SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Introduction to Structural Engineering		
Course Code	CEL0101[T]		
Course Outcomes & Bloom's Level	**CO1-** Students will get knowledge of Basic Civil Engineering**(BL1-Remember)** **CO2-** To understand the Soil properties, Building elements, Integeration of Techniques**(BL2-Understand)** **CO3-** Students are able to apply knowledge of surveying in field**(BL3-Apply)** **CO4-** To Analyse the different Plannings of building**(BL4-Analyze)** **CO5-** To evaluate the behavior and Structural failure & constructional issues**(BL4-Analyze)** **CO6-** To Complete Determination of Layouts **(BL3-Apply)**		
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG11(Sustainable cities and economies)

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Basic Electronics	
Course Code	ECL0101[T]	
Course Outcomes & Bloom's Level	**CO1-** To become familiar with various types of semiconductors and basic electronic devices.**(BL1-Remember)** **CO2-** To understand the operation of various electronic devices.**(BL2-Understand)** **CO3-** To implement the concepts of semiconductors to various semiconductor devices.**(BL3-Apply)** **CO4-** To analyze the various electronic devices and their frequency response.**(BL4-Analyze)** **CO5-** To evaluate the performance of electronic devices such as diodes, transistors, function generators, and cathode ray oscilloscopes.**(BL5-Evaluate)**	
Course Elements	Skill Development ✓ Entrepreneurship ✕ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Communication Skills & Colloquim		
Course Code	HUL0101[T]		
Course Outcomes & Bloom's Level	**CO1-** Determine interpersonal skills and be an effective goal-oriented team player. **(BL1-Remember)** **CO2-** Classify and formulate the elementary intricacies of Scientific and Technical Writing using applicative grammar construct. **(BL2-Understand)** **CO3-** Create cohesive technical paragraphs & text. **(BL3-Apply)** **CO4-** Analyzing: Students will be able to analyze information learnt about communication to become a good communicator.**(BL4-Analyze)** **CO5-** Evaluating: Students will be able to Compare the usage between reading and writing skills and evaluate the importance of both the skills to make process of communication successful.**(BL5-Evaluate)**		
Course Elements	Skill Development ✓ Entrepreneurship ✕ Employability ✕ Professional Ethics ✕ Gender ✕ Human Values ✓ Environment ✕	**SDG (Goals)**	SDG1(No poverty) SDG10(Reduced inequalities)

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Calculus For Engineers	
Course Code	MAL0101[T]	
Course Outcomes & Bloom's Level	**CO1-** Knowledge about the derivative and use of derivative to expand the functions and evaluation of Maxima and Minima.**(BL1-Remember)** **CO2-** Knowledge about the vector valued function directional derivative, gradient, divergence and curl with their properties**(BL2-Understand)** **CO3-** Applying: Partial derivatives and its applications apply to evaluate the Maxima and Minima.**(BL3-Apply)** **CO4-** Find the area under a given curve, length of an arc through integration as application to Beta and Gamma Function.**(BL4-Analyze)** **CO5-** Evaluating: Find the area and volume by applying the techniques of double and triple integrals., **(BL5-Evaluate)** **CO6-** Applications of vector valued function in integration to find line , surface and volume.**(BL5-Evaluate)**	
Course Elements	Skill Development ✓ Entrepreneurship ✕ Employability ✕ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Engineering Mechanics		
Course Code	MEL0101[T]		
Course Outcomes & Bloom's Level	**CO1-** CO1 Remember the basics of sciences in effects of system of forces on rigid bodies in static and kinetic conditions**(BL1-Remember)** **CO2-** CO2 Understand the basics of sciences in effects of system of forces on rigid bodies in static and kinetic conditions.**(BL2-Understand)** **CO3-** CO3 Apply system of forces in the belts drive systems as power transmission devices, shafts and beams.**(BL3-Apply)** **CO4-** CO4 Analyze the beams and trusses with centre of mass and moment of inertia. **(BL4-Analyze)** **CO5-** CO5 Evaluate shear force and bending moment in designing of shafts and beams and trusses.**(BL5-Evaluate)**		
Course Elements	Skill Development ✓ Entrepreneurship ✕ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG9(Industry Innovation and Infrastructure)

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Mechanical Workshop Practice		
Course Code	MEP0101[P]		
Course Outcomes & Bloom's Level	**CO1-** To remember basics of physics.**(BL1-Remember)** **CO2-** To understand the tool materials and their proper applications.**(BL2-Understand)** **CO3-** To prepare and manufacture the various joints using carpentry and fitting shop tools and welding process.**(BL3-Apply)** **CO4-** To analyze casting and welding products.**(BL4-Analyze)** **CO5-** To evaluate the casting process parameters and welding parameters for efficient productivity.**(BL5-Evaluate)**		
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG9(Industry Innovation and Infrastructure)

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Structural Materials		
Course Code	CEL0233[T]		
Course Outcomes & Bloom's Level	**CO1-** Students will get knowledge of Basic Structural Materials**(BL1-Remember)** **CO2-** To understand the materials use in Civil Engineering industry**(BL2-Understand)** **CO3-** Students are able to apply the details of Innovative Textures**(BL3-Apply)** **CO4-** To analyse different Admixtures & other adhesives**(BL4-Analyze)** **CO5-** To evaluate the behavior of different Structural materials in different purposes**(BL5-Evaluate)** **CO6-** To Create adequate type of Construction material **(BL6-Create)**		
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG9(Industry Innovation and Infrastructure) SDG11(Sustainable cities and economies)

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Essentials of Information Technology		
Course Code	CSL0201[T]		
Course Outcomes & Bloom's Level	**CO1-** Understand the basics of Computer systems like types, I/O devices, storage of computer systems (Knowledge, Understand)**(BL1-Remember)** **CO2-** Apply the various networking concepts, topologies and remove deadlocks. (Apply).**(BL2-Understand)** **CO3-** Explain various memory management techniques and Analyze the concept of Sub-programs and blocks (Analysis)**(BL3-Apply)** **CO4-** Design the concept of software, operating system for better utilization of external system (Design)**(BL4-Analyze)** **CO5-** Evaluating the various algorithm, its solution and other communication techniques. (Investigation).**(BL5-Evaluate)**		
Course Elements	Skill Development ✕ Entrepreneurship ✕ Employability ✕ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG1(No poverty) SDG2(Zero hunger) SDG4(Quality education) SDG8(Decent work and economic growth) SDG9(Industry Innovation and Infrastructure)

