Course Outcomes (COs)

Department of Civil Engineering

2017 Scheme

COURSE DETAILS

Course Name	ENGINEERING MATHEMATICS -1
Course Code/Course Index	17MAT11 –C101
Academic Year	2017-18
Semester	I

Course outcomes (COs)

C101.1	Determining the nth derivative, radius of curvature in different coordinate system, expanding the function in terms of taylors series and evaluating indeterminate forms.
C101.2	Use Partial derivatives to calculate rates of change of multivariate function.
C101.3	Analyze the position, velocity and acceleration in two or three dimensions using the calculus of vector valued function.
C101.4	Recognize and solve first order ODE, Newtons law of cooling and evaluating the integrals using Reduction Formulas
C101.5	Use matrices techniques for solving system of liner equation in the different areas of linear algebra.

COURSE DETAILS

Course Name	ENGINEERING PHYSICS
Course Code/Course Index	17PHY12/22 / C-102
Academic Year	2017-18
Semester	I/II

Course outcomes (COs)

C102.1	Develop the problem solving skills and implementation of skills in technology by understanding the basic principles of modern physics & Quantum mechanics.
C102.2	Gain knowledge about the material properties and develop skills to use these materials in engineering applications.
C102.3	Gain knowledge about Principle of LASERs and optical fibers and to develop skills needed for modern photonic applications.
C102.4	Design and select materials for various applications by studying the material structure and the structure property relationship.
C102.5	Learn about latest developments in science such as shock waves and nano science which will stimulate interest in research at higher education.

COURSE DETAILS

Course Name	ELEMENTS OF CIVIL ENGINEERING AND MECHANICS
Course Code/Course Index	17CV13/23 / C103
Academic Year	2017-18
Semester	1/2

Course Outcomes:

C103.1	Describe the basics of civil engineering, its scope of study, knowledge about roads, bridges and dams and also the action of forces, moments and couple.
C103.2	Compute the resultant forces and the effect of equilibrium in concurrent force system and action of friction in various bodies.
C103.3	Compute the resultant forces and the effect of equilibrium in non concurrent force system and study of support reaction in beams.
C103.4	Locate the centroid and compute moment of inertia of composite, plane and curved figures
C103.5	Analyse the basics concept of kinematics to know the motion of particles and to evaluate their speed, time, acceleration etc.

COURSE DETAILS

Course Name	ELEMENTS OF MECHANICAL ENGINEERING
Course Code/Course Index	17EME14/24 C-104
Academic Year	2017-18
Semester	I & II

Course Outcomes:

C104.1	Demonstrate knowledge associated with various Energy and different kind of boilers
C104.2	Identifying different kinds of energy conversions by using Prime movers such as turbines and I C engines.
C104.3	Learn the operation of Metal removal process using Lathe, drilling, milling, robotics and automation.
C104.4	Fair understanding of application and usage of various engineering materials.
C105.5	To understand the principles of Refrigeration and Air conditioning systems

COURSE DETAILS

Course Name	BASIC ELETRICAL ENGINEERING
Course Code/Course Index	17ELE15/C-105
Academic Year	2017-18
Semester	I/II

Course outcomes (COs)

C105.1	To evaluate and analyze the behaviour of electrical and magnetic circuits for basic DC and AC sources.
C105.2	To describe the generation of single phase and poly-phase quantities, methods of generation, calculation of current, power in each case.
C105.3	To understand the construction, operation and characteristics of DC generator and DC motor and the measuring instruments like induction type and Dynamometer type wattmeter.
C105.4	To recognize the need of AC generators and motors, analyze their working, types and applications for various practical purposes.
C105.5	To explain the importance of transformers in transmission and distribution of electric power and to impart the knowledge of Electrical Safety rules and standards.

COURSE DETAILS

Course Name	WORKSHOP PRACTICE LABORATORY
Course Code/Course Index	17WSL16/26 – C106
Academic Year	2017-18

Course outcomes:

C106.1	Demonstrate the use of hand tools
C106.2	Demonstrate and produce different types of fitting models.
C106.3	Gain knowledge of development of sheet metal models with recognition of their applications.
C106.4	Perform soldering and welding of different sheet metal & welded joints.
C106.5	Appraise the Basics of Workshop practices.

