2	1	-	1	-	-	-	-	-	2	-	-	3	-	-
3	Determine the bearing capacity of the soil	3	2	3	2	2	3	-	-	-	2	-	-	3	-	1
4	Estimate the permeability of the soil	3	2	2	2	2	2	-	-	-	2	-	-	3	-	1
5	Find the shear parameters and shear strength of soil from laboratory tests.	3	2	3	2	2	3	-	-	-	2	-	-	3	-	-
<b>Average</b>		2.8	1.8	2.2	1.6	2	2.2	-	-	-	2	-	-	3	-	1



<b>Semester-V</b>																
<b>22CE508-Environmental Quality Measurements Laboratory</b>																
		<b>Program Outcomes</b>												<b>Program Specific Outcomes</b>		
<b>Course Outcomes</b>		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>1</b>	<b>2</b>	<b>3</b>
1	Acquire knowledge about type and degree of pollutant for water and wastewater.	1	-	2	-	-	1	-	-	-	-	-	2	1	-	-
2	Obtain capability to conduct experiments and estimate the concentration of various parameters in water and wastewater samples	2	2	-	1	-	1	-	-	-	-	-	2	-	-	-
3	Interpret the results with standards and discuss based on the purpose of analysis.	-	-	2	2	-	2	3	-	-	-	-	-	1	-	2
4	Recommend the type of treatment required for water sample which is suitable for drinking purpose	-	1	3	1	1	2	3	-	2	3	3	2	3	-	3
5	Suggest the treatment required for wastewater sample for its disposal in various environment	-	1	3	1	1	2	3	-	2	3	3	2	3	-	3
<b>Average</b>		1.5	1.3	2.5	1.2	1	1.6	3	-	2	3	3	2	1.6	-	1.6

<b>Semester-V</b>																
<b>22MC501-Indian Constitution</b>																
		<b>Program Outcomes</b>												<b>Program Specific Outcomes</b>		
<b>Course Outcomes</b>		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>1</b>	<b>2</b>	<b>3</b>
1	Understanding the Fundamental Rights and Duties	-	-	1	-	-	3	-	3	2	1	1	2	1	-	1
2	Listing the agreement between the Union and the Territories	-	-	1	-	-	3	-	3	2	1	1	2	1	-	1
3	Analysing the role of the constitution in a democratic society.	-	-	1	-	-	3	-	3	2	1	1	2	1	-	2
4	Explaining the key concepts of the Indian Political System.	-	-	1	-	-	3	-	3	2	1	1	2	1	-	2
5	Presenting the structure and functions of the Central and State Governments, the Legislature and the Judiciary	-	-	1	-	-	3	-	3	2	1	1	2	1	-	-
<b>Average</b>		-	-	1	-	-	3	-	3	2	1	1	2	1	-	1.5

Semester-VI																
22CEPE01-Prestressed Concrete Structures																
Course Outcomes		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Differentiate pre-tensioned and post-tensioned prestressed concrete	2	1	1	3	1	1	1	-	-	-	-	-	2	1	-
2	Design a prestressed concrete beam accounting for losses and deflection	2	1	1	3	1	1	1	-	-	-	-	-	2	1	-
3	Design the prestressing members subjected to stress function	2	1	1	2	2	1	1	-	-	-	-	-	2	1	-
4	Design the anchorage zone for post tensioned members	2	1	1	2	1	1	1	-	-	-	-	-	2	1	-
5	Know the partial and circular prestressing technique in various structures.	2	1	1	3	1	1	1	-	-	-	-	-	2	1	-
<b>Average</b>		2	1	1	2.6	1.2	1	1	-	-	-	-	-	2	1	-

<b>Semester-VI</b>																
<b>22CEPE02-Building Information Modelling</b>																
		<b>Program Outcomes</b>												<b>Program Specific Outcomes</b>		
<b>Course Outcomes</b>		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>1</b>	<b>2</b>	<b>3</b>
1	Model the architectural features	1	2	2	2	3	-	-	-	-	2	-	-	-	3	-
2	Analyse the efficiency of HVAC system	1	3	2	2	3	-	-	-	-	2	-	-	-	3	-
3	Plan the schedule for the construction projects	1	2	2	2	3	-	-	-	-	2	3	-	-	3	-
4	Estimate the cost of project	1	2	2	1	3	-	-	-	-	2	2	-	-	3	-
5	Interpret the clash analysis report	1	3	2	3	3	-	-	-	-	3	2	-	-	3	-
<b>Average</b>		1	2.4	2	2	3	-	-	-	-	2.2	2.3	-	-	3	-

