Bachelor of Technology in Civil

Program Name **Engineering**

Course Name Mathematics I

Course Code MA3102

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to learn the basic principles of multi-variable calculus with their proofs. They should be able to classify partial differential equations and transform them into canonical form. They will also understand how to extract information from partial derivative models in order to interpret reality	2	Emp
CO2	Students should be able to understand and learn how to find the area and volume of any region and solid body respectively by integral and also find the moments of inertia for a thin plate in plane	2	Emp, S
CO3	Students should be able to understand theorems related to directional derivative of gradient and reproduce its proof. They should be able to Explain the concept of a vector integration in a plane and in space.	2	s
CO4	Students should be able to know basic application problems described by second order linear differential equations with constant coefficients. They should be also able to understand and solve the applications associated with Laplace Transform.	2	S
CO5	Students should be able to solve the linear equations using matrix properties and Determine characteristic equation, Eigen values, eigenvectors and diagonalizable of a matrix.	1	None

Course Name **Human Values and Ethics**

Course Code **PS3101**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Ent)/ None (Use , for more than

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CO1	Students should be able to understand the significance of value inputs in a classroom, distinguish between values and skills, understand the need, basic guidelines, content and process of value education, explore the meaning of happiness and prosperity and do a correct appraisal of the current scenario in the society.	2	Emp
CO2	Students should be able to distinguish between the Self and the Body, understand the meaning of Harmony in the Self the Co-existence of Self and Body.	2	S
CO3	Students should be able to understand the value of harmonious relationship based on trust, respect and other naturally acceptable feelings in human-human relationships and explore their role in ensuring a harmonious society.	2	S
CO4	Students should be able to understand the harmony in nature and existence, and work out their mutually fulfilling participation in the nature.	2	Ent
CO5	Students should be able to distinguish between ethical and unethical practices, and start working out the strategy to actualize a harmonious environment wherever they work.	1	None

Course Name **Basics of Computer and C Programming**
Course Code **CS3103**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Ent)/ None (Use , for more than
CO1	Students should be able to approachthe programming tasks using techniques learned in Theory and writepseudo-codes based on the requirements of the problem	2	Emp
CO2	Students should be able to usethe comparisons and limitations of the various programming constructs and choosethe right one for the task in hand.	2	S
CO3	Students should be able to write the program based on numerical techniques learned and able to edit, compile, debug, correct, recompile and run it.	2	S
CO4	Develops the knowledge of different software on different Operating System Platform such as Linux/Windows (Open Source and Licensed) with understanding of different IDE	2	En

CO5	Makes students gain a broad perspective about the uses of computers in engineering industry	1	None

Course Name **Basic Electrical and Electronics Engineering**
Course Code **EC3101**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to understand the basic theorems used in simplifying the electrical circuits.	2	Emp
CO2	Students should be able to Know about the generation and utilization of three phase alternating quantities.	2	S
CO3	Students should be able to Know about single phase transformer and its various parameters.	2	s
CO4	Students should be able to understand the various components used in electronics like P-N junction and Zenerdioide	2	En
CO5	Students should be able to understand basics of digital electronics and various electrical measurement devices	1	None

Course Name Basics of Computer and C Programming Lab
Course Code CS3140

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to approachthe programming tasks using techniques learned in Theory and write pseudo-codes based on the requirements of the problem.	2	Em
CO2	Students should be able to usethe comparisons and limitations of the various programming constructs and choosethe right one for the task in hand.	2	S

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CO3	Students should be able to write the program based on numerical techniques learned and able to edit, compile, debug, correct, recompile and run it.	2	S

Course Name **Basic Electrical and Electronics Engineering lab**
Course Code **EC3140**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to know about the basic concepts of the Kirchhoff's current and voltage laws and perform Thevenin's, Norton's, and superposition and maximum power transfer theorems.	2	Em
CO2	Students should be able to analyze and understand the characteristics of transistors and semiconductor diodes and analyze the half-wave and full-wave rectifier using silicon diode.	2	S
CO3	Students should be able to Learn the basic concepts of various logic gates.	2	S

Course Name **Engineering Graphics and Design**
Course Code **ME3142**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students will be able to know about basic concepts of projection and To Draw the projection of points and lines located in different quadrants	2	Em
CO2	Students will be able to Draw the projection of plane surfaces in various positions	2	S
CO3	Students will be able to Draw the projection of solids in various positions	2	S
CO4	Students will be able to Draw sectional views of a given object	2	En
CO5	Students will be able to develop surfaces and draw orthographic view of given object	1	None

Course Name **Communication and Soft Skills-I**

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Course Code **VP3101**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	On the completion of course the Students will be able to write, understand, analyze and create sentences in professional language (English). Students' horizon will be expanded with the correct usage of Grammar in writing and speaking, and will be able to improvise their speaking ability.		
CO2	Students will be able to take part in daily routine conversation in English		
CO3	Students will be able to understand and partially be groomed in corporate etiquettes and culture		
CO4	This course will aid the students to learn words and form strong vocabulary, use them correctly in a sentence while speaking and writing. Moreover, understand their meaning in the text		
CO5	The Students will learn to use strategies to listen actively and able to distinguish more important ideas from less important ones. Implement them while participating in the discussions. Henceforth, It yields the improvement in understanding, analyzing, creating and implementing the learning into real world encounter, effectively.		