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Principles of Electrical Engineering	
Course Code	EEL0201[T]	
Course Outcomes & Bloom's Level	**CO1-** Predict the behavior of any electrical circuits, Formulate and solve complex DC circuits.**(BL1-Remember)** **CO2-** Predict the behavior of any electrical circuits, Formulate and solve complex single phase AC circuits.**(BL2-Understand)** **CO3-** Predict the behavior of any electrical circuits, Formulate and solve complex Three phase AC circuits.**(BL3-Apply)** **CO4-** Identify the type of electrical machine used for that particular application. Realize the requirement of transformers in transmission and distribution of electric power and other applications.**(BL4-Analyze)** **CO5-** Predict the behavior of various measuring instruments in electrical engineering**(BL5-Evaluate)**	
Course Elements	Skill Development ✓ Entrepreneurship ✕ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Statistics For Engineers		
Course Code	MAL0203[T]		
Course Outcomes & Bloom's Level	**CO1-** To remember basic concept of about the design data collection plans and basic tools of descriptive statistics.**(BL1-Remember)** **CO2-** To understand the identify relationship between two variables using scatter plot and Interpret a simple correlation. To understand the Knowledge about the different types of continuous distribution with their properties and applications.**(BL2-Understand)** **CO3-** To apply the test and make hypothesis by Student's t-test, F-test, chi-square test, Z test, goodness of fit.**(BL3-Apply)** **CO4-** To analyze the concept of sampling distribution of a statistic and its properties, difference between parameter and statistic.**(BL4-Analyze)** **CO5-** To evaluate and describe the properties of unbiasedness. Also identifying and provide an application the null hypothesis, alternative hypothesis and test statistic.**(BL5-Evaluate)**		
Course Elements	Skill Development ✓ Entrepreneurship ✕ Employability ✕ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG4(Quality education)

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Environmental Pollution and Global Issues		
Course Code	MCL0201[T]		
Course Outcomes & Bloom's Level	**CO1-** CO1. Develop environmental scientists and engineers and sensitize them towards environmental issues.**(BL2-Understand)** **CO2-** CO2. To acquire analytical skills in assessing environmental impacts through a multidisciplinary approach**(BL3-Apply)** **CO3-** CO3. Ability to distinguish between various methods of various pollution analysis**(BL4-Analyze)** **CO4-** CO4.Acquire expertise and skills needed for the Environmental Management Systems and techniques of monitoring, Environment audit, Environmental Impact Analysis, environment instrumentation and control systems and for the projects development, implementation, and maintenance.**(BL5-Evaluate)** **CO5-** CO5. Students acquire skills for to communicate, prepare, plan and implement the environmental management project**(BL6-Create)**		
Course Elements	Skill Development ✕ Entrepreneurship ✕ Employability ✕ Professional Ethics ✕ Gender ✕ Human Values ✓ Environment ✓	**SDG (Goals)**	SDG2(Zero hunger) SDG3(Good health and well-being) SDG5(Gender equality) SDG6(Clean water and sanitation) SDG7(Affordable and clean energy) SDG8(Decent work and economic growth) SDG10(Reduced inequalities) SDG11(Sustainable cities and economies) SDG12(Responsible consuption and production) SDG13(Climate action) SDG14(Life below water) SDG15(Life on land) SDG17(Partnerships for the goals)

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Making of Modern India		
Course Code	MCL0202[T]		
Course Outcomes & Bloom's Level	**CO1-** At the end of this course, students would be intellectually well equipped to have a sense of modern Indian history and culture. **(BL5-Evaluate)** **CO2-** The students will have an understanding of making of India as a nation**(BL2-Understand)** **CO3-** The students will have an understanding of salient features of modern India**(BL2-Understand)** **CO4-** It will help students to develop their personality and thinking horizon for being a good and concerned Indian Citizen **(BL3-Apply)**		
Course Elements	Skill Development ✕ Entrepreneurship ✕ Employability ✕ Professional Ethics ✕ Gender ✓ Human Values ✓ Environment ✕	**SDG (Goals)**	SDG4(Quality education) SDG5(Gender equality) SDG15(Life on land)

Course Articulation Matrix

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	0	1	1	0	1	1	1	2	2	1	1	1	1	1	1
CO2	0	1	2	1	0	1	1	1	1	1	0	1	2	1	1
CO3	0	1	2	1	0	1	1	1	1	1	0	1	2	1	1
CO4	0	0	1	1	1	2	2	2	2	1	1	2	2	2	2
CO5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Engineering Graphics		
Course Code	MEL0202[T]		
Course Outcomes & Bloom's Level	**CO1-** To get the fundamentals of engineering graphics, geometrical construction and its applications.**(BL1-Remember)** **CO2-** To understand the basic concept of engineering graphics through real-life examples. **(BL2-Understand)** **CO3-** To implement the different engineering graphics concepts over appropriate drawing dataset. **(BL3-Apply)** **CO4-** To analyze the drawing performance of engineering graphics techniques.**(BL4-Analyze)** **CO5-** To evaluate the drawing performance of engineering graphics techniques on a corresponding object.**(BL5-Evaluate)**		
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG9(Industry Innovation and Infrastructure)

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Programming Logics		
Course Code	CSP0201[P]		
Course Outcomes & Bloom's Level	**CO1-** Remember: Recall the syntax and basic concepts of C programming.**(BL1-Remember)** **CO2-** Understand: Explain the meaning of C programming constructs and how they work together**(BL2-Understand)** **CO3-** Apply : Apply the various conditional and looping statement and functional programming.**(BL3-Apply)** **CO4-** Analyzing: Analyze and evaluate C programming code to identify errors and optimize performance.**(BL4-Analyze)** **CO5-** Evaluate : Evaluate the effectiveness of C programming solutions and propose improvements.**(BL5-Evaluate)**		
Course Elements	Skill Development ✓ Entrepreneurship ✕ Employability ✕ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG8(Decent work and economic growth)

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Strength of Materials		
Course Code	CEL0302[T]		
Course Outcomes & Bloom's Level	**CO1-** Students will revise the concept of Mechanics and Forces **(BL1-Remember)** **CO2-** To understand the basic concept of analysis and design of members subjected to torsion also the analysis and design of structural elements such as columns and struts**(BL2-Understand)** **CO3-** Students are able to Take the Data Concerning strength of various structural elements**(BL3-Apply)** **CO4-** To suggest suitable material from among the available in the field of construction and manufacturing**(BL4-Analyze)** **CO5-** To evaluate the behavior and strength of structural elements under the action of compound stresses and thus understand failure concepts **(BL4-Analyze)** **CO6-** To Complete Determination of SFD, BMD and Deflection of Different Structural Elements**(BL4-Analyze)**		
Course Elements	Skill Development ✓ Entrepreneurship ✕ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG9(Industry Innovation and Infrastructure) SDG11(Sustainable cities and economies)