Semester-VI																
22CEPE03-Sustainable and Green Building Technology																
Course Outcomes		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Understand the concepts of Green Building and its Design Features.	-	-	-	1	1	2	3	-	-	1	2	1	2	-	-
2	Assess Environmental Impacts.	-	1	1	2	-	-	-	1	-	2	-	-	1	3	-
3	Explain the concept of Energy and Energy Conservation.	-	-	3	-	3	-	-	-	-	2	2	-	-	-	-
4	Discuss the Principles and Planning of Green Building.	1	-	-	-	3	-	-	-	-	2	2	-	-	-	-
5	Summarize the green Building Functions in various organizations.	1	1	2	3	3	-	-	-	-	3	2	-	-	3	-
<b>Average</b>		1	1	2	2	2.5	2	3	1	-	2	2	1	1.5	3	-

Semester-VI																
22EC502-Digital signal processing																
Course Outcomes		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Analyse the need for Discrete Fourier Transform, Fast Fourier Transform algorithms in digital signals & systems.	3	3	1	1	1	-	-	-	-	-	-	-	1	1	1
2	Design and realize IIR filters	3	2	2	2	1	-	1	-	-	-	-	-	1	1	1
3	Design and realize FIR filters	3	2	2	2	1	-	1	-	-	-	-	-	1	1	1
4	Analyse finite Word length effect on filters.	3	2	2	2	1	-	1	-	-	-	-	-	1	1	1
5	Apply the concepts of Multi rate signal processing and Gain the knowledge on DSP architecture and programming	1	1	1	1	1	-	-	-	-	-	-	-	2	2	1
<b>Average</b>		2.6	2	1.6	1.6	1	-	1	-	-	-	-	-	1.2	1.2	1

Semester-VI																
22CEPE04-Advanced Steel Structures																
Course Outcomes		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Classify the different types of connections based on rotation capacity	1	-	2	-	-	2	-	1	2	-	-	-	-	2	1
2	Explain the loads on plate and gantry girder and design of plate and gantry girder.	1	-	2	-	-	2	-	1	2	1	-	-	-	2	1
3	Design the components of roof truss	2	-	2	-	-	2	-	1	2	1	1	-	-	2	2
4	Design and detailing of Connections, Plate Girder and Gantry Girder.	2	-	2	-	-	2	-	1	2	1	2	-	-	2	2
5	Design and detailing of Beam-Columns and Light Gauge steel beams and columns	2	-	2	-	-	2	-	1	2	1	-	-	-	2	1
<b>Average</b>		1.6	-	2	-	-	2	-	1	2	1	1.5	-	-	2	1.4

<b>Semester-VI</b>																
<b>22CEPE05-Dynamics And Earthquake Resistant Design of Structures</b>																
<b>Course Outcomes</b>		<b>Program Outcomes</b>												<b>Program Specific Outcomes</b>		
		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>1</b>	<b>2</b>	<b>3</b>
1	Apply the basics of Earthquake Engineering	2	3	3	2	2	2	2	-	-	-	2	1	2	1	-
2	Demonstrate the dynamics of structural system under earthquake load	2	3	3	2	2	2	2	-	-	-	2	1	2	1	-
3	Analyse the influence of the structural / geometrical design in building characteristics	2	3	3	2	2	2	2	-	-	-	2	1	2	1	-
4	Demonstrate the cyclic loading familiar of RC steel and prestressed concrete elements	2	3	3	2	2	2	2	-	-	-	2	1	2	1	-
5	Apply codal provisions on different types of structures	2	3	3	2	2	2	2	-	-	-	2	1	2	1	-
<b>Average</b>		2	3	3	2	2	2	2	-	-	-	2	1	2	1	-