COURSE DETAILS

Course Name	ENGINEERING PHYSICS LABORATORY
Course Code/Course Index	17PHYL17/27 / C-107
Academic Year	2017-18

Course outcomes:

C107.1	To realize behavior and effect of electromagnetic radiation and to understand various optical phenomena.
C107.2	To know about the characteristics behavior of materials in a practical manner and to compare the theoretical principle involved with the real life solutions.
C107.3	To realize the principle, concept and the working of various electronic circuits and to develop the skills to design new engineering experiments

COURSE DETAILS

Course Name	ENGINEERING MATHEMATICS-II
Course Code/Course Index	17MAT21 / C-109
Academic Year	2017 -18
Semester	II

2.1 Course outcomes (COs)

C109.1	Evaluate the solutions of differential equations of electrical circuits, forced oscillation of mass spring and elementary heat transfer.
C109.2	Solve differential equations of Clairaut's equation, non-linear mechanical vibrations and transient analysis of nonlinear non-conservative systems.
C109.3	Determine the solutions of partial differential equations of fluid mechanics, electromagnetic theory and heat transfer.
C109.4	Evaluate double and triple integrals to find area, volume, mass and moment of inertia of plane and solid region.
C109.5	Apply Laplace transforms to determine general or complete solutions to linear ODE, Electrical circuit theory, signal processing, statistical mechanics, Civil engineering.

COURSE DETAILS

Course Name	ENGINEERING CHEMISTRY
Course Code/Course Index	17CHE12/ -C110
Academic Year	2017-18
Semester	I & II

Course outcomes (COs)

C110.1	Understand Electrochemical and concentration cells, Classical & modern batteries and fuelcells.
C110.2	Identify Causes & effects of corrosion of metals and control of corrosion. Modification of surface properties of metals to develop resistance to corrosion, wear, tear, impact etc. by electroplating and electro less plating.
C110.3	Explain Production & consumption of energy for industrialization of country and living standards of people. Utilization of solar energy for different useful forms of energy.
C110.4	Explain Replacement of conventional materials by polymers for various applications
C110.5	Understand Boilertroubles; sewage treatment and desalination of seawater, and Overviewing of synthesis, properties and applications of nano materials

COURSE DETAILS

Course Name	PROGRAMMING IN C AND DATA STRUCTURES
Course Code/Course Index	17PCD13/23 / C-111
Academic Year	2017 -18
Semester	I/II

Course outcomes (COs)

C111.1	Understand the basics of computers, syntax and semantics of C programming language
C111.2	Demonstrate the different techniques of using branching and looping statements.
C111.3	Understand the concepts of string handling and arrays. Design and develop modular programming skills
C111.4	Understand the basics of structures and file management.
C111.5	Analyze the concepts of Pointers, Preprocessor Directives and Data Structures.

COURSE DETAILS

Course Name	COMPUTER AIDED ENGINEERING DRAWING
Course Code/Course Index	17CED14/24 – C112
Academic Year	2017-18
Semester	I/II

Course outcomes (COs)

C112.1	Students will be able to visualize and draw orthographic projections of points, lines & planes
C112.2	Students will be able to visualize and draw sections of solids
C112.3	Students will be able to visualize and draw isometric views of solids & development
C112.4	Students will be able to visualize and draw isometric views of solids and combination of solids
C112.5	Students will be able to visualize and draw development of lateral surfaces of solids

COURSE DETAILS

Course Name	BASIC ELECTRONICS
Course Code/Course Index	17ELN15- C-113
Academic Year	2017-18
Semester	I/II

Course outcomes (COs)

C113.1	Understand the fundamental characteristics of semiconductor diodes and their applications.
C113.2	Analyze the basic transistor operation, its characteristics and to design different transistor biasing circuits
C113.3	Learn the operational amplifier characteristics and its applications.
C113.4	Learn fundamentals of digital logics and analyze the operation of Flip-Flops, Microcontrollers
C113.5	Evaluate the functioning of a communication system and learn different transducer devices.

COURSE DETAILS

Course Name	COMPUTER PROGRAMMING LABORATORY
Course Code/Course Index	17CPL16/26 / C-114
Academic Year	2017-18

Course outcomes:

C114.1	Develop programs using concept of decision making statements
C114.2	Design programs using concept of arrays and strings.
C114.3	Reduce the complexity of the programs by making use of functions
C114.4	Develop and experiment with programs using concepts like pointers, files, structures.

COURSE DETAILS

Course Name	ENGINEERING CHEMISTRY LABORATORY
Course Code/Course Index	17CHEL17 / 27 – C115
Academic Year	2017-18

Course outcomes:

C115.1	Handling different types of instruments for analysis of materials using small quantities of materials involved for quick and accurate results.
C115.2	Carrying out different types of titrations for estimation of concerned materials using comparatively more quantities of materials for good results.