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Concrete Technology		
Course Code	CEL0303[T]		
Course Outcomes & Bloom's Level	**CO1-** To remember the various concepts in theory of Construction materials**(BL1-Remember)** **CO2-** To understand & analyze the different function of ingredients of concrete**(BL2-Understand)** **CO3-** To implement the different designing concrete mix design**(BL3-Apply)** **CO4-** To provide experimental basis, and to enable the students to analyze and test the concrete properties **(BL4-Analyze)** **CO5-** To evaluate the applications of different special types of concrete**(BL5-Evaluate)** **CO6-** To apply the understanding of destructive and non destructive testing of concrete**(BL3-Apply)**		
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG9(Industry Innovation and Infrastructure) SDG11(Sustainable cities and economies)

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Highway and Traffic Engineering		
Course Code	CEL0313[T]		
Course Outcomes & Bloom's Level	**CO1-** Students will be able to get Awareness about the road planning & Traffic problems of the country.**(BL1-Remember)** **CO2-** To introduce the knowledge of Highway Planning**(BL1-Remember)** **CO3-** Students are able to have knowledge of Highway Planning, Alignment, Construction & maintenance of roads**(BL2-Understand)** **CO4-** To knowledge of Traffic Jamming & its solutions on Highways & Minimize The numbers of road accidents**(BL2-Understand)** **CO5-** To design Highways**(BL3-Apply)** **CO6-** To be able to construct roads**(BL5-Evaluate)**		
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG1(No poverty) SDG2(Zero hunger) SDG3(Good health and well-being) SDG4(Quality education) SDG5(Gender equality) SDG6(Clean water and sanitation) SDG7(Affordable and clean energy) SDG8(Decent work and economic growth) SDG10(Reduced inequalities) SDG11(Sustainable cities and economies) SDG12(Responsible consuption and production) SDG13(Climate action) SDG14(Life below water) SDG15(Life on land) SDG17(Partnerships for the goals)

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Elementary design of structures (RCC)		
Course Code	CEL0331[T]		
Course Outcomes & Bloom's Level	**CO1-** Students will be able to get knowledge about Structural Members**(BL1-Remember)** **CO2-** To introduce the knowledge of Beams and Slab Designs**(BL2-Understand)** **CO3-** Students are able to understand yield Line theory of Slabs**(BL2-Understand)** **CO4-** To analyze the concept of Soft Storey**(BL4-Analyze)** **CO5-** To Apply Codal Provision in designing methods**(BL3-Apply)** **CO6-** To be able to create different basic elements of a building**(BL4-Analyze)**		
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG11(Sustainable cities and economies)

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Building Planning and Drawing		
Course Code	CEL0333[T]		
Course Outcomes & Bloom's Level	**CO1-** To Remember basic fundamentals of building Design**(BL1-Remember)** **CO2-** To Understand the concept of drawing basic elements of buildings**(BL2-Understand)** **CO3-** To Analyse different techniques for different views of building**(BL4-Analyze)** **CO4-** To apply knowledge of different plans on real life building strutures**(BL3-Apply)** **CO5-** To develop plans of superstructure and substructure details of a building**(BL5-Evaluate)**		
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG11(Sustainable cities and economies)

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Engineering Mathematics		
Course Code	MAL0308[T]		
Course Outcomes & Bloom's Level			
Course Elements	Skill Development ✓ Entrepreneurship ✕ Employability ✕ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG4(Quality education)

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Evaluation of Industrial Training -1	
Course Code	CED0301[P]	
Course Outcomes & Bloom's Level	**CO1-** Understand the 'real' working environment and get acquainted with the organization structure, business operations and administrative functions**(BL2-Understand)** **CO2-** To have hands-on experience in the students' related field so that they can relate and reinforce what has been taught at the university**(BL2-Understand)** **CO3-** To promote cooperation and to develop synergetic collaboration between industry and the university in promoting a knowledgeable society**(BL3-Apply)** **CO4-** Develop the confidence require for group living and sharing of responsibilities of acquire leader ship qualities and democratic attitudes. **(BL4-Analyze)** **CO5-** Develop the capacity to meet emergencies and natural disasters and practice national integration and social harmony**(BL5-Evaluate)**	
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✓ Environment ✕	**SDG (Goals)**

Course Articulation Matrix

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	0	1	0	2	1	3	2	3	2	0	2	1	1	2
CO2	2	1	0	0	2	1	2	3	3	2	1	2	2	1	1
CO3	2	1	0	0	2	1	3	3	2	2	0	2	2	2	1
CO4	2	0	1	0	2	0	3	2	2	2	0	2	1	2	1
CO5	2	1	0	0	2	1	3	3	3	2	0	2	2	1	1
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Strength of Materials	
Course Code	CEL0302[P]	
Course Outcomes & Bloom's Level		
Course Elements	Skill Development ✕ Entrepreneurship ✕ Employability ✕ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Building Planning and Drawing		
Course Code	CEL0333[P]		
Course Outcomes & Bloom's Level	**CO1-** To Remember basic fundamentals of building Design**(BL1-Remember)** **CO2-** To Understand the concept of drawing basic elements of buildings**(BL2-Understand)** **CO3-** To Analyse different techniques for different views of building**(BL4-Analyze)** **CO4-** To apply knowledge of different plans on real life building strutures**(BL3-Apply)** **CO5-** To develop plans of superstructure and substructure details of a building**(BL5-Evaluate)**		
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG11(Sustainable cities and economies)

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Fluid Mechanics		
Course Code	CEL0406[T]		
Course Outcomes & Bloom's Level	**CO1-** • CO1: To remember the various concepts of fluid mechanics**(BL1-Remember)** **CO2-** • CO2: To understand & analyze the different fluid flow problems.**(BL2-Understand)** **CO3-** • CO3: To implement the different designing concepts of fluid mechanics.**(BL3-Apply)** **CO4-** • CO4: To provide experimental basis ,and to enable the students to analyze the behaviour of various in fluids and its characterstics.**(BL4-Analyze)** **CO5-** • CO5: To evaluate the applications of fluids in various fields such as research&industries.**(BL4-Analyze)** **CO6-** • CO6: To apply the understanding of fluids in identifying the fluids and its different types.**(BL2-Understand)**		
Course Elements	Skill Development ✓ Entrepreneurship ✕ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG11(Sustainable cities and economies)