**Semester-VI****22CEPE06-Storage Structures**

<b>Course Outcomes</b>		<b>Program Outcomes</b>												<b>Program Specific Outcomes</b>		
		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>1</b>	<b>2</b>	<b>3</b>
1	Learn the basic theory and concepts of designing the steel storage structures like Water tank	1	1	3	3	3	-	1	-	-	-	-	1	3	-	1
2	Design of Steel and Reinforced Concrete Water tanks	1	1	3	3	3	-	1	-	-	-	-	1	3	-	1
3	Designing the Steel Bunkers and Silo	1	1	3	3	3	-	1	-	-	-	-	1	3	-	1
4	Design of Steel and Reinforced Concrete Bunkers and Silos	1	1	3	3	3	-	1	-	-	-	-	1	3	-	1
5	Design of Prestressed Concrete Water tank	1	1	3	3	3	-	1	-	-	-	-	1	3	-	1
<b>Average</b>		1	1	3	3	3	-	1	-	-	-	-	1	3	-	1

Semester-VI																
22CEPE07-Highrise Buildings																
Course Outcomes		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Understand knowledge in types of concrete	1	3	1	1	1	1	1	1	-	-	-	1	1	-	2
2	Understand knowledge in types of loads	3	3	3	3	1	1	2	-	-	-	-	1	1	-	1
3	Analysis the various structural systems	3	1	3	3	2	1	3	1	-	-	-	1	1	-	1
4	Analysis the building structures	1	1	2	2	1	1	2	1	-	-	-	1	1	-	1
5	Stability evaluation of tall buildings with respect to various factors	1	1	2	2	1	1	2	1	-	-	-	1	1	-	1
<b>Average</b>		1.8	1.8	2.2	2.2	1.2	1	2	1	-	-	-	1	1	-	1.2

**Semester-VI**

**22CEPE08-Advanced Concrete Design**

		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Course Outcomes		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Design the combined footings and draw the reinforcement details	1	2	1	-	-	-	2	2	2	1	-	-	-	-	-
2	Design and draw the reinforcement details of retaining walls and flat slab.	1	2	1	-	-	-	2	2	2	1	-	-	-	-	-
3	Analyse and design the slabs based on yield line theory and draw the reinforcement details.	1	2	1	-	-	-	2	2	2	1	-	-	-	-	-
4	Design the water tanks and draw the reinforcement details	1	2	1	-	-	-	2	2	2	1	-	-	-	-	-
5	Analyse and design the building frames by approximate method and draw the reinforcement details	1	2	1	-	-	-	2	2	2	1	-	-	-	-	-
<b>Average</b>		1	2	1	-	-	-	2	2	2	1	-	-	-	-	-

Semester-VI																
22CEPE09-Design Of Composite Structures																
Course Outcomes		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Gain knowledge about the composite structures	3	2	3	-	2	1	1	2	-	-	-	1	3	2	-
2	Design composite beams, columns and trusses	3	2	3	-	2	1	1	2	-	-	-	1	3	2	-
3	Design connections in composite structures	3	2	3	-	2	1	1	2	-	-	-	1	3	2	-
4	Design box-girder bridges including the related connections	3	2	3	-	2	1	1	2	-	-	-	1	3	2	-
5	Get exposure on case studies related to steel-concrete constructions of buildings.	-	-	-	2	2	2	1	-	-	3	-	2	2	-	-
<b>Average</b>		3	2	3	2	2	1.2	1	2	-	3	-	1.2	2.8	2	-

Semester-VI																
22CEPE10-Coastal Structures																
Course Outcomes		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Understand coastal Engineering aspects of harbors methods to improve navigation	2	2	2	1	1	-	-	-	-	-	-	-	-	2	-
2	Understand wave properties and analysis of waves	2	2	1	-	-	-	-	-	-	-	-	-	-	2	-
3	Understand the concept of sediment transport	2	1	1	1	1	-	-	-	-	-	-	-	-	1	-
4	Design of shore defense structure	1	1	1	1	1	-	-	-	-	-	-	-	-	1	-
5	Gain the knowledge in Modeling in Coastal Engineering	2	1	2	1	1	1	1	-	-	-	-	-	1	1	-
<b>Average</b>		1.8	1.4	1.4	1	1	1	1	-	-	-	-	-	1	1.4	-