Course Name **Mathematics II**
Course Code **MA3202**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to understand ordinary differential equations, with their solutions through constant coefficients. They will also learn about	2	Em

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CO2	Students should be able to understand the properties of Fourier series. And the relationship between Fourier series and linear time invariant system.	2	S
CO3	Students should be able to learn the basics of the theory of error and the approximation theory; the fundamental principles of mathematical modeling; the numerical methods for solving problems of algebra; and the methods of numerical integration and differentiation.	2	S
CO4	Students should be able to learn about Interpolation which is a useful mathematical and statistical tool used to estimate values between two points.	2	En
CO5	Students should be able to formulate and solve problems involving random variables and apply statistical methods for analyzing experimental data. They will also learn to analyze the complex function with reference to their analyticity, integration using Cauchy's integral and residue theorems. Taylor's and Laurent's series expansions of complex function will be also explored at the end of Unit.	1	None

Course Name **Engineering Physics**
Course Code **PH3101**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to understand special theory of relativity (STR), concepts linked with STR and radiation laws.	2	Em
CO2	Students should be able to understand interference, diffraction and able to connect it to a few engineering applications.	2	S
CO3	Students should be able to explain the phenomena of polarization in electromagnetic waves and their production, Detection and analysis. They will also understand the operation and working principle of laser.	2	S

CO4	Students should be able to understand electromagnetic theory using Maxwell's equations, and its uses in various engineering application. They will also understand the difference between diameter, para and ferromagnetic materials.	2	En
CO5	Students should be able to explain fundamentals of quantum mechanics and apply it to problems on bound states.	1	None

Course Name **Environmental Studies**
Course Code **CY3205**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to correlate the human population growth and its trend to the environmental degradation and develop the awareness about his/her role towards environmental protection and preventions.	2	Em
CO2	Students should be able to understand the solutions related to environmental problems related with the renewable & non-renewable resources.	2	S
CO3	Students should be able to understand the importance of ecosystem and biodiversity and the method of conservation of biological diversity.	2	S
CO4	Students should be able to understand different components of the environment and their function and the effects pollution on environment and should be able to understand the concept of sustainable development.	2	En
CO5	Students should be able to correlate the human population growth and its trend to the environmental degradation and develop the awareness about his/her role towards environmental protection and preventions.	1	None

Course Name **Fundamentals of Mechanical and Mechatronics Engineering**
Course Code **ME3103**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to understand application of the laws of thermodynamics to wide range of systems and aware about the basics of thermal engineering applications in IC engines and its working.	2	Em
CO2	Students should be able to know and apply the types of forces and concepts used to analyze force mechanisms	2	S
CO3	Students should be able to analyze and understand the Stress-strain diagrams and use of material.	2	S
CO4	Students should be able to understand the various machining processes	2	En
CO5	Students should be able to gain knowledge on the various engineering materials and their properties.	1	None

Course Name **Advance Computer Programming & Software**
Course Code **CS3207**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to Develop basic understanding of computers, the concept of algorithm, C programming and algorithmic/Programming thinking.	2	Em
CO2	Students should be able to use the C programming language to implement various algorithms, and develops the basic concepts and terminology of programming in general.	2	S
CO3	Students should be able to understand pointers, arrays, functions and macros that will be able to help them to design new problem solving approach in 'C'.	2	S
CO4	Students should be able to acquire the knowledge of different software's on different Operating System Platform such as Linux/Windows (Open Source and Licensed) with understanding of different IDE.	2	En

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CO5	Students should be able to gain a broad perspective about the uses of computers in engineering industry.	1	None

Course Name **Engineering Physics LAB**
Course Code **PH3140**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to understand the process of performing the experiments on wavelength and focal length practically.	2	Em
CO2	Students should be able to verify the theoretical calculations with observed results in practical experiments.	2	S
CO3	Students should be able to Enhance the skills of using apparatus for verification of different laws.	2	S

Course Name Advance Computer Programming & Software Lab
Course Code CS3245

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to develop Pointer, recursion, functions and array based programs in C.	2	Em
CO2	Students should be able to develop Dynamic memory allocation technique based programs and execute Command line Arguments in C.	2	S
CO3	Students should be able to execute C programs and Shell Commands in Unix Environment.	2	S

Course Name **Workshop Practice**
Course Code **ME3140**

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Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students will be able to develop the ability to perform the various operations with the help of lathe machine and its tools	2	Em
CO2	Students will be able to develop the ability to perform the various operations using welding	2	S
CO3	Students will be able to develop the ability to perform the various operations using fitting tools	2	S
CO4	Students will be able to develop the ability to perform the various operations on wood using carpentry tools	2	En
CO5	Students will be able to develop the ability to perform the various operations using blacksmith tools	1	None