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Fundamentals of Surveying	
Course Code	CEL0407[T]	
Course Outcomes & Bloom's Level	**CO1-** • CO1:To remember the various concepts of surveying.**(BL1-Remember)** **CO2-** • CO2:To understand & analyze the horizontal vertical & inclined measurements. **(BL2-Understand)** **CO3-** • CO3:To implement the different instrumentation techniques.**(BL3-Apply)** **CO4-** • CO4: To provide experimental basis,and to enable the studentstoanalyzetheRLs of different levels.**(BL4-Analyze)** **CO5-** • CO5:To evaluate the land areas & volume of earth work.**(BL5-Evaluate)** **CO6-** • CO6: To apply the understand inglocation of of fininte points **(BL2-Understand)**	
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Fundamentals of Geotechnical Engineering		
Course Code	CEL0408[T]		
Course Outcomes & Bloom's Level	**CO1-** CO1: To remember the various concepts in theory of geotechnical engineering. **(BL1-Remember)** **CO2-** • CO2: To understand & analyze the different geotechnical engineering problems. **(BL2-Understand)** **CO3-** • CO3: To implement the shear strength parameters, consistency limits used in geotechnical engineering.**(BL3-Apply)** **CO4-** • CO4: To provide experimental basis, and to enable the students to suggest the type of shear tests to be conducted depending on soil conditions and the type of earth pressure depending on the wall conditions.**(BL2-Understand)** **CO5-** • CO5: To evaluate the stress distribution in soils and stability of slopes. **(BL5-Evaluate)** **CO6-** • CO6: To apply the understanding of index properties of soil, stress distribution and flow net in soil in solving problems of type of stresses in soil and compressibility and consolidation theories in soil. **(BL2-Understand)**		
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG11(Sustainable cities and economies)

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Basic Methods of Structural Analysis		
Course Code	CEL0409[T]		
Course Outcomes & Bloom's Level	**CO1-** • CO1: Toremembertheconcept of SFD and BMD.**(BL1-Remember)** **CO2-** • CO2:Tounderstand & analyze the Rolling Loads.**(BL2-Understand)** **CO3-** • CO3:To implement and analyze the different theorems on Beams **(BL4-Analyze)** **CO4-** • CO4:Toanalyze the sway portal frames**(BL4-Analyze)** **CO5-** • CO5:ToevaluatetheArches and their thrust conditions.**(BL5-Evaluate)** **CO6-** • CO6:Tocreate appropriate loading conditions for different complex and indeterminate structures**(BL2-Understand)**		
Course Elements	Skill Development ✓ Entrepreneurship ✕ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG11(Sustainable cities and economies)

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Elementary Design of Structures (Steel)		
Course Code	CEL0432[T]		
Course Outcomes & Bloom's Level	**CO1-** To remember basic types of loading and steel structures**(BL1-Remember)** **CO2-** To understand different types of connections in steel members**(BL2-Understand)** **CO3-** To implement the knowledge of IS Code for Structural Design of Steel members**(BL3-Apply)** **CO4-** To Design different members like flexural and compression**(BL2-Understand)** **CO5-** To evaluate the different loading conditions according to different connections**(BL2-Understand)** **CO6-** To Create a Structural member fir for Different Loading Conditions**(BL4-Analyze)**		
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG11(Sustainable cities and economies)

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	OOPM	
Course Code	CSP0401[P]	
Course Outcomes & Bloom's Level	**CO1-** To remember the basic programming concept**(BL1-Remember)** **CO2-** Understand the basics of Python like python origin downloading and installing and basic concept of python**(BL2-Understand)** **CO3-** Apply the various conditional and looping statement and functional programming. **(BL3-Apply)** **CO4-** Explain various objects numbers and sequence in python Analyze the concept of regular expression.**(BL4-Analyze)** **CO5-** Evaluate the concept of object-oriented programming for better utilization of language.**(BL5-Evaluate)**	
Course Elements	Skill Development ✓ Entrepreneurship ✕ Employability ✕ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Hydraulics & fluid machine		
Course Code	CEL0510[T]		
Course Outcomes & Bloom's Level	**CO1-** CO1: To remember the various concepts of fluid machines.**(BL1-Remember)** **CO2-** CO2: To understand & analyze the different fluid flow problems.**(BL2-Understand)** **CO3-** CO3: To implement the different designing concepts of fluid machines.**(BL3-Apply)** **CO4-** CO4: To provide experimental basis, and to enable the students to analyze the working of various machines and its different components.**(BL4-Analyze)** **CO5-** CO5: To evaluate the applications of fluids in various fields such as research & industries.**(BL5-Evaluate)** **CO6-** CO6: To apply the understanding of fluids in identifying the fluids and its different types.**(BL3-Apply)**		
Course Elements	Skill Development ✓ Entrepreneurship ✕ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG11(Sustainable cities and economies)

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Advanced Surveying	
Course Code	CEL0511[T]	
Course Outcomes & Bloom's Level	**CO1-** CO1: Students will revise the concept of Surveying with its Principles.**(BL1-Remember)** **CO2-** CO2: Students are able to understand the surveying with advance instrument like remote sensing, GPS and GIS, hydrographic survey and Arial Photogrammetry.**(BL2-Understand)** **CO3-** CO3: Students are able to Take the Data concerning different types of Surveying Instruments.**(BL3-Apply)** **CO4-** CO4:To analyze Indeterminate structures and towers according to dynamic loading**(BL4-Analyze)** **CO5-** CO5: Students will be able to Process the GIS and GPS and Hydrographic Data and evaluate the Different Dimensions of Image projections**(BL5-Evaluate)**	
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Fundamentals of Structural design(RCC)	
Course Code	CEL0512[T]	
Course Outcomes & Bloom's Level	**CO1-** • CO1: To remember the various concepts in theory of Rcc structures**(BL1-Remember)** **CO2-** • CO2: To understand & analyze the different Rcc components along with the guidelines of Indian Standard Code IS 456-2000.**(BL3-Apply)** **CO3-** • CO3: To implement the different designing concepts of Rcc.**(BL3-Apply)** **CO4-** • CO4: To provide experimental basis, and to enable the students to analyze the behaviour of various Rcc structures and its Functional properties**(BL2-Understand)** **CO5-** • CO5: To evaluate the applications of different Rcc structural members in various fields such as research & industries.**(BL3-Apply)** **CO6-** • CO6: To apply the understanding of different Rcc problems in identifying the quality of Rcc and its different types**(BL3-Apply)**	
Course Elements	Skill Development ✓ Entrepreneurship ✕ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Advanced Methods of Structural Analysis	
Course Code	CEL0514[T]	
Course Outcomes & Bloom's Level	**CO1-** • CO1:Students will revise the concept of Conventional Methods of analysis of Determinate Structures**(BL2-Understand)** **CO2-** • CO2:To make the student familiar with latest computational techniques used for structural analysis.**(BL4-Analyze)** **CO3-** • CO3:Students are able to apply these methods for analyzing the indeterminate structures to evaluate the response of structures**(BL3-Apply)** **CO4-** • CO4:To analyze Indeterminate structures and towers according to dynamic loading**(BL4-Analyze)** **CO5-** • CO5:Students will be able to determine response of structures by classical, iterative and matrix methods**(BL5-Evaluate)**	
Course Elements	Skill Development ✓ Entrepreneurship ✕ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Advanced Geotech Engineering		
Course Code	CEL0515[T]		
Course Outcomes & Bloom's Level	**CO1-** CO1: Students will revise the concept of mechanics of soil.**(BL2-Understand)** **CO2-** CO2: Students are able to understand the concept of excavation and different types of foundations.**(BL2-Understand)** **CO3-** CO3: Students are able to apply the knowledge of different foundations for construction practices.**(BL3-Apply)** **CO4-** CO4: To analyze different theories of bearing capacities and settlements regarding structures.**(BL4-Analyze)** **CO5-** CO5: Students will be able to conduct several tests and evaluate different parameters of foundation**(BL6-Create)** **CO6-** CO6: To complete foundation work at a construction site.**(BL6-Create)**		
Course Elements	Skill Development ✓ Entrepreneurship ✕ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG11(Sustainable cities and economies)