COURSE DETAILS

Course Name	ENVIRONMENTAL STUDIES
Course Code/Course Index	17CIV18/C-116
Academic Year	2017-18
Semester	1/2

Course Outcomes:

C116.1	Demonstrate ecology knowledge of a complex natural environment relationship with human activities and analyze human impacts on the environment.
C116.2	Understand basic needs and their ecological knowledge to illustrate and graph a problem and describe the realities when mankind dealing with complex environmental issues.
C116.3	Analyse and evaluate strategies, technologies, and methods for sustainable management of environmental systems and for the remediation or restoration of degraded environments.
C116.4	Build the individual responsibility to protect environment with environmental protection laws and education.

COURSE DETAILS

Course Name	ENGINEERING MATHEMATICS-III
Course Code/Course Index	17MAT31 / C-201
Academic Year	2018 -19
Semester	III

Course outcomes (COs)

C201.1	Develop the knowledge of the use of periodic signals and Fourier series to analyze circuits and system communications
C201.2	Explain the general linear system theory for continuous-time signals and digital signal processing using the Fourier Transform and z-transform.
C201.3	Apply the principles of curve fitting and the most common methods for curve fitting such as linear regression. Outline properties of correlation and compute Karl-Pearson's coefficient of correlation.
C201.4	Employ appropriate numerical methods to solve algebraic and transcendental equations. Apply method of interpolation for prediction and apply numerical integration to calculate definite integrals of analytical functions or experimental data points
C201.5	Apply Green's Theorem, Divergence Theorem and Stokes' theorem in various applications in the field of electro-magnetic and gravitational fields and fluid flow problems. Determine the externals of functional and solve the simple problems of the calculus of variations.

COURSE DETAILS

Course Name	STRENGTH OF MATERIALS
Course Code/Course Index	17CV32 / C-202
Academic Year	2018-19
Semester	III

Course outcomes (COs)

C202.1	Evaluate the stresses and strains in the materials when subjected to compression, tension and change in temperature.
C202.2	Evaluate the strength of structural elements under the action of compound stresses and thus understand stresses developed in thick and thin cylinders.
C202.3	Analyse the beams for different loading conditions and draw the Shear force and Bending moment diagrams.
C202.4	Evaluate the bending and shear stresses developed in the beams and also understand the failure of columns.
C202.5	Analyse and design the members subjected to torsion and understand the failure theories.

COURSE DETAILS

Course Name	**FLUID MECHANICS**
Course Code	**17CV33/C-203**
Academic Year	2018-19

Course outcomes:

C203.1	Make use of the fundamental properties of fluids and fluid Continuum.
C203.2	Analyze and solve problems on hydrostatics, including practical Applications
C203.3	Apply principles of mathematics to represent kinematic concepts related to fluid flow. Enumerate fundamental laws of fluid mechanics- conservation of mass, conservation of linear momentum, & the Bernoulli's principle for practical applications
C203.4	Evaluate the discharge through the weirs, notches, orifices and mouthpieces
C203.5	Analyze the major and minor losses in pipes.

COURSE DETAILS

Course Name	BASIC SURVEYING
Course Code/Course Index	17CV34 / C-204
Academic Year	2018-19
Semester	III

Course outcomes (COs)

C204.1	Develop a sound knowledge of fundamental principles of Geodetics.
C204.2	Measure of vertical and horizontal plane, linear and angular dimensions to arrive at solutions to basic surveying problems.
C204.3	Measure of bearings for traversing using compass.
C204.4	Determine the reduced levels of the points from staff readings using auto level.
C204.5	Analyze the obtained spatial data and compute areas and volumes. Represent 3D data on plane figures as contours.

COURSE DETAILS

Course Name	ENGINEERING GEOLOGY
Course Code/Course Index	17CV35 / C-205
Academic Year	2018-19
Semester	III

Course outcomes (COs)

C205.1	Apply the knowledge of geology and its role in Civil Engineering
C205.2	Utilize earth's materials such as mineral, rocks and water in civil engineering practices effectively.
C205.3	Analyze the natural disasters and their mitigation.

C205.4	Assess various structural features and geological tools in ground water exploration, Natural resource estimation and solving civil engineering problems.
C205.5	Apply and asses the use of Topo sheets, contour map, Remote Sensing, GIS & GPS in civil engineering projects and natural resource management.