Course Name **Disaster Preparedness & Management**
Course Code **CE3102**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students will be able to understand the basic concepts of disasters and its relationships with development.	2	Em
CO2	Students will be able to understand the approaches of Disaster Risk Reduction (DRR) and the relationship between vulnerability, disasters, disaster prevention and risk reduction.	2	S
CO3	Students will be able to understand the Medical and Psycho-Social Response to Disasters.	2	S
CO4	Students will be able to prevent and control Public Health consequences of Disasters	2	En
CO5	Students will have awareness of Disaster Risk Management institutional processes in India	1	None

Course Name **Indian Knowledge System**
Course Code **HU3201**

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Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	The students will be able to understand the Indian Knowledge System such as historical development, sources and scope.	2	S
CO2	The students will be able to understand the vocabulary system of Indian knowledge system.	2	S
CO3	The students will be able to understand and apply the philosophical foundations and methods of IKS.	3	N
CO4	The students will be able to execute the case studies based on the Indian knowledge system.	3	N
CO5	The students will be able to understand the influence of Indian Knowledge System on world.	2	S

Course Name **Communication and Soft Skills-II**
Course Code **VP3201**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	After the course the students will be able to write/understand and create sentences in English of all tenses, Students will heighten their awareness of correct usage of English grammar in writing and speaking and will be able to improve their speaking ability in English both in terms of fluency and comprehensibility.		
CO2	Students will be able to take part in daily routine conversation in English.		
CO3	Students will be able to understand and partially be groomed in corporate etiquettes and culture		
CO4	This course will aid the students to learn new vocabulary words, use them correctly in a sentence while speaking and writing, , and understand their meaning in the text		

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CO5	The students will learn to use strategies to listen actively, will be able to distinguish more important ideas from less important ones and will participate in the discussions.		

Course Name **Applied Hydraulics**
Course Code **CE3308**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to understand the concept of fluids & their types, related equations & theorems, concepts of pumps & turbines.	4	S
CO2	Students should be able to understand the concept of steam line, streamline, path flow, vortices& acceleration related with fluid flows.	3	S
CO3	Students should be able to understand the concept of fluids manometer, hydrostatic forces on submerged bodies, various important equations & theorems.	4	En
CO4	Students should be able to understand the concept of fluids boundary layer theories, behavior of fluid flows in open channels.	4	En
CO5	Students should be able to understand the concept of fluids drag, skin frictions on various elements, lift & drag theories.	3	En

Course Name **Basics of Geology & Rock Mechanics**
Course Code **CE3310**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students will be able to understand basics of geology	2	S
CO2	Students will be able to understand minerals and rocks	2	S
CO3	Students will be able to understand Stratigraphy	2	S
CO4	Students should be able to understand Structural Geology	2	S

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CO5	Students will be able to understand Geological Investigations of various structures	2	S

Course Name **Material Testing & Evaluation**
Course Code **CE3312**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to understand properties and usage of engineering materials	2	S
CO2	Students should be able to learn property and usage of materials	2	S
CO3	Students should be able to understand properties and usage of standard testing and evaluation procedures	2	En
CO4	Students should be able to understand the usage of standard testing procedure.	2	En
CO5	Students should be able to perform the test of special materials	2	En

Course Name **Construction Engineering & Management**
Course Code **CE3313**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to understand The owners' perspective	2	S
CO2	Students should be able to understand the concept of Organizing for project management	2	S
CO3	Students should be able to understand the Design and construction process	2	S
CO4	Students should be able to understand about the Labour, material and equipment utilization	2	S
CO5	Students should be able to understand the concept of Cost estimation	2	S

Course Name **Strength of Materials**
Course Code **ME3308**

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Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to understand the resisting behavior of materials under loads in different loading condition like tension, compression etc. and applying the learnings though numerical problems	4	S
CO2	Students should be able to understand the behavior of beams under the action of shear force and bending moment and applying the learnings though numerical problems	4	S
CO3	Students should be able to understand the behavior of different machine elements such as shafts and springs under twisting load and applying the learnings though numerical problems	4	En
CO4	Students should be able to understand the behavior of beams under deflection and applying the learnings though numerical problems	4	En
CO5	Students should be able to understand the behavior of building elements such as columns and struts under different loading condition and applying the learnings though numerical problems	4	En

Course Name **Material Testing & Evaluation Lab**
Course Code **CE3345**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to perform test on brick	3	S
CO2	Students should be able to find the properties of cement	3	S
CO3	Students should be able to perform test on aggregate	3	En
CO4	Students should be able to perform test on steel	3	En
CO5	Students should be able to understand the properties of steel	2	En

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Course Name **Fluid Mechanics & Hydraulics Lab**
Course Code **CE3347**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to understand the concept of Bernoulli's theorem & various losses in pipes.	3	S
CO2	Students should be able to understand the concept of Metacentric height of floating bodies & concepts of laminar & turbulent flows.	3	S
CO3	Students should be able to understand various coefficients of fluid flow.	3	En
CO4	Students should be able to understand the concept of Hydraulic jumps	3	En
CO5	Students should be able to conduct various test on fluids.	3	En