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Industrial Training		
Course Code	CED0501[P]		
Course Outcomes & Bloom's Level	**CO1-** Understand the 'real' working environment and get acquainted with the organization structure, business operations and administrative functions**(BL2-Understand)** **CO2-** To have hands-on experience in the students' related field so that they can relate and reinforce what has been taught at the university**(BL2-Understand)** **CO3-** To promote cooperation and to develop synergetic collaboration between industry and the university in promoting a knowledgeable society**(BL3-Apply)** **CO4-** Develop the confidence require for group living and sharing of responsibilities of acquire leader ship qualities and democratic attitudes. **(BL4-Analyze)** **CO5-** Develop the capacity to meet emergencies and natural disasters and practice national integration and social harmony**(BL5-Evaluate)**		
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✓ Environment ✕	**SDG (Goals)**	SDG11(Sustainable cities and economies)

Course Articulation Matrix

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	0	1	0	2	1	3	2	3	2	0	2	1	1	2
CO2	2	1	0	0	2	1	2	3	3	2	1	2	2	1	1
CO3	2	1	0	0	2	1	3	3	2	2	0	2	2	2	1
CO4	2	0	1	0	2	0	3	2	2	2	0	2	1	2	1
CO5	2	1	0	0	2	1	3	3	3	2	0	2	2	1	1
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Basic of Structural Design (Steel)	
Course Code	CEL0617[T]	
Course Outcomes & Bloom's Level	**CO1-** To remember the various concepts in theory of steel structures**(BL1-Remember)** **CO2-** To understand & analyze the different steel structures problems.**(BL2-Understand)** **CO3-** To implement the different designing concepts of steel structures**(BL3-Apply)** **CO4-** To provide experimental basis, and to enable the students to analyze the behaviour of various steel structures and its properties.**(BL4-Analyze)** **CO5-** To evaluate the applications of different steel structural members in various fields such as research & industries.**(BL5-Evaluate)** **CO6-** To apply the understanding of steel structure problems in identifying the quality of steel and its different types.**(BL6-Create)**	
Course Elements	Skill Development ✓ Entrepreneurship ✕ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Advanced Structural Design (RCC)	
Course Code	CEL0619[T]	
Course Outcomes & Bloom's Level	**CO1-** Toremember the various concepts Steel Design.**(BL1-Remember)** **CO2-** To understand the concept of design of Multi-Storey Buildings.**(BL2-Understand)** **CO3-** To implement the different designing concepts retaining of earth work with retaining walls.**(BL3-Apply)** **CO4-** To provide different types of structural elements as per the requirement of structure**(BL3-Apply)** **CO5-** To design the silos and bunkers**(BL5-Evaluate)** **CO6-** To Create different RCC Complex structures with designing**(BL4-Analyze)**	
Course Elements	Skill Development ✓ Entrepreneurship ✕ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Quantity Surveying & Costing	
Course Code	CEL0621[T]	
Course Outcomes & Bloom's Level	**CO1-** To remember the various concepts in theory of Specification**(BL1-Remember)** **CO2-** To understand & analyze the different Quantity Estimates**(BL4-Analyze)** **CO3-** : To implement the different designing concepts of Quantity Estimation.**(BL5-Evaluate)** **CO4-** To provide experimental basis, and to enable the students to analyze the quantity and cost estimates.**(BL3-Apply)** **CO5-** To evaluate the applications of different Estimation and Costing in various fields such as research & industries.**(BL3-Apply)** **CO6-** : To apply the understanding of Rate Analysis in solving problem of Estimation**(BL2-Understand)**	
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Environmental Engineering		
Course Code	CEL0634[T]		
Course Outcomes & Bloom's Level	**CO1-** To remember the various concepts in theory of sources of water.**(BL1-Remember)** **CO2-** To understand & analyze the concept of population forecasting**(BL2-Understand)** **CO3-** To provide experimental basis, and to enable the students to analyze physical, chemical and biological impurities**(BL4-Analyze)** **CO4-** To evaluate the applications of rain water harvesting**(BL5-Evaluate)** **CO5-** To apply the understanding of water treatment**(BL3-Apply)**		
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✓	**SDG (Goals)**	SDG6(Clean water and sanitation) SDG7(Affordable and clean energy) SDG11(Sustainable cities and economies)

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Minor Project		
Course Code	CED0601[P]		
Course Outcomes & Bloom's Level	**CO1-** To enhance writing skills and knowledge.**(BL2-Understand)** **CO2-** To increase their mental ability.**(BL3-Apply)** **CO3-** To inculcate the ability to express innovative opinion and thoughts**(BL4-Analyze)** **CO4-** To have Dissertation works as skills development in students.**(BL5-Evaluate)**		
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG11(Sustainable cities and economies)

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Water Resource & Irrigation Engineering		
Course Code	CEE0601[T]		
Course Outcomes & Bloom's Level	**CO1-** To remember the various concepts in theory of irrigation engg.**(BL1-Remember)** **CO2-** To understand & analyze the different irrigation engg problems.**(BL2-Understand)** **CO3-** To implement the different designing concepts of canal and well structures.**(BL3-Apply)** **CO4-** To provide experimental basis, and to enable the students to analyze the flood prediction.**(BL4-Analyze)** **CO5-** To evaluate the applications of different irrigation engg in various fields such as research & industries.**(BL5-Evaluate)**		
Course Elements	Skill Development ✓ Entrepreneurship ✕ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG11(Sustainable cities and economies)

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Geo-synthetics and Reinforced Soil Structures		
Course Code	CEE0602[T]		
Course Outcomes & Bloom's Level	**CO1-** Identify the type of Geosynthetic and their relevance**(BL2-Understand)** **CO2-** Analyze &compute different properties of Geosynthetics**(BL4-Analyze)** **CO3-** Understand the emerging trends of Geosynthetic in geotechnical applications**(BL2-Understand)** **CO4-** Design the Reinforced Earth Walls using Geosynthetic material**(BL5-Evaluate)** **CO5-** Design the Reinforced Foundation using Geosynthetic materials**(BL5-Evaluate)**		
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG9(Industry Innovation and Infrastructure) SDG11(Sustainable cities and economies)