Semester-VI																
22CEPE11-Ferrocement Technology																
Course Outcomes		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Know about the ferrocement technology	-	-	-	-	-	2	3	-	-	-	-	-	3	-	-
2	Acquire knowledge about the mechanical properties of ferrocement	-	-	-	-	-	2	3	-	-	-	-	-	3	-	-
3	Understand of construction methods of ferrocement	-	-	-	-	-	2	3	-	-	-	-	-	3	-	-
4	Design the ferrocement structures	3	2	2	-	2	2	2	-	-	-	-	-	3	-	-
5	Understand the hydraulic structures and soil retaining structures	-	-	-	-	-	2	3	-	-	-	-	-	3	-	-
<b>Average</b>		3	2	2	-	2	2	2.8	-	-	-	-	-	3	-	-

Semester-VI																
22CEPE12-Air Pollution Control Engineering																
		Program Outcomes												Program Specific Outcomes		
Course Outcomes		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Identify the sources and effects of air pollutants	-	-	1	-	-	3	-	1	1	-	1	1	3	-	1
2	Get the knowledge about dispersion of air pollutants	-	-	1	-	-	3	-	-	2	-	-	-	1	-	2
3	Know about air pollution control measures	-	-	3	3	2	3	3	3	3	3	1	3	3	1	3
4	Aware about air quality management	-	2	2	1	2	3	2	-	2	-	1	2	3	-	2
5	Understand the sources, effects and control methods of noise pollution	-	-	3	3	3	3	3	3	3	3	1	2	3	-	3
<b>Average</b>		-	2	2	1.7	1.7	3	2.6	2.3	2.2	3	1	2	2.6	1	2.2

**Semester-VI**

**22CEPE13-Marine Pollution Monitoring and Control**

		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Course Outcomes		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Ability to know about marine environment	2	1	2	1	-	1	-	-	2	2	2	2	1	-	2
2	learnt the physical concepts lying behind the oceanic currents and natural processes of various activities happening over the marine environment	3	1	-	2	2	-	1	1	1	2	2	2	1	-	2
3	Acquired knowledge on the marine pollution and the effect of the same on the ecology	2	2	2	1	1	2	-	-	2	3	2	1	1	-	2
4	Gain the knowledge on remote sensing and various other techniques for measuring and monitoring oceanic environment parameters	-	3	2	2	2	2	2	-	3	3	2	3	3	1	3
5	Acquired knowledge on control of marine pollution and sustainable development	1	2	2	1	2	1	2	1	2	3	2	2	2	-	-
<b>Average</b>		1.6	1.8	2	1.4	1.7	1.2	1.6	1	2	2.6	2	2	1.6	1	2.2



Semester-VI																
22CEPE14-Solid Waste Management																
Course Outcomes		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Identify the characteristics, types and sources of municipal solid wastes and the present scenario of solid waste management	-	1	2	-	-	2	-	-	-	-	-	-	2	2	1
2	On-site processing of municipal solid wastes and apply knowledge for recycling and reuse of waste	-	3	-	-	-	2	1	-	-	-	1	-	3	2	2
3	Learn the collection methods of solid waste and to transfer it to the disposal site	1	-	2	-	-	3	-	-	-	-	1	-	2	2	-
4	Know about off-site processing of municipal solid wastes and its recovery	1	2	1	-	1	2	1	1	1	1	1	-	3	1	2
5	Apply the effective municipal solid waste disposal methods	2	1	1	1	1	1	2	-	2	-	1	1	3	1	1
<b>Average</b>		1.3	1.7	1.5	1	1	2	0.8	1	1.5	1	1	1	2.6	1.6	1.5