Course Name **Geology Lab**
Course Code **CE3349**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to understand about the properties of Igneous rock.	2	S
CO2	Students should be able to understand about the properties of Sedimentary rock.	2	S
CO3	Students should be able to understand about the properties of metamorphic rock.	2	S
CO4	Students should be able to analyze dip, dip direction and strike of given formations	3	S
CO5	Students should be able to understand the concept of Geological cross section and study of geological map.	2	S

Course Name **Strength of Materials Lab**
Course Code **ME3344**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to perform test to determine mechanical properties of soil	3	S
CO2	Students should be able to perform test to determine strength of soil	3	S
CO3	Students should be able to perform test to determine water content of soil sample	3	En
CO4	Students should be able to perform test to determine Index property of soil sample	3	En
CO5	Students should be able to perform test to determine Specific gravity of different soil sample	3	En

Course Name **United Nations Development Programme**
Course Code **HU3202**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students will learn about the Structure, Mission, Vision and Goals of UNDP	2	S
CO2	Equip the students with the knowledge of sustainable livelihoods for inclusive economic growth.	2	S
CO3	Students will learn and explore about the Human Development index to promote wellbeing at all ages.	2	S
CO4	To impart better education on SDGs goals focusing on Gender Equality and Provide Access to Justice to All and Build Effective.	3	N
CO5	Students will develop knowledge regarding environment sustainability.	3	N

Course Name **Value Added Program-III**
Course Code **VP3301**

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Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	After the course the students will be able to write/understand and create sentences in English of all tenses, Students will heighten their awareness of correct usage of English grammar in writing and speaking and will be able to improve their speaking ability in English both in terms of fluency and comprehensibility.		
CO2	Students will be able to take part in daily routine conversation in English.		
CO3	Students will be able to understand and partially be groomed in corporate etiquettes and culture		
CO4	This course will aid the students to learn new vocabulary words, use them correctly in a sentence while speaking and writing, , and understand their meaning in the text		
CO5	The students will learn to use strategies to listen actively, will be able to distinguish more important ideas from less important ones and will participate in the discussions.		

Course Name **Structural Analysis**
Course Code **CE3403**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	To perform analysis of determinate structures.	4	S
CO2	To understand the fundamental concepts and theorems for analysis of structures.	4	S
CO3	To perform analysis of trusses and frames using various conventional methods.	4	En
CO4	To analyze typical structures such as three hinged arch and two hinged arches.	4	En
CO5	To draw influence line diagrams for beams, girders, frames and indeterminate structures.	4	En

Course Name **Environmental Engineering**
Course Code **CE3407**

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Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to understand the types of sewer and its design consideration	3	S
CO2	Students should be able to understand the concept of waste water treatment (Primary Treatment	3	S
CO3	Students should be able to understand the concept of waste water treatment (Secondary Treatment)	3	En
CO4	Students should be able to understand the disposal of waste water on land and water bodies	3	En
CO5	Students should be able to understand the collection, transportation and treatment of municipal solid waste	3	En

Course Name **Soil Mechanics**
Course Code **CE3408**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to understand the properties of soil	3	S
CO2	Students should be able to understand the soil classification and permeability and seepage analysis	3	S
CO3	Students should be able to understand the compaction, consolidation and compressibility on soil	3	En
CO4	Students should be able to analyze the shear strength of soil	3	En
CO5	Students should be able to understand the concept of shear strength, slope of soil structure	3	En

Course Name **Basics of Ground Surveying**
Course Code **CE3409**

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Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to understand basics of surveying	4	S
CO2	Students should be able to understand linear measurements	4	S
CO3	Students should be able to understand leveling methods in surveying	4	En
CO4	Students should be able to perform angular measurements	4	En
CO5	Students should be able to understand curves and its formations	3	En

Course Name **Structural Analysis Lab**
Course Code **CE3442**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to analysis beams BY MAXWELL theorem	4	S
CO2	Students should be able to analysis column	4	S
CO3	Students should be able to analysis truss	4	En
CO4	Students should be able to analysis of arch	4	En
CO5	student will able to analyses the elastic deformation of curved beam	4	En

Course Name **Structural Analysis Lab**
Course Code **CE3442**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to determine water quality parameters physically	4	S
CO2	Students should be able to determine the water quality parameters chemically	4	S

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CO3	Students should be able to analyze the water quality parameters biologically	4	En
CO4	Students should able to identify the factors adversely affecting the quality of water	4	En
CO5	Students should able to understand the methods adopted to treat the water	3	En

Course Name **Soil Mechanic Lab**
Course Code **CE3447**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to analyze the different properties of soil	4	S
CO2	Students should be able to analyze the types of the soil using different methods	4	S
CO3	Students should perform the proctor test	4	En
CO4	Students should be able to analyze the shear strength of soil	4	En
CO5	Students should perform the aggregate impact value test	4	En

Course Name **Basics Ground Surveying Lab**
Course Code **CE3448**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to perform leveling and can find horizontal and vertical angles using surveying instruments	4	S
CO2	Students should be able to plot traverse and contours.	4	S
CO3	Students should be able to understand leveling methods in surveying	4	En
CO4	Students should be able to perform angular measurements	4	En
CO5	Students should be able to understand curves and its formations	4	En