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Introduction to Finite Element Analysis		
Course Code	CEE0603[T]		
Course Outcomes & Bloom's Level	**CO1-** Understand the fundamental concepts of finite element method to solve engineering problems**(BL2-Understand)** **CO2-** Formulate finite element models using appropriate element selection, development ofstiffness & force matrices, and application of boundary conditions**(BL3-Apply)** **CO3-** Solve structural, thermal, and dynamic problems using the developed finite element formulations**(BL4-Analyze)** **CO4-** Demonstrate the ability to create models for structural, thermal, and fluid flow applications using commercial finite element packages**(BL3-Apply)** **CO5-** Interpret the analysis results to improve product and system design**(BL4-Analyze)**		
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG9(Industry Innovation and Infrastructure) SDG11(Sustainable cities and economies)

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Smart Cities		
Course Code	CEE0604[T]		
Course Outcomes & Bloom's Level	**CO1-** Students will Acquaint knowledge on smart cities planning and development**(BL2-Understand)** **CO2-** Develop work break down structure, scheduling and project management of smart cities**(BL3-Apply)** **CO3-** Work out the most energy efficient technique for development of Smart Cities**(BL4-Analyze)** **CO4-** To understand the importance of different smart system**(BL2-Understand)** **CO5-** To understand latest technologies used in intelligent building**(BL2-Understand)**		
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG9(Industry Innovation and Infrastructure) SDG11(Sustainable cities and economies)

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Advanced Structural Design(Steel)	
Course Code	CEL0723[T]	
Course Outcomes & Bloom's Level	**CO1-** CO1: Students will revise the concept of Steel Design.**(BL1-Remember)** **CO2-** CO2:Students are able to understand the concept Plate Girders**(BL2-Understand)** **CO3-** CO3:Students are able to apply the knowledge of different types of truss loading**(BL3-Apply)** **CO4-** CO4:To analyze different loadings on Bunkers and Silos**(BL4-Analyze)** **CO5-** CO5: Students will be able to design several complex steel structures**(BL5-Evaluate)** **CO6-** CO6:To complete Design of Water Tank.**(BL4-Analyze)**	
Course Elements	Skill Development ✓ Entrepreneurship ✕ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Introduction to Construction Planning and Management	
Course Code	CEL0725[T]	
Course Outcomes & Bloom's Level	**CO1-** Students will get knowledge different management techniques for construction. **(BL1-Remember)** **CO2-** To understand the resource of contract management**(BL2-Understand)** **CO3-** Students are able to Take the details of contracts & Tenders.**(BL3-Apply)** **CO4-** To adopt knowledge in construction & project management.**(BL4-Analyze)** **CO5-** To evaluate the behavior and strength of structural elements under the action of compound stresses and thus understand failure concepts**(BL5-Evaluate)** **CO6-** To Complete Determination of Organisational behaviour**(BL6-Create)**	
Course Elements	Skill Development ✓ Entrepreneurship ✕ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Railway Engineering		
Course Code	CEL0731[T]		
Course Outcomes & Bloom's Level	**CO1-** Students will be able to distinguish different components of Railway Track, different Railway Gauges**(BL1-Remember)** **CO2-** Students will be able to Design track Gradients as per given requirements**(BL4-Analyze)** **CO3-** Students will be able to discuss various Types of Track Turnouts**(BL2-Understand)** **CO4-** Students will be able to describe purposes and facilities at Railway Stations**(BL3-Apply)** **CO5-** Students will be able to Explain Interlocking and modern signal system**(BL3-Apply)** **CO6-** Students will be able to Describe Surface Defects on Railway Track and Their Remedial Measures**(BL2-Understand)**		
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG11(Sustainable cities and economies)

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Industrial training		
Course Code	CED0702[P]		
Course Outcomes & Bloom's Level	**CO1-** Understand the 'real' working environment and get acquainted with the organization structure, business operations and administrative functions**(BL2-Understand)** **CO2-** To have hands-on experience in the students' related field so that they can relate and reinforce what has been taught at the university**(BL2-Understand)** **CO3-** To promote cooperation and to develop synergetic collaboration between industry and the university in promoting a knowledgeable society**(BL3-Apply)** **CO4-** Develop the confidence require for group living and sharing of responsibilities of acquire leader ship qualities and democratic attitudes. **(BL4-Analyze)** **CO5-** Develop the capacity to meet emergencies and natural disasters and practice national integration and social harmony**(BL5-Evaluate)**		
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✓ Environment ✕	**SDG (Goals)**	SDG11(Sustainable cities and economies)

Course Articulation Matrix

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	0	1	0	2	1	3	2	3	2	0	2	1	1	2
CO2	2	1	0	0	2	1	2	3	3	2	1	2	2	1	1
CO3	2	1	0	0	2	1	3	3	2	2	0	2	2	2	1
CO4	2	0	1	0	2	0	3	2	2	2	0	2	1	2	1
CO5	2	1	0	0	3	2	3	3	3	2	1	2	2	2	2
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Major Project (Planning and Literature Survey)		
Course Code	CED0703[P]		
Course Outcomes & Bloom's Level	**CO1-** To enhance writing skills and knowledge.**(BL2-Understand)** **CO2-** To increase their mental ability.**(BL3-Apply)** **CO3-** To inculcate the ability to express innovative opinion and thoughts**(BL4-Analyze)** **CO4-** To have Dissertation works as skills development in students.**(BL5-Evaluate)**		
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG11(Sustainable cities and economies)

Course Articulation Matrix

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	0	0	0	2	1	3	3	3	2	0	2	1	1	2
CO2	2	0	1	0	1	0	2	2	3	2	0	2	2	2	1
CO3	1	1	0	0	2	1	3	3	3	2	0	1	1	1	1
CO4	2	1	1	0	1	1	3	2	2	2	0	2	1	1	2
CO5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Seismic analysis of structures		
Course Code	CEE0704[T]		
Course Outcomes & Bloom's Level	**CO1-** To remember the various concepts in theory of seismic structures.**(BL1-Remember)** **CO2-** : To understand & analyze the concept of soft storeys**(BL2-Understand)** **CO3-** To implement the different designing earthquake resistant structures**(BL3-Apply)** **CO4-** : To provide experimental basis, and to enable the students to analyze and test equivalent lateral force method**(BL4-Analyze)** **CO5-** To evaluate the applications of dynamic analysis**(BL5-Evaluate)** **CO6-** : To apply the understanding of retrofitting techniques**(BL6-Create)**		
Course Elements	Skill Development ✓ Entrepreneurship ✕ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG9(Industry Innovation and Infrastructure) SDG11(Sustainable cities and economies)