**Semester-VI**

**22CEPE15-Hazardous Waste Management**

Course Outcomes		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Expertise on hazardous wastes management	-	1	2	-	-	2	-	-	-	-	-	-	2	2	1
2	Understand the characteristics of different types of hazardous waste management and suggest suitable technical solutions for source reduction	-	3	-	-	-	2	1	-	-	-	1	-	3	2	2
3	Knowledge about storage and collection of hazardous wastes	1	-	2	-	-	3	-	-	-	-	1	-	2	2	-
4	Analyze effective hazardous waste processing techniques	1	2	1	-	1	2	1	1	1	1	1	-	3	1	2
5	Identify the hazardous waste disposal methods	2	1	1	1	1	1	2	-	2	-	1	1	3	1	1
<b>Average</b>		1.3	1.7	2	1	1	2	1.3	1	1.5	1	1	1	2.6	1.6	1.5

**Semester-VII****22CE701-Advanced Structural Analysis**

<b>Course Outcomes</b>		<b>Program Outcomes</b>												<b>Program Specific Outcomes</b>		
		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>1</b>	<b>2</b>	<b>3</b>
1	Have the knowledge on classical method (SDM) of analysis of indeterminate structures	3	1	1	1	-	1	2	-	-	-	-	2	3	-	-
2	Have the knowledge on classical method (MDM) of analysis of indeterminate structures.	3	1	1	1	-	1	2	-	-	-	-	2	3	-	-
3	Analyse indeterminate structures using force methods	2	3	1	1	-	1	2	-	-	-	-	2	3	-	-
4	Analyse indeterminate structures using displacement methods	2	3	1	1	-	1	2	-	-	-	-	2	3	-	-
5	Analyse the indeterminate structures and frames by using modern method of analysis	2	3	1	1	-	1	2	-	-	-	-	2	3	-	-
<b>Average</b>		2.4	2.2	1	1	-	1	2	-	-	-	-	2	3	-	-

Semester-VII																
22CE702-Human Values, Professional Practice, Ethics and Building By-Laws																
Course Outcomes		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Familiarise the students to what constitutes human values and professional practice	-	-	1	-	1	3	2	2	1	1	-	2	1	-	2
2	Importance of various stakeholders and their respective roles; understanding the fundamental ethics governing the profession.	-	-	1	-	-	3	2	2	1	-	1	2	1	-	2
3	Giving a good insight into contracts and contracts management in civil engineering, dispute resolution mechanisms; laws governing engagement of labour	-	-	2	-	1	3	2	2	1	1	-	2	1	-	2
4	Making the students understand the types of roles they are expected to play in the society as practitioners of the civil engineering profession and Arbitration and Conciliation system.	-	-	1	-	-	3	2	2	1	-	1	2	1	-	2
5	Explaining different building by-laws	-	-	2	-	1	3	2	2	1	1	-	2	1	-	2
<b>Average</b>		-	-	1.4	-	1	3	2	2	1	1	1	2	1	-	2

**Semester-VII****22CE703-Estimation, Costing and Valuation**

<b>Course Outcomes</b>		<b>Program Outcomes</b>												<b>Program Specific Outcomes</b>		
		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>1</b>	<b>2</b>	<b>3</b>
1	Understand the approximate cost of the projects through preliminary and detailed estimates	2	2	2	1	1	-	-	-	-	-	-	-	-	2	-
2	Analyse the rates of individual items for the preparation of the estimates	2	2	2	-	-	-	-	-	-	-	-	-	-	2	-
3	Explain schedule of quantities required to be attached with the tender documents	2	2	1	2	1	-	-	-	-	-	-	-	-	2	-
4	Gain knowledge on types of contract.	2	2	1	1	1	-	-	-	-	-	-	-	-	2	-
5	Understand the valuation of assets	2	2	3	2	1	2	1	-	-	-	-	-	1	2	-
<b>Average</b>		2	2	1.8	1.5	1	2	1	-	-	-	-	-	1	2	-

**Semester-VII**

**22CE704-Concrete Technology Laboratory**

		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Course Outcomes		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Know the techniques to characterize various construction materials through relevant tests.	-	-	-	2	2	-	-	-	2	-	-	-	2	-	2
2	Test all the concrete materials as per IS code	-	-	-	2	-	-	1	-	-	-	-	-	2	-	2
3	Design the concrete mix using IS code	-	-	-	2	-	-	1	-	-	-	-	-	2	-	2
4	Determine the properties of fresh and hardened concrete	-	-	-	-	2	-	2	-	-	-	-	-	1	-	1
5	Conduct tests on concrete using NDT methods	-	-	-	-	2	-	2	-	-	-	-	-	1	-	1
<b>Average</b>		-	-	-	2	2	-	1.5	-	2	-	-	-	1.6	-	1.6