Course Name **PDP for Managers III**
Course Code **VP3401**

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Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	This program lead to improve numerical skills of the students to do calculative part in short period of time.	4	S
CO2	Understanding of directions, blood relations, ranking, coding-decoding, calendar, clock enhance the analyzing power of students.	4	S
CO3	Understanding how a person efficiency impact on TIME AND WORK, And let to know the power of compounding in COMPUND INTEREST, also Know about the percentage calculation in various aspects.	4	En
CO4	Calculate Time Speed and Distance in various aspects, how Selling price and Cost price lead to profit or lose.	4	En
CO5	With the help of this student can qualify for various competitive exams (BANK, SSC, POLICE, DEFENCE, ETC.) This will be helpful for written exam of various companies.	4	En

Course Name **Advance Structural Analysis**
Course Code **CE3501**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to analyze the beam & portal frames using moment distribution method.	3	S
CO2	Students should be able to analyze the beam & portal frames using slope deflection method.	3	S
CO3	Students should be able to analyze the beam & trusses using flexible matrix method.	3	S
CO4	Students should be able to analyze the beam & trusses using stiffness matrix method.	3	S
CO5	Students should be able to analyze the beam & frames using plastic analyzes.	3	S

Course Name **Design of Steel Structures**
Course Code **CE3503**

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Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	The students will be able to understand the concept of designing of bolted and welded connections.	4	Em
CO2	The students will be able to analyze tension members and beams using the IS specifications.	3	Em
CO3	The students will be able to analyze compression member.	3	S
CO4	The students will be able to analyze columns under axial loads using IS specifications.	3	S
CO5	The students will be able to analyze roof truss and beam and column.	3	S

Course Name **Transportation Engineering**
Course Code **CE3504**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to understand the fundamentals of transportation system.	2	S
CO2	Students should be able to analyze the traffic capacity.	3	S
CO3	Students should be able to understand the railway transportation system.	2	S
CO4	Students should be able to understand the railway track junctions and crossings.	2	S
CO5	Students should be able to understand the Airport & Harbors Engineering.	2	S

Course Name **Design of Reinforced Cement Concrete Structures**
Course Code **CE3508**

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Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to design the portal frame	3	S
CO2	Students should be able to design the continuous beam	3	S
CO3	Students should be able to design the different types of water tank	3	S
CO4	Students should be able to design the combined footing and its type	3	S
CO5	Students should be able to design the retaining wall and its types	3	S

Course Name **Transportation Engineering Lab**
Course Code **CE-3542**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to perform various tests on aggregate.	3	S
CO2	Students should be able to perform various tests on bituminous material.	3	S
CO3	Students should able to determine the aggregate crushing value of coarse aggregate.	3	S
CO4	Students should able to determine find the Flash and fire point for the given bitumen sample.	3	S
CO5	Students should determination of Softening point of Bitumen and viscosity of bitumen binder..	3	S

Course Name **Advanced Structure Analysis Lab**
Course Code **CE3544**

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Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to analysis beams BY MAXWELL theorem	3	Em
CO2	Students should be able to analysis column	3	Em
CO3	Students should be able to analysis truss	3	Em
CO4	Students should be able to analysis of arch	2	Em
CO5	student will able to analyses the elastic deformation of curved beam	2	Em

Course Name **Reasoning Ability**
Course Code **VP3501**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	This program lead to improve advance numerical skills of the students to do calculative part in short period of time.	3	Em
CO2	Understanding of advance question of directions, blood relations, ranking, coding-decoding, calendar, and clock enhance the analyzing power of students.	3	Em
CO3	Understanding how a person efficiency impact on TIME AND WORK, And let to know the power of compounding in COMPUND INTEREST, also Know about the percentage calculation in various aspects.	3	Em
CO4	Calculate advance problem of Time Speed and Distance in various aspects,, how Selling price and Cost price lead to profit or lose.	2	Em
CO5	With the help of this student can qualify for various competitive exams (BANK, SSC, POLICE, DEFENCE, ETC.) This will be helpful for written exam of various companies.	2	Em

Course Name **Advanced Design of Concrete Structures**
Course Code **CE3609**

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Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to design the portal frame	3	S
CO2	Students should be able to design the continuous beam	3	S
CO3	Students should be able to design the different types of water tank	3	S
CO4	Students should be able to design the combined footing and its type	3	S
CO5	Students should be able to design the retaining wall and its types	3	S

Course Name **Water Resource Engineering**
Course Code **CE3610**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to understand the basic concept of hydrology.	2	S
CO2	Students should be able to understand the concept of methods of irrigation.	2	S
CO3	Students should be able to understand the concept of reservoirs & dams.	2	S
CO4	Students should be able to understand the concept of canals, their importance.	2	S
CO5	Students should be able to understand the concept of ground water engineering.	2	S

Course Name **Geotechnical Engineering**
Course Code **CE3612**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than

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CO1	Students should be able to understand the concept of soil exploration	1	S
CO2	Students should be able to analyze the earth pressure for retaining wall	3	S
CO3	Students should be able to understand the types of foundation	2	S
CO4	Students should be able to analyze the bearing capacity of foundation	3	S
CO5	Students should be able to understand the concept of well and machine foundation	2	S