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Fundamentals of Remote Sensing & GIS		
Course Code	CEE0705[T]		
Course Outcomes & Bloom's Level	**CO1-** Observe, Identify and define simple/ complex problems of day to day lives present in Industry/ Society where GIS and Remote Sensing applications can be useful**(BL1-Remember)** **CO2-** Apply knowledge of basic image interpretation and data image processing.**(BL2-Understand)** **CO3-** Integrate the existing data through various observations from various angles and layer creation**(BL3-Apply)** **CO4-** Apply problem-solving methodologies to generate, evaluate and justify innovative solutions by designing and conducting/ analyzing and interpreting the data**(BL4-Analyze)** **CO5-** Demonstrate the ability to give solutions with an ability which can help communicate effectively for giving betterinterpretation and solutions**(BL5-Evaluate)**		
Course Elements	Skill Development ✓ Entrepreneurship ✕ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG9(Industry Innovation and Infrastructure) SDG11(Sustainable cities and economies)

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Fluid Dynamics		
Course Code	CEE0706[T]		
Course Outcomes & Bloom's Level	**CO1-** Students will revise the concepts of fluid properties**(BL1-Remember)** **CO2-** Students will understand the concept of fluid kinematics**(BL2-Understand)** **CO3-** Students will analyse the type of boundary layer flows**(BL3-Apply)** **CO4-** Students will be able to apply the fluid concepts for hydraulic structures**(BL4-Analyze)** **CO5-** Students will be able to evaluate different flow conditions with different defined equations**(BL5-Evaluate)**		
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG9(Industry Innovation and Infrastructure) SDG11(Sustainable cities and economies)

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Sustainable Construction Methods		
Course Code	CEE0708[T]		
Course Outcomes & Bloom's Level	**CO1-** Student will be able to Classify the sustainable construction materials**(BL1-Remember)** **CO2-** Student will be able to Apply cutting-edge construction technologies**(BL2-Understand)** **CO3-** Student will be able to Evaluate different sustainable construction methods**(BL3-Apply)** **CO4-** Student will be able to Apply different rating systems of construction/buildings as a professional**(BL4-Analyze)** **CO5-** Student will be able to Apply life cycle approach to optimize the performance of green construction materials **(BL5-Evaluate)**		
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✓	**SDG (Goals)**	SDG11(Sustainable cities and economies)

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Advanced Foundation Engineering	
Course Code	CEE0702[T]	
Course Outcomes & Bloom's Level	**CO1-** Students will revise the concept of Exploration of soil.**(BL1-Remember)** **CO2-** Students are able to understand the concept of excavation and different types of foundations.**(BL2-Understand)** **CO3-** Students are able to apply the knowledge of different foundations for construction practices.**(BL3-Apply)** **CO4-** To analyze different theories of bearing capacities and settlements regarding structures.**(BL4-Analyze)** **CO5-** Students will be able to conduct several tests and evaluate different parameters of foundation**(BL5-Evaluate)** **CO6-** To complete foundation work at a construction site.**()**	
Course Elements	Skill Development ✓ Entrepreneurship ✕ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	MATRIX ANALYSIS OF STRUCTURES		
Course Code	CEE0701[T]		
Course Outcomes & Bloom's Level	**CO1-** Students will understand the concept of Axial Force Elements**(BL1-Remember)** **CO2-** Students will learn about the Stress and Strain work energy **(BL2-Understand)** **CO3-** Students will be able to analyse Shape Functions for different elements**(BL3-Apply)** **CO4-** Students will be able to apply the matrix analysis on 2D and 3D frames and Trusses**(BL4-Analyze)** **CO5-** Students will be able to understand Buckling Analysis for linear and non linear elements**(BL5-Evaluate)**		
Course Elements	Skill Development ✓ Entrepreneurship ✕ Employability ✕ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG11(Sustainable cities and economies)

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Pavement Design		
Course Code	CEE0703[T]		
Course Outcomes & Bloom's Level	**CO1-** Systematically generate and compile required data's for design of pavement (Highway & Airfield)**(BL1-Remember)** **CO2-** Analyze stress, strain and deflection by boussinesq's, bur mister's and westergaard's theory**(BL2-Understand)** **CO3-** Design rigid pavement and flexible pavement conforming to IRC58-2002 and IRC37-2001.**(BL3-Apply)** **CO4-** Evaluate the performance of the pavement and also develops maintenance statement based on site specific requirements**(BL4-Analyze)** **CO5-** Understand the various causes leading to failure of pavement and remedies for the same**(BL5-Evaluate)**		
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG9(Industry Innovation and Infrastructure) SDG11(Sustainable cities and economies)

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Wastewater Treatment and Recycling		
Course Code	CEE0707[T]		
Course Outcomes & Bloom's Level	**CO1-** Integrated waste management issues, collection, recovery, reuse, recycling, energy-from-waste, and landfilling**(BL1-Remember)** **CO2-** Analyze & compute the challenges of waste management for smart cities**(BL2-Understand)** **CO3-** Understand the C&D Waste and E-Waste Management**(BL3-Apply)** **CO4-** Design the generation rates and waste composition material**(BL4-Analyze)** **CO5-** Perform the role of MSW management within the various initiatives of the Govt. of India including: Swachh Bharat Mission, Smart Cities as well as Make in India**(BL5-Evaluate)**		
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✓	**SDG (Goals)**	SDG4(Quality education) SDG6(Clean water and sanitation) SDG9(Industry Innovation and Infrastructure) SDG11(Sustainable cities and economies)

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Design of Hydraulic Structures		
Course Code	CEL0827[T]		
Course Outcomes & Bloom's Level	**CO1-** To remember the various concepts in theory of Dams**(BL1-Remember)** **CO2-** To understand & analyze the different Hydraulic strutures**(BL2-Understand)** **CO3-** To implement the different designing concepts of Spillways**(BL3-Apply)** **CO4-** To provide experimental basis, and to enable the students to analyze the design of gravity dams**(BL4-Analyze)** **CO5-** To evaluate the applications of different Energy dissipators in various fields such as research & industries**(BL5-Evaluate)** **CO6-** To apply the understanding of Hydel power plant in solving problem of electricity**()**		
Course Elements	Skill Development ✓ Entrepreneurship ✕ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG9(Industry Innovation and Infrastructure) SDG11(Sustainable cities and economies)

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Retrofitting and rehabilitation of structures		
Course Code	CEL0831[T]		
Course Outcomes & Bloom's Level	**CO1-** Students will be able to learn various distress and damages to concrete and masonry structures**(BL1-Remember)** **CO2-** To understand the importance of maintenance of structures**(BL2-Understand)** **CO3-** To study the various types and properties of repair materials**(BL3-Apply)** **CO4-** To asses the damage to structures using various tests **(BL4-Analyze)** **CO5-** To learn the importance and methods of substrate preparation**(BL5-Evaluate)** **CO6-** To learn various repair techniques of damaged structures, corroded structures **()**		
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics ✗ Gender ✗ Human Values ✗ Environment ✓	**SDG (Goals)**	SDG11(Sustainable cities and economies)