**Semester-VII****22CE705-Computer Aided Design and Drawing**

		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Course Outcomes		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Acquire hands on experience on designing the concrete structures	-	-	-	2	2	-	-	-	2	-	-	-	2	-	2
2	Acquire hands on experience on designing the steel structures	-	-	-	2	-	-	1	-	-	-	-	-	2	-	2
3	Preparation of structural drawings of concrete structures with all details	-	-	-	2	-	-	1	-	-	-	-	-	2	-	2
4	Preparation of structural drawings of steel structures with all details	-	-	-	-	2	-	2	-	-	-	-	-	1	-	1
5	Analyse the RCC and Steel structures with safe limits and checking the design.	-	-	-	-	2	-	2	-	-	-	-	-	1	-	1
<b>Average</b>		-	-	-	2	2	-	1.5	-	2	-	-	-	1.6	-	1.6





<b>Semester-VII</b>																
<b>22CEPE17-River Engineering</b>																
		<b>Program Outcomes</b>												<b>Program Specific Outcomes</b>		
<b>Course Outcomes</b>		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>1</b>	<b>2</b>	<b>3</b>
1	Understand the various channel systems	1	1	-	1	-	-	-	-	1	-	-	-	-	-	-
2	Understand the behaviour of river	2	-	-	-	-	2	-	-	-	-	-	-	-	-	-
3	Identify various types of reservoirs and their design aspects	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-
4	Understand the Bio-engineering Techniques	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
5	Design the protection works	1	-	-	-	-	-	-	-	-	2	-	-	-	-	-
<b>Average</b>		1.3	1	2	1	-	2	1	-	1	2	-	-	-	-	-



**Semester-VII**

**22CEPE19-Watershed Management**

		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Course Outcomes		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Understand the various components of the hydrological cycle	1	1	-	-	-	-	-	-	-	3	-	-	1	1	1
2	Estimate the hydrological parameters such as precipitation, Evaporation and Infiltration	2	1	-	2	-	-	-	-	-	3	-	-	3	2	1
3	Construct and apply a range of hydrological models to surface water and groundwater problems such as Hydrograph	2	1	-	2	-	-	-	-	-	3	-	-	2	2	2
4	Understand and apply the various concepts in Flood analysis and Routing	2	2	-	2	-	-	-	-	-	3	-	-	3	2	3
5	Apply the various concepts in ground water Hydrology	1	1	-	1	-	-	-	-	-	3	-	-	2	2	1
<b>Average</b>		1.6	1.2	-	1.7	-	-	-	-	-	3	-	-	2.2	1.8	1.6

**Semester-VII**

**22CEPE21-Ground Improvement Techniques**

		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Course Outcomes		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Demonstrate the various ground improvement techniques	1	-	2	2	3	2	2	2	-	-	-	1	2	-	-
2	Understand drainage and dewatering techniques	1	-	2	2	3	2	2	2	-	-	-	1	2	-	-
3	Carry out in situ treatment of cohesionless and cohesive soils	1	-	2	2	3	2	2	2	-	-	-	1	2	-	-
4	Apply the geotextile material in practice	1	-	2	2	3	2	2	2	-	-	-	1	2	-	-
5	Know the grouting equipment and monitoring	1	-	2	2	3	2	2	2	-	-	-	1	2	-	-
<b>Average</b>		1	-	2	2	3	2	2	2	-	-	-	1	2	-	-

**Semester-VII**

**22CEPE22-Soil Structure Interaction**

Course Outcomes		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Understand various applications to soil structure interaction	1	2	2	3	3	-	-	-	-	1	-	-	3	-	-
2	Analyse the beam on Elastic Foundation	1	2	2	3	3	-	-	-	-	1	-	-	3	-	-
3	Analyse the plate on Elastic Foundation	1	2	2	3	3	-	-	-	-	1	-	-	3	-	-
4	Elastic analysis of pile group	1	2	2	3	3	-	-	-	-	1	-	-	3	-	-
5	Analyse the laterally loaded pile	1	2	2	3	3	-	-	-	-	1	-	-	3	-	-
<b>Average</b>		1	2	2	3	3	-	-	-	-	1	-	-	3	-	-