Course Name **Geotechnical Engineering Lab**
Course Code **CE-3641**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to determine the different properties of soil using various tests	2	Em
CO2	Students should be able to explore the different types of soil	2	Em
CO3	Students should able to evaluate the water content-dry density relation using light Proctor Compaction Test	3	Em
CO4	Students should able to Perform Permeability Test	2	Em
CO5	Students should able to determine In Situ dry density of soils using Core Cutter Method and Sand Replacement Method.	2	Em

Course Name **Technical VAP I**
Course Code **CE3643**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Student will be able to apply the engineering knowledge to attain the problem-solving skills required during the placement drives.	2	Em
CO2	Student will be able to develop ability to face technical interviews.	2	Em

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CO3	Student will be able to know the types of technical questions asked by the companies in the placement drives.	2	Em
CO4	Students should be able to solve complex civil engineering problems.	3	Em
CO5	Students should be able to give answers of technical questions.	3	Em

Course Name **Water Resource Engineering Lab**
Course Code **CE3644**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to understand Measurement of Rainfall by recording & non – recording rain gauge.	2	S
CO2	Students should be able to determine mean rainfall of an area by Thiessen mean Polygon method, isohyetal method.	3	Em
CO3	Students should be able to determine meanings rogosity coefficient & velocity of a running of a stream in a canal by current meter and calculate the approximate discharge of the canal.	3	Em
CO4	Students should be able to design a regime channel by Lacey's theory for a given .pattern of crops and area to be irrigated.	3	Em
CO5	Students should be able To determine the yield of an open well by constant level pumping test.	2	Em

Course Name **Geomatics Engineering**
Course Code **CE3608**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to understand fundamentals of GPS.	2	S
CO2	Students should be able to understand types of GPS signals and its data.	2	S

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CO3	Students should be able to understand utility of GIS.	2	S
CO4	Students should be able to understand data acquisition.	2	S
CO5	Students should be able to understand applications of GPS & GIS.	2	S

Course Name **Building Construction Practice**
Course Code **CE3609**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to understand the Properties & Testing of Materials	2	S
CO2	Students should be able to understand the Properties of Miscellaneous Materials	2	S
CO3	Students should able to understand the properties of Brick & Stone Masonry	2	S
CO4	Students should able to understand the concept of Foundations	2	S
CO5	Students should be able to understand the Thermal Insulation and Acoustic	2	S

Course Name **Construction Project Planning & Systems**
Course Code **CE3610**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to understand basics of Project Management	2	S
CO2	Students should be able to understand Project Planning Tools	2	S
CO3	Students should be able to understand the. Cost Analysis & Updating	2	S
CO4	Students should be able to understand the Risk analysis and Resource allocation	2	S
CO5	Students should be able to understand the Construction Equipment	2	S

Course Name **Construction Cost Analysis**
Course Code **CE3611**

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Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to understand fundamentals of estimation.	2	S
CO2	Students should be able to understand the concept of Specification of Works	2	S
CO3	Students should be able to understand the Rate analysis	2	S
CO4	Students should be able to understand the concept of Public Works Account	2	S
CO5	Students should be able to understand applications of Valuation	2	S

Course Name **Health Safety & Environment Management**
Course Code **CE3701**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to understand respiration and skin effects.	2	Em
CO2	Students should be able to understand safety analysis during drilling.	2	S
CO3	Students should be able to evaluate management & impact of oil and gas.	2	S
CO4	Students should be able to determine remediation measure & prevention.	2	En
CO5	Students should be able to understand HSE regulation.	1	None

Course Name **Estimation and Costing**
Course Code **CE3702**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than

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CO1	Student should be able to understand the importance of estimation and costing.	2	Em
CO2	Student should be able to analyze the estimates of different structures.	2	S
CO3	Student should be able to understand about the Tenders.	2	S
CO4	Student should be able to analyze the concept of Valuation.	2	En
CO5	Student should be able to understand the concept of Report Preparation	1	None

Course Name **Estimation lab**
Course Code **CE3741**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to estimate the quantity of structures	2	Em
CO2	Students should be able to evaluate the quantity	2	S
CO3	Students should be able to present reports	2	S
CO4	Students should be able to estimate the material quantity	2	En
CO5	Students should be able to done price analysis	1	None

Course Name **Bridge Engineering**
Course Code **CE3703**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Student should be able to understand the types of bridge and its components.	2	Em
CO2	Student should be able to understand the concept of bridge loading standards.	2	S
CO3	Student should be able to analyze the design of Bridge Culvert, Tee Beam Bridge.	2	S
CO4	Student should be able to understand the concept of bearing and its classification.	2	En
CO5	Student should be able to understand the concept of foundation for Bridge Structure	1	None

Course Name **Earthquake Resistant Constructions**

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Course Code **CE3705**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Student should be able to able to understand the introduction about the Earthquake.	2	Em
CO2	Student should be able to able to understand the concept of Earthquake Response of Structure.	2	S
CO3	Student should be able to able to understand the concept of Two degree and multi-degree freedom systems.	2	S
CO4	Student should be able to able to understand the concept of Seismic Analysis and Modeling.	2	En
CO5	Student should be able to able to analyze the concept of Earthquake Resistant Design	1	None