COURSE DETAILS

Course Name	BUILDING MATERIALS AND CONSTRUCTIONS
Course Code	17CV36/ C-206
Academic Year	2018-19
SEMESTER	III

Course outcomes:

C206.1	Select suitable building materials and test it before using it for construction work.
C206.2	Construct suitable foundation depend on type of soil and choose masonry according to nature of work
C206.3	Catagorize the components of building according to their function and distinguish between floor and roof.
C206.4	Classify door, windows, ventilators, staircases, and formwork according to their use, location, materials, and functions.
C206.5	Compare plastering, pointing, painting and damp proofing which influence on internal and external appearance of structure.

COURSE DETAILS

Course Name	BASIC MATERIAL TESTING LABORATORY
Course Code/Course Index	17CVL37/ 207
Academic Year	2018-19

Course outcomes:

C207.1	Reproduce the knowledge of mathematics and engineering in finding the strength in compression, tension, shear and torsion
C207.2	Examine the physical properties of various materials to evaluate strength characteristics
C207.3	Identify, formulate and solve engineering problems of structural elements subjected to flexure
C207.4	Evaluate the impact of engineering solutions on the society and also will be aware of contemporary issues regarding failure of structures due to

COURSE DETAILS

Course Name	**BASIC SURVEYING PRACTICE**
Course Code/Course Index	**17CVL38 / C-208**
Academic Year	2018-19

Course outcomes:

C208.1	Apply the basic principles of engineering surveying for linear measurements.
C208.2	Use the compass to measure magnetic bearings and carry out traversing.
C208.3	Perceive effectively field procedures required for a professional surveyor to carry out levelling process.
C208.4	Use of instruments like theodolite to measure horizontal and vertical angles and conventional surveying instruments necessary for engineering practice.

COURSE DETAILS

Course Name	ENGINEERING MATHEMATICS-IV
Course Code/Course Index	17MAT41 / C-210
Academic Year	2018-19
Semester	IV

Course outcomes (COs)

C209.1	Apply appropriate single step and multi step numerical methods to solve first and second order ordinary differential equations arising in flow problems.
C209.2	Make use of Bessel's function to solve problems of quantum mechanics, hydrodynamics and heat conduction relating to cylindrical polar coordinate systems and Legendre's polynomials relating to spherical polar coordinate systems.
C209.3	Explain the idea of analyticity, analyticity, potential fields, residues and poles of complex potentials in field theory and electromagnetic theory. Describe conformal and bilinear transformation arising in aerofoil theory, fluid flow visualization and image processing.
C209.4	Solve problems on probability distributions relating to digital signal processing, information theory and optimization concepts of stability of design and structural engineering and joint probability distributions connected with the multivariable correlation problems for feasible random events
C209.5	Illustrate the validity of the hypothesis proposed for the given sampling distribution in accepting or rejecting the hypothesis. Define stochastic matrix connected with the multivariable correlation problems for feasible random events and transition probability matrix of a Markov chain and solve problems related to discrete parameter random process

COURSE DETAILS

Course Name	ANALYSIS OF DETERMINATE STRUCTURES
Course Code	17CV42 / C-211
Academic Year	2018-19
Semester	IV

Course outcomes

C210.1	Determine the forces in determinate trusses by method of joints and sections
C210.2	Evaluate the deflection of cantilever, simply supported and overhanging beams by different methods
C210.3	Utilize the energy principles and energy theorems and its applications to determine the deflections of trusses and bent frames
C210.4	Determine the stress resultants in arches and cables
C210.5	Utilize the concept of influence lines and construct the ILD diagram for the moving loads

COURSE DETAILS

Course Name	**APPLIED HYDRAULICS**
Course Code	**17CV43 / C212**
Academic Year	2018-19

Course outcomes:

C211.1	Apply dimensional analysis to develop mathematical modeling and compute the parametric values in prototype by analyzing the corresponding model parameters
C211.2	Identify the open channels of various cross sections including optimum design sections
C211.3	Apply Energy concepts of fluid in open channel, calculate Energy dissipation, and compute Water profiles at different conditions
C211.4	Analyze the performance of Turbines for various design data
C211.5	Evaluate the performance of Pumps for various design data

COURSE DETAILS

Course Name	CONCRETE TECHNOLOGY
Course Code	17CV44/ C-213
Academic Year	2018-19
Semester	IV

Course outcomes (COs)