**Semester-VII**

**22CEPE23-Subsurface Investigation and Instrumentation**

		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Course Outcomes		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Plan the subsurface investigation program for a given project.	1	2	2	3	3	-	-	-	-	1	-	-	3	-	-
2	Predict an appropriate methods of Soil Exploration	1	2	2	3	3	-	-	-	-	1	-	-	3	-	-
3	Apply the knowledge of soil sampling techniques	1	2	2	3	3	-	-	-	-	1	-	-	3	-	-
4	Determine the soil parameter by conducting appropriate field testing	1	2	2	3	3	-	-	-	-	1	-	-	3	-	-
5	Summarise the instrumentation in the field of geotechnical engineering	1	2	2	3	3	-	-	-	-	1	-	-	3	-	-
<b>Average</b>		1	2	2	3	3	-	-	-	-	1	-	-	3	-	-

**Semester-VII****22CEPE24-Earth Retaining Structures**

<b>Course Outcomes</b>		<b>Program Outcomes</b>												<b>Program Specific Outcomes</b>		
		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>1</b>	<b>2</b>	<b>3</b>
1	Understand various Earth Pressure theories	2	2	2	2	-	-	1	-	-	1	-	-	3	1	-
2	Analysis the Stability of retaining structure	3	3	2	2	-	-	2	-	-	1	-	-	3	1	-
3	Analysis, design of sheet pile walls and anchor systems	3	3	2	2	-	-	2	-	-	1	-	-	3	1	-
4	Estimate the lateral pressure during supported excavation.	3	3	1	2	-	-	2	-	-	1	-	-	3	1	-
5	Analysis, design of slurry supported trenches	3	3	2	2	-	-	2	-	-	1	-	-	3	1	-
<b>Average</b>		2.8	2.8	2.8	2	-	-	2.8	-	-	1	-	-	3	1	-

**Semester-VII**

**22CEPE25-Rock Mechanics And Applications**

		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Course Outcomes		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Understand the various classification of rocks and its index properties.	1	2	1	1	-	-	1	-	-	-	-	-	3	-	-
2	Assess the various Behaviour of rocks and its Strength Criteria.	2	1	2	2	-	-	2	-	-	-	-	-	3	-	-
3	Evaluate the In Situ stresses in Rocks and the Design Aspects.	3	3	3	3	-	-	2	-	-	-	-	-	3	-	-
4	Analysis the stability of Rock Slopes and the remedial measures for critical slopes	3	3	2	3	-	-	2	-	-	-	-	-	3	-	-
5	Evaluate the Bearing capacity of foundations on rocks and illustrate the various techniques to improve the in situ strength of rocks.	3	3	3	3	-	-	2	-	-	-	-	-	3	-	-
<b>Average</b>		2.4	2.4	2.2	2.4	-	-	1.8	-	-	-	-	-	3	-	-



**Semester-VII**

**22CEPE26-Traffic Engineering and Management**

		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Course Outcomes		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Understand the principles and standards adopted in planning and design of traffic system	3	2	1	-	1	2	1	-	-	-	-	-	3	-	-
2	Apply the knowledge of science and engineering fundamentals in conducting traffic surveys	2	2	1	3	2	2	1	-	2	-	-	-	3	-	-
3	Understand the various control measures to design a safe traffic system.	2	2	3	1	3	3	2	-	-	-	-	-	3	-	-
4	Design various types of regulatory measures to meet an efficient traffic network.	2	2	3	1	3	2	2	-	-	-	-	-	3	-	-
5	Understand various traffic management measures in addressing the demand and ITS applications	2	2	1	1	2	3	-	-	-	-	2	-	3	-	-
<b>Average</b>		2.2	2	1.8	1.5	2.2	2.4	1.5	-	2	-	2	-	3	-	-