Course Name **Masonry Structures**
Course Code **CE3709**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Student should be able to understand the concept of masonry units	2	S
CO2	Student should be able to understand the concept of strength and stability	2	S
CO3	Student should be able to understand the concept of permissible stresses	2	S
CO4	Student should be able to understand the DESIGN considerations	2	S
CO5	Student should be able to understand the concept of design of masonry walls	2	S

Course Name **Pre-stress Concrete**
Course Code **CE3710**

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Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Student should be able to understand the knowledge of Pre- stress Concrete	2	S
CO2	Student should be able to understand the concept of Methods and Systems of pre-stressing	2	S
CO3	Student should be able to analyze the Flexure	3	S
CO4	Student should be able to analyze the Composite Beam	3	S
CO5	Student should be able to analyze the Deflection	3	S

Course Name **System Engineering and Economics**
Course Code **CE3711**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Student should be able to understand the basic knowledge about the Course.	2	S
CO2	Student should be able to understand the concept of Value Engineering	2	S
CO3	Student should be able to understand the concept of Cash Flow	2	S
CO4	Student should be able to understand the concept of Cost concept	2	S
CO5	Student should be able to understand the Engineering Economics	2	S

Course Name **Hydrology**
Course Code **CE3706**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than

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CO1	Student should be able to understand the concept of precipitation.	2	Em
CO2	Student should be able to understand the concept of runoff.	2	S
CO3	Student should be able to understand the concept of flood and drought.	2	S
CO4	Student should be able to understand the concept of reservoirs.	2	En
CO5	Student should be able to understand the concept of groundwater and management	1	None

Course Name **Irrigation Engineering**
Course Code **CE3707**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Student should be able to understand the concept of water crop requirement.	2	Em
CO2	Student should be able to understand the concept of hydrological cycle and method of Irrigation.	2	S
CO3	Student should be able to understand the concept of Canal and Tube Well Irrigation.	2	S
CO4	Student should be able to understand the concept of Dams, Weir, and Barrage, its components and methods of construction.	2	En
CO5	Student should be able to understand the necessity of aqueduct, crossing, pipes etc.	1	None

Course Name **Urban Hydrology and Hydraulics**
Course Code **CE3712**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Student should be able to able to understand the importance of Urban Hydrology and Hydraulics	2	S
CO2	Student should be able to able to understand the concept of Ground water and well hydrology	2	S

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CO3	Student should be able to able to understand the concept of Distribution system, flow in bends of stream and their models	2	S
CO4	Student should be able to able to understand about the Canal head works	2	S
CO5	Student should be able to able to understand the use of Dams and spillway	2	S

Course Name **Open Channel Flow**
Course Code **CE3713**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Student should be able to know the basic knowledge about the Course.	2	S
CO2	Students should be able to understand the concept of	2	S
CO3	Students should be able to understand the concept of Control Section	2	S
CO4	Students should be able to understand the concept of Gradually Varied Flow	2	S
CO5	Students should be able to understand the concept of Hydraulic Jump	2	S

Course Name **Hydraulic Modelling**
Course Code **CE3714**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Student should be able to understand the concept of Hydrologic Modelling Overview	2	S
CO2	Student should be able to understand the concept of Inputs & Data Preprocessing – Temporal	2	S
CO3	Student should be able to understand the concept of Inputs & Data Preprocessing – Spatial.	2	S
CO4	Student should be able to understand the concept of. Model Operation & Application – Single Basin	2	S

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CO5	Student should be able to understand the concept of Model Operation & Application - Distributed Modelling	2	S

Course Name **Technical VAP II**
Course Code **CE3742**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students should be able to solve complex civil engineering problems.	2	Em
CO2	Students should be able to give answers of technical questions	2	S
CO3	Students should be able to learn to prepare a PowerPoint presentation on the training.	2	S
CO4	Students should be able to learn to prepare and submit a report on the training.	2	En
CO5	Students should learn the different concepts and ideas.	1	None

Course Name **Environmental Impact Assessment**
Course Code **CE3801**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Student should be able to able to carry out scoping and screening of developmental projects for environmental and social assessments	2	Em
CO2	Student should be able to able to explain different methodologies for environmental impact prediction and assessment	2	S
CO3	Student should be able to able to plan environmental impact assessments and environmental management plans	2	S
CO4	Student should be able to able to evaluate environmental impact assessment reports	2	En
CO5	Student should be able to able to understand the different the case studies	1	None

Course Name **Groundwater Improvement Technology**
Course Code **CE3802**

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Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Student should be able to know the basic knowledge about the Course.	2	Em
CO2	Student should be able to analyze the ground water flow.	2	S
CO3	Student should be able to understand the investigations of surface and subsurface water.	2	S
CO4	Student should be able to understand the concept of artificial recharge.	2	En
CO5	Student should be able to know about the saline water intrusion.	1	None