C210.1	Select suitable materials which influence on quality of concrete and Understand the Influence of chemical and mineral admixtures on the properties of concrete.
C210.2	Develop good workable concrete for construction and identifying the bad and good practice in making concrete
C210.3	Evaluate the performance of concrete in compression, tension, bond, elasticity which are greatly influence on water-cement ratio and gel-space ratio.
C210.4	Design concrete mix using BIS standards to satisfy the durability requirements

C210.5	Perceive a knowledge on present and future revolutionary advancement in concrete and concrete technology

COURSE DETAILS

Course Name	**Basic Geotechnical Engineering**
Course Code/Course Index	17CV45 / C-214
Academic Year	2018-19
Semester	IV

Course outcomes (COs)

C213.1	Make use of the procedures to determine index properties of any type of soil, classify and list the soil based on its index properties
C213.2	Determine compaction characteristics of soil and apply that knowledge to assess field compaction procedures
C213.3	Estimate permeability property of soils and acquires conceptual knowledge about stresses due to seepage and effective stress; Also acquire ability to estimate seepage losses across hydraulic structure
C213.4	Solve practical problems related to estimation of consolidation settlement of soil deposits also time required for the same financing concepts.
C213.5	Evaluate shear strength parameters of different types of soils using the data of different shear tests and comprehend Mohr-Coulomb failure theory.

COURSE DETAILS

Course Name	ADVANCED SURVEYING
Course Code/Course Index	17CV46 / C-215
Academic Year	2018-19
Semester	IV

Course outcomes (COs)

C214.1	Apply the knowledge of geometric principles to arrive at surveying problems.
C214.2	Determine the positions of celestial bodies and calculate the distance between the bodies.
C214.3	Capture geodetic data to process and perform analysis for survey problems with the use of electronic instruments.
C214.4	Design and implement the different types of curves for deviating type of alignments.
C214.5	Use of modern survey instruments and apply the knowledge of GIS in transportation and town planning.

COURSE DETAILS

Course Name	FLUID MECHANICS AND HYDRAULIC MACHINES
Course Code	17CVL47 / C-216
Academic Year	2018-19

Course outcomes:

C215.1	Apply the knowledge in finding friction factor for different pipes and also calibrate the measuring tank
C215.2	Determine the rate of flow by different setup
C215.3	Interpret the output results obtained from impact of jet, pumps, turbine to check the performance

COURSE DETAILS

Course Name	ENGINEERING GEOLOGY LABORATORY
Course Code/Course Index	17CVL48 / C-217
Academic Year	2018-19

Course outcomes:

C216.1	Utilize the minerals and rocks effectively in civil engineering practices.
C216.2	Interpreting subsurface information such as thickness of soil, weathered zone, depth of hard rock and saturated zone by using geophysical methods.
C216.3	Determine the dip and strike direction in Civil Engineering projects (Railway lines, tunnels, dams, reservoirs).
C216.4	Interpreting topographical sheet and geological map to get the geological conditions of the area for the implementation of civil engineering projects.

COURSE DETAILS

Course Name	KANNADA MANASU
Course Code/Course Index	17KL39/49: C2181
Academic Year	2018-19
Semester	III/IV

Course outcomes (COs)

C2182.1	Understand the grammar in Kannada language and their awareness
C2182.2	Build communication skills in day to day activities
C2182.3	Develop interest on Kannada Language and Literature

COURSE DETAILS

Course Name	KANNADA KALI
Course Code/Course Index	17KL39/49: C2182
Academic Year	2018-19
Semester	III/IV

Course outcomes (COs)

C2182.1	Understand the simple words in Kannada language
C2182.2	Build communication skills in day to day activities
C2182.3	Develop interest on Kannada Language and Literature

COURSE DETAILS

Course Name	**DESIGN OF RC STRUCTURAL ELEMENTS**
Course Code/Course Index	17CV51 / C-301
Academic Year	2019-20
Semester	V

Course outcomes (COs)

C301.1	Explain the design philosophy and principles
C301.2	Solve the engineering problems of RC elements subjected to flexure, shear and torsion
C301.3	Adapt the procedural knowledge in designs of RC structural elements such as beams and slabs
C301.4	Utilize the concept of designs of RC structural elements-columns, footings and staircases for different cases
C301.5	Utilize professional and ethical responsibility in the direction of safe and economic structures

COURSE DETAILS

Course Name	ANALYSIS OF INDETERMINATE STRUCTURE
Course Code/Course Index	17CV52 / C-302
Academic Year	2019-20
Semester	V

Course outcomes (COs)

C302.1	Determine the moment in indeterminate beams and frames of varying cross section using slope defection method.
C302.2	Determine the moment in indeterminate beams and frames of no sway and sway using moment distribution method.