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Major Project		
Course Code	CED0804[P]		
Course Outcomes & Bloom's Level	**CO1-** To enhance writing skills and knowledge.**(BL1-Remember)** **CO2-** To increase their mental ability.**(BL2-Understand)** **CO3-** To inculcate the ability to express innovative opinion and thoughts**(BL3-Apply)** **CO4-** To have Dissertation works as skills development in students.**(BL4-Analyze)**		
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG11(Sustainable cities and economies)

Course Articulation Matrix

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	0	0	0	2	1	3	3	3	2	0	2	1	1	2
CO2	2	0	1	0	1	0	2	2	3	2	0	2	2	2	1
CO3	1	1	0	0	1	2	3	3	3	2	0	1	1	1	1
CO4	2	1	1	0	1	1	3	2	2	2	0	2	1	1	2
CO5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Traffic Engineering	
Course Code	CEE0810[T]	
Course Outcomes & Bloom's Level	**CO1-** To remember the various concepts in traffic engineering.**(BL1-Remember)** **CO2-** To understand & analyze the traffic engineering problems**(BL2-Understand)** **CO3-** To implement car-following models, queuing theories, and design of traffic signals in traffic engineering.**(BL3-Apply)** **CO4-** To provide experimental basis, and to enable the students to suggest the car-following theory and traffic control measures that will best suit the Indian traffic condition.**(BL4-Analyze)** **CO5-** To evaluate the vehicle, highway and traffic factors that influences the movement of vehicles and design of traffic control measures**(BL5-Evaluate)**	
Course Elements	Skill Development ✓ Entrepreneurship ✕ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Energy Efficient and Green Building		
Course Code	CEE0811[T}		
Course Outcomes & Bloom's Level	**CO1-** Understand the concept of Green Buildings**(BL1-Remember)** **CO2-** Analyze & compute the energy flow in buildings**(BL2-Understand)** **CO3-** Understand the energy efficient buildings**(BL3-Apply)** **CO4-** Design the building as per LEED India Rating System**(BL4-Analyze)** **CO5-** Design an Eco-friendly captive power generation**(BL5-Evaluate)**		
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics ✗ Gender ✗ Human Values ✗ Environment ✓	**SDG (Goals)**	SDG9(Industry Innovation and Infrastructure) SDG11(Sustainable cities and economies)

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Airport Engineering		
Course Code	CEE0812[T]		
Course Outcomes & Bloom's Level	**CO1-** Describe the different components of airport and aircrafts**(BL1-Remember)** **CO2-** Analyse the requirements of an airport layout with respect to international regulations**(BL2-Understand)** **CO3-** Explain the airport runway design**(BL3-Apply)** **CO4-** Design Taxiways & Aprons.**(BL4-Analyze)** **CO5-** Summarise the concepts of the terminal service facilities**(BL5-Evaluate)**		
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✓	**SDG (Goals)**	SDG9(Industry Innovation and Infrastructure) SDG11(Sustainable cities and economies)

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Urban Transportation Planning		
Course Code	CEE0814[T]		
Course Outcomes & Bloom's Level	**CO1-** Students will be able to Understand the basic concepts of planning at urban and regional levels**(BL1-Remember)** **CO2-** Students will be able to Distinguish between the Conventional and current approaches for travel demand estimation**(BL2-Understand)** **CO3-** Students will be able to Implement various types of models and trip generation**(BL3-Apply)** **CO4-** Students will be able to Analyze the urban travel markets**(BL4-Analyze)** **CO5-** Students will be able to Evaluate the transport planning proposals**(BL5-Evaluate)**		
Course Elements	Skill Development ✓ Entrepreneurship ✕ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✓	**SDG (Goals)**	SDG8(Decent work and economic growth) SDG11(Sustainable cities and economies)

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Design of Pre stressed Concrete Structure	
Course Code	CEE0809[T]	
Course Outcomes & Bloom's Level	**CO1-** Students will remember the WSM Method for RCC and Pre-stressed Structures. **(BL1-Remember)** **CO2-** To understand different types and Methods of Pre-stressing.**(BL2-Understand)** **CO3-** Students will be able to apply the knowledge of Pre-stressing on different RCC Structures.**(BL3-Apply)** **CO4-** To analyze Beam for different Profiles of Tendons.**(BL4-Analyze)** **CO5-** To evaluate the stress distribution for different zones of beams**(BL5-Evaluate)** **CO6-** To Create and design a Pre-stressed beam and understand its advantages over RCC**()**	
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Plastic design of steel structure		
Course Code	CEE0807[T]		
Course Outcomes & Bloom's Level	**CO1-** Learn Introduction and basic hypothesis, Virtual work in the elastic-plastic state**(BL1-Remember)** **CO2-** Learn Method of Limit Analysis, applicable to beams basic theorems of limit analysis, rectangular portal frames, gable frames, grids**(BL2-Understand)** **CO3-** Learn Limit design Principles, and method of combining**(BL3-Apply)** **CO4-** Calculate of Deflection in Plastic beams and frames.**(BL4-Analyze)** **CO5-** Learn Minimum weight Design**(BL5-Evaluate)**		
Course Elements	Skill Development ✓ Entrepreneurship ✕ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG9(Industry Innovation and Infrastructure) SDG11(Sustainable cities and economies)

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Building Environment & Services		
Course Code	CEE0808[T]		
Course Outcomes & Bloom's Level	**CO1-** Students will learn the importance of durability of civil engineering structures**(BL1-Remember)** **CO2-** Students will be able to detect the defects in foundation, masonry, plastering, Painting, flooring, doors and windows**(BL2-Understand)** **CO3-** Students will be able to provide preventive and remedial measures for Defects**(BL3-Apply)** **CO4-** Students will be able to locate and place different components like Lifts, electrical panels etc.**(BL4-Analyze)** **CO5-** Students will learn the importance of Need for retrofitting and restoration **(BL5-Evaluate)**		
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✓	**SDG (Goals)**	SDG9(Industry Innovation and Infrastructure) SDG11(Sustainable cities and economies)

Course Articulation Matrix

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

SOET-BTech(CivilEngineering)

Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Solid Waste Management		
Course Code	CEE0813[T]		
Course Outcomes & Bloom's Level	**CO1-** Students will Understand the concept of solid waste management**(BL1-Remember)** **CO2-** Students will be able to explain handling and processing of solid waste**(BL2-Understand)** **CO3-** Students will be able to apply the concept of landfilling for disposal of solid waste**(BL3-Apply)** **CO4-** Students will be able to design composting and other solid waste conversion units**(BL4-Analyze)** **CO5-** Students will understand the various hazardous waste, risk assessment and legislation **(BL5-Evaluate)**		
Course Elements	Skill Development ✓ Entrepreneurship ✕ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✓	**SDG (Goals)**	SDG6(Clean water and sanitation) SDG11(Sustainable cities and economies)

Course Articulation Matrix

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