<b>Semester-VII</b>																
<b>22CEPE27-Airports, Docks and Harbours Engineering</b>																
		<b>Program Outcomes</b>												<b>Program Specific Outcomes</b>		
<b>Course Outcomes</b>		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>1</b>	<b>2</b>	<b>3</b>
1	Describe airport planning	3	-	2	2	-	2	3	-	1	-	1	3	3	-	1
2	Design of various Airport components	3	-	2	3	-	3	3	-	1	-	1	3	3	-	1
3	Get an overall knowledge about airport traffic control	3	-	2	2	-	3	3	-	1	-	1	3	3	-	1
4	Construct harbor	3	-	3	2	-	3	3	-	1	-	1	3	3	-	1
5	Protect the docks and coastal structures	-	-	-	2	-	1	1	-	1	-	2	2	2	-	2
<b>Average</b>		3	-	2.2	2.2	-	2.4	2.6	-	1	-	1.2	2.8	2.8	-	1.2

Semester-VII																
22CEPE28-Railway Engineering																
		Program Outcomes												Program Specific Outcomes		
Course Outcomes		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Carry out the surveys for railways	3	3	2	-	2	-	-	1	-	-	-	-	2	-	2
2	Understand the design elements in Railway Constructions	3	3	3	-	3	-	-	1	-	-	-	-	1	-	3
3	Understand the Construction techniques and Maintenance of Track laying and Railway stations.	-	-	-	2	3	1	-	-	-	-	-	2	1	-	1
4	Implement the railway operation	1	1	-	-	2	-	-	-	-	-	-	2	1	-	3
5	Apply the construction of metro infrastructure	-	-	-	2	2	2	-	2	-	-	-	2	2	-	3
<b>Average</b>		2.3	2.3	2.5	2	2.4	1.5	-	1.3	-	-	-	2	1.4	-	2.4

Semester-VII																
22CEPE29-Urban Planning & Development																
Course Outcomes		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Describe basic issues in urban planning	1	1	1	1	1	1	1	-	-	-	-	-	1	-	-
2	Formulate plans for urban and rural development	1	3	2	1	1	1	1	-	-	-	-	-	2	-	-
3	Plan and analyses socio economic aspects of urban and rural planning	1	1	2	2	2	1	1	-	-	-	-	-	2	-	-
4	Design the urban development projects	1	1	3	2	1	1	1	-	-	-	-	-	1	-	-
5	Manage the urban development projects.	1	1	3	2	1	1	1	-	-	-	-	-	1	-	-
<b>Average</b>		1	1.4	2.2	1.6	1.2	1	1	-	-	-	-	-	1.4	-	-

**Semester-VII**

**22CEPE30-Formwork For Concrete Structures**

		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Course Outcomes		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Select the types of formwork materials for different requirements	1	1	3	1	-	3	-	-	-	-	-	-	3	-	-
2	Know about the building of formwork for various structural elements	1	1	3	1	-	3	-	-	-	-	-	-	3	-	-
3	Explaining the formwork requirements for special structures	1	2	3	1	-	3	-	-	-	-	-	-	3	-	-
4	Justifying the requirements of slipform and its advantages	2	2	3	2	-	3	-	-	-	-	-	-	3	-	-
5	Planning the safety requirements in Formwork construction	2	1	3	2	-	3	-	-	-	-	-	-	3	-	-
<b>Average</b>		1.4	1.4	3	1.4	-	3	-	-	-	-	-	-	3	-	-

**Semester-VII**

**22CEPE31-Advanced Surveying Techniques**

		Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Course Outcomes		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	Understand the electronics basics relevant to digital surveying techniques	1	1	2	2	3	-	1	-	-	-	1	2	2	-	-
2	Experiment on data analysis and application of GIS	1	3	2	3	3	3	3	-	2	2	2	2	2	-	-
3	Employ the Total station and EDM for both field and office surveying	1	3	2	3	2	-	1	-	1	1	1	2	2	-	-
4	Understand the basic principles behind advanced surveying techniques	1	3	3	3	2	1	1	-	2	2	1	3	2	-	-
5	Employ the both GPS and DGPS for field surveying	1	3	3	3	2	1	1	-	2	2	1	3	2	-	-
<b>Average</b>		1	2.6	2.4	2.8	2.4	1.6	1.4	-	1.7	1.7	1.2	2.4	2	-	-