C302.3	Analyze the beams and frames by Kani's method.
C302.4	Analyze the beams and frames using flexibility matrix method.
C302.5	Analyze the beams and indeterminate frames using stiffness matrix method.

COURSE DETAILS

Course Name	**Applied Geotechnical Engineering**
Course Code/Course Index	17CV53 / C-303
Academic Year	2019-20
Semester	V

Course outcomes (COs)

C303.1	Plan and execute geotechnical site investigation program for different civil engineering projects.
C303.2	Analyze the stress distribution and compute settlement in various types of soils.
C303.3	Estimate factor of safety against failure of slopes and to compute lateral pressure distribution behind earth retaining structures
C303.4	Determine bearing capacity of soil and to achieve proficiency in proportioning various types of footing.
C303.5	Estimating load carrying capacity of single and group of piles

COURSE DETAILS

Course Name	**Computer Aided Building Planning and Drawing**
Course Code/Course Index	**17CV54/C304**
Academic Year	2019-20
Semester	V

Course outcomes:

C304.1	Gain a broad understanding of planning and developing drawing of various structural elements of buildings.
C304.2	Develop, read and interpret the drawings various components of civil engineering structures and roads in a professional set up.
C304.3	Plan and design a residential or public building as per the given requirements, develop working and submission drawings for building along with Knowing the procedures for submission of drawings.

COURSE DETAILS

Course Name	AIR POLLUTION AND CONTROL
Course Code/Course Index	17CV551 / C-3051
Academic Year	2019-20
Semester	V

Course outcomes (COs)

C3051.1	Examine different types of air pollutants, explain their dispersion and effect on environment.
C3051.2	Compare emission rate of pollution from transport and industry, theory of dispersion model.
C3051.3	Assess air quality management, relevant standard and regulations
C3051.4	Identify particulates control by different methods
C3051.5	List the causes, effects and control of noise pollution

COURSE DETAILS

Course Name	TRAFFIC ENGINEERING
Course Code/Course Index	17CV561 / C-3061
Academic Year	2019-20
Semester	V

Course outcomes (COs)

C3061.1	Make use of the basic concepts of traffic engineering,
C3061.2	Apply the different technique for analysis of traffic data
C3061.3	Analyze traffic flow situations for efficiency and safety.
C3061.4	Evaluate the traffic issues and design appropriate measures.
C3061.5	Take part in application of ITS in the present traffic management.

COURSE DETAILS

Course Name	**Geotechnical Engineering Lab**
Course Code	17CVL57 / C-307
Academic Year	2019-20

Course outcomes:

C307.1	Experiment with laboratory tests and to identify soil as per IS code procedures and to determine index properties of soil.
C307.2	Determine shear strength and consolidation characteristics of soil.
C307.3	Distinguish regarding the grain size, elastic and plastic properties ofsoil

COURSE DETAILS

Course Name	**Concrete and Highway Materials Laboratory**
Course Code	**17CVL58 / C-308**
Academic Year	2019-20

Course outcomes:

C308.1	Examine the quality and suitability of cement for construction work
C308.2	Analyze appropriate concrete mix and Determine strength and quality of concrete
C308.3	Make use of knowledge acquired on road aggregates and bitumen for their suitability as road material.
C308.4	Determine the suitability of soil as sub grade materials.

COURSE DETAILS

Course Name	CONSTRUCTION MANAGEMENT & ENTEPRENEURSHIP
Course Code/Course Index	17CV61 / C-309
Academic Year	2019-20
Semester	VI

Course outcomes (COs)

C309.1	Apply the construction management process and development of project plan.
C309.2	Build the skills needed to manage human resources and materials
C309.3	Solve variety of issues that are encountered by professional in discharging professional duties
C309.4	Make use of the role of economics in the decision making process and perform the calculations in regard to interest formulas.
C309.5	Apply the professional obligations effectively with global outlook

COURSE DETAILS

Course Name	**DESIGN OF STEEL STRUCTURES**
Course Code/Course Index	17CV62 / C-310
Academic Year	2019-20
Semester	VI

Course outcomes (COs)