Course Name **Water and air quality modeling**
Course Code **CE3811**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Student should be able to able to understand the basic knowledge about the Course	2	Em
CO2	Student should be able to able to understand the Air Quality Modelling	2	S
CO3	Student should be able to able to understand the Water Quality Models	2	S
CO4	Student should be able to able to understand the Water Quality Management	2	En
CO5	Student should be able to able to understand the Legal Aspects of Water quality	2	S

Course Name **Solid and Hazardous Waste Management**
Course Code **CE3812**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than

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CO1	Student should be able to understand the concept of Solid Waste	2	Em
CO2	Student should be able to understand the Engineering Systems for Solid Waste Management	2	S
CO3	Student should be able to understand the Engineering Systems for Resource and Energy Recovery	2	S
CO4	Student should be able understand the concept of Landfills	2	En
CO5	Student should be able to understand the concept of Hazardous waste Management	2	s

Course Name **Air and Noise Pollution and Control**
Course Code **CE3814**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Students will be able to understand basic concepts of Air pollution, their causes, sources & effects on health.	2	Em
CO2	Students will be able to understand about Air pollution chemistry, meteorological aspects of air pollution dispersion	2	S
CO3	Students will be able to understand the concepts of. Ambient air quality and standards, air sampling and measurements	2	S
CO4	Students will be able to understand basic concepts of Control of gaseous contaminants:	2	En
CO5	Students will be able to understand basic knowledge of Noise pollution	2	S

Course Name **Sustainable Engineering & Technology**
Course Code **CE3815**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Student should be able to understand the concept of Sustainability	2	Em
CO2	Student should be able to understand the concept of Pollution and carbon foot print	2	S

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CO3	Student should be able to understand the concept of Environment Impact Assessment	2	S
CO4	Student should be able to design the Green building	2	En
CO5	Student should be able to understand the concept of Green Engineering	2	S

Course Name **Advance Transportation Engineering**
Course Code **CE3804**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Student should be able to understand the traffic engineering.	2	Em
CO2	Student should be able to forecast the future traffic and parking area.	2	S
CO3	Student should be able to understand about the airport engineering.	2	S
CO4	Student should be able to design the airport.	2	En
CO5	Student should be able to understand about the docks and harbor engineering.	2	S

Course Name **Pavement Materials**
Course Code **CE3816**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Student should be able to understand the properties of aggregates	2	Em
CO2	Student should be able to analyze the different between bitumen and tar	2	S
CO3	Student should be able to design the bituminous mixes	2	S
CO4	Student should be able to understand the use of equipment in highway construction	2	En
CO5	Student should be able to understand the concept of cement concrete pavements	2	S

Course Name **Pavement Design**
Course Code **CE3817**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Student should be able to understand the basic history of pavement.	2	Em
CO2	Student should be able to understand the materials used in construction of pavement	2	S
CO3	Student should be able to understand the Maintenance of pavement	2	S
CO4	Student should be able to design the Different models of Traffic	3	En
CO5	Student should be able to understand the Pavement management system	2	S

Course Name **Urban transportation planning**
Course Code **CE3818**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Student should be able to understand basics of Urban Transportation planning	2	Em
CO2	Student should be able to analyze the Transportation survey	3	S
CO3	Student should be able to understand the Transportation models	2	S
CO4	Student should be able to analyze the Data collection and inventories	3	En
CO5	Student should be able to understand the concept of Traffic assignment	2	S

Course Name **Entrepreneurship Management in Civil Engineering**
Course Code **CE3820**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than

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CO1	Students should be able to understand the concepts, needs, functions of entrepreneurship, Schemes of assistance agencies at National, State, District level: NSIC, NRDC, DC: MSME, SIDBI, NABARD.	2	Em
CO2	Students should be able to understand the concepts of planning & organizing the staff & their controlling.	2	S
CO3	Students should be able to understand the concepts of project reports, Common errors in project report preparations, Exercises on preparation of project report.	2	S
CO4	Students should be able to understand the concepts, need, qualities & functions of a leader, Manager Vs leader, Types of leadership, definitions and characteristics, Factors affecting motivation, Theories of motivation	2	En
CO5	Students should be able to understand the concepts of Human Resource Management & their functions & needs.	2	S

Course Name **Low Cost Housing**
Course Code **CE3821**

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Student should be able to understand the concept of housing scenario.	2	Em
CO2	Student should be able to understand the basic knowledge of land use and physical planning for housing.	2	S
CO3	Student should be able to understand the concept of Development and Adopt On Of Low Cost Housing Technology	2	S
CO4	Student should be able to understand the concept of Low Cost Infrastructure Services	2	En
CO5	Student should be able to understand the concept of Housing in Disaster Prone Areas	2	s

Course Name **Airport & Harbor Planning**
Course Code **CE3822**

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Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Emt)/ None (Use , for more than
CO1	Student should be able to understand the basic knowledge about Airport.	2	Em
CO2	Student should be able to understand about the airport planning's.	2	S
CO3	Student should be able to design airport.	2	S
CO4	Student should be able to understand about the harbor planning's	2	En
CO5	Student should be able to understand the basic knowledge about docks.	2	s