C310.1	Utilize the knowledge of steel structures, Advantages and Disadvantages of steel structures, steel code provisions and plastic behaviour of structural steel
C310.2	Make use of the concept of bolted and welded connections, failure mechanisms and to design against the failures
C310.3	Design of compression members, built-up columns and columns splices across different practical situations
C310.4	Design the tension members, simple slab base and gusseted base
C310.5	Utilize the concept of laterally supported and un-supported steel beams and its design

COURSE DETAILS

Course Name	HIGHWAY ENGINEERING
Course Code/Course Index	17CV63 / C-311
Academic Year	2019-20
Semester	VI

Course outcomes (COs)

C311.1	Make use of the knowledge of highway development programs and the concepts of selection of various alternative proposals.
C311.2	Make use of the concepts of various surveys for proposing new alignment and realignment projects and design of road geometrics.
C311.3	Evaluate the engineering properties of the materials and suggest the suitability of the same for pavement construction and Design structural components of pavement and drainage.
C311.4	Apply knowledge on Mix Design of soil aggregate mixes and Pavement Construction methodology in construction
C311.5	Evaluate the highway economics by few select methods and also will have a basic knowledge of various highway financing concepts.

COURSE DETAILS

Course Name	WATER SUPPLY AND TREATMENT ENGINEERING
Course Code/Course Index	17CV64 / C-312
Academic Year	2019-20

Semester	VI

Course outcomes (COs)

C312.1	Analyze the variation of water demand and to estimate water requirement for a community.
C312.2	Evaluate the sources and conveyance systems for raw and treated water.
C312.3	Utilize the basic principles, concepts and Design of unit operations and physical treatment method
C312.4	Design chemical treatment methods to ensure safe and potable water Supply.
C312.5	Make use of the basic concepts conveyance of water, water transport and its distribution

COURSE DETAILS

Course Name	ALTERNATIVE BUILDING MATERIALS
Course Code/Course Index	17CV653 / C-3133
Academic Year	2019-20
Semester	VI

Course outcomes (COs)

C3133.1	Solve the problems of Environmental issues concerned to building materials and cost effective building technologies
C3133.2	Identify appropriate type of masonry unit and mortar, design of structural masonry under axial compression.
C3133.3	Identify the various alternative building materials and suggest agro and industrial wastes in manufacturing of building.
C3133.4	Recommend various types of alternative building technologies and design of energy efficient building by considering local climatic condition and building material.
C3133.5	Identify new technologies for manufacture of alternative building materials and Suggest basic cost saving techniques in planning, design and construction.

COURSE DETAILS

Course Name	WATER RESOURCES MANAGEMENT
Course Code/Course Index	17CV661 / C-3141
Academic Year	2019-20
Semester	VI

Course outcomes (COs)

C3141.1	Understand the basic concept hydrologic cycle for different sources of water
C3141.2	Make use of concept of Water Resources Planning and Management
C3141.3	Apply the principles of integrated water resources management.

C3141.4	Explain the legal framework of water policy.
C3141.5	Classify the different methods of water harvesting.

COURSE DETAILS

Course Name	**Software Application Lab**
Course Code/Course Index	17CVL67/ C-315
Academic Year	2019-20

Course outcomes:

C315.1	Make use of the industry standard software in a professional set up and Understand the elements of finite element modeling, specification of loads and boundary condition, performing analysis and interpretation of results for final design
C315.2	Understanding basics of Project management and GIS
C315.3	Develop customized automation tools

COURSE DETAILS

Course Name	EXTENSIVE SURVEY PROJECT/CAMP
Course Code/Course Index	17CVP68 / C-316
Academic Year	2019-20

Course outcomes:

C316.1	Apply skills to handle conventional & modern surveying equipments for location of objects and setting out works
C316.2	Interpret and analyze data to prepare drawings and reports of engineering projects like water supply, highway and irrigation and town planning
C316.3	Apply the technical difficulties at site and managerial skills to tackling them in completing the assigned survey work
C316.4	Function as a team member imparting networking, communicating effectively in gaining lifelong learning process

COURSE DETAILS

Course Name	MUNICIPAL AND INDUSTRIAL WASTEWATER ENGINEERING
Course Code/Course Index	17CV71: C401
Academic Year	2020-21
Semester	VII

Course outcomes (COs)

C401.1	Understand the importance of sanitation and its need in the daily life and estimation of wastewater drainage discharge.
C401.2	Design the different components of sewerage networks and methods of disposal of treated effluents.
C401.3	Analyse the different characteristics of wastewater and to understand the different treatment methodologies.
C401.4	Apply the principals of Industrial effluent treatment process for industrial wastewater.
C401.5	Evaluate the manufacturing processes of different industrial products and the treatment of industrial effluents.

COURSE DETAILS

Course Name	Design of RCC and Steel Structures
Course Code/Course Index	17CV72: C402
Academic Year	2020-21
Semester	7th

Course outcomes (COs)

C402.1	Adapt the procedural knowledge in designs of RC retaining wall & combined footing
C402.2	Follow Design procedures as per codal provisions and skills to arrive at structurally safe water tank and portal frames
C402.3	Analyze and design of welded plate girder and roof truss as per codal provisions
C402.4	Design of gantry girder with all necessary check

COURSE DETAILS

Course Name	HYDROLOGY AND IRRIGATION ENGINEERING
Course Code/Course Index	17CV73: C403
Academic Year	2020-21
Semester	7TH

Course outcomes (COs)

C403.1	Describe hydrologic cycle and analyse the rainfall data
C403.2	Compute the losses from precipitation
C403.3	Develop rainfall - runoff relationship analyse hydrographs and their components
C403.4	Interpret the basic requirements of irrigation, crops and various irrigation techniques
C403.5	Discuss the methodology of computing the canal capacity, and reservoir capacity

COURSE DETAILS

Course Name	GROUND WATER & HYDRAULICS
Course Code/Course Index	17CV742 / C-4042
Semester	7th
Academic Year	2020-21

Course outcomes:

C4042.1	Interpret the importance, occurrence and distribution of subsurface water
C4042.2	Describe the fundamental properties of aquifer and movement of ground water
C4042.3	Derive the fundamental equations governing ground water movement
C4042.4	Find the zones of ground water resources by various techniques
C4042.5	Select particular type of well and increase the ground water storage

COURSE DETAILS

Course Name	URBAN TRANSPORT PLANNING
Course Code/Course Index	17CV751 / C-4051
Semester	7th
Academic Year	2020-21

Course outcomes:

C4051.1	Identify the different types of transportation systems and urban transport planning.
C4051.2	Design, Conduct and Administer survey to provide the data required for transportation planning.
C4051.3	Supervise the process of data collection about travel behavior and analyze the data.
C4051.4	Develop and calibrate modal split, trip generation rates for specific types of land use development.
C4051.5	Adopt the steps that are necessary to complete a long term transportation planning

COURSE DETAILS

Course Name	ENVIRONMENTAL ENGINEERING LABORATORY
Course Code/Course Index	17CVL76
Academic Year	2020-21
Semester	VII

Course outcomes (COs)

C406.1	Compare the result with standards and discuss based on the purpose of analysis.
C406.2	Determine chemical, physical and biological characteristics of water and wastewater.
C406.3	Determine optimum dosage of coagulant, Residual chlorine and available chlorine
C406.4	Determination of Nitrates, Iron and manganese by Spectrophotometer and turbidity by nephelometer.

COURSE DETAILS

Course Name	COMPUTER AIDED DETAILING OF STRUCTURES
Course Code/Course Index	17CV77 / C-407
Semester	7th
Academic Year	2020-21

Course outcomes:

C407.1	Create the structural drawings of different components of the buildings.
C407.2	Create the Structural drawings of Retaining wall & Water tank.
C407.3	Interpret the design data to draw connection details, built up sections and column bases.
C407.4	Create the Structural drawings of roof truss & girder

COURSE DETAILS

Course Name	PROJECT WORK
Course Code/Course Index	17CVP78 / C 408
Academic Year	2020-21
Semester	7th

Course Outcomes:

C408.1	Define the engineering problems then develop appropriate engineering knowledge, skills and technique to analyse and solve them.
C408.2	Perceive literature survey in the field of civil engineering to develop simple and innovative solutions.
C408.3	Choose effective and efficient tools and resources available to demonstrate and execute the work collaboratively as a professional engineer not affecting social, environmental and cultural impacts

COURSE DETAILS

Course Name	QUANTITY SURVEYING AND CONTRACTS MANAGEMENT
Course Code/Course Index	17CV81 / C-409
Semester	8th
Academic Year	2020-21

Course outcomes:

C409.1	Student able to determine the quantity calculation of various components of building and it's cost analysis
C409.2	To determine the volume of earth work by various approaches for roads ,canals and hilly areas and also quantity calculation of Steel truss, Manhole and Septic Tank
C409.3	Students able to calculate rate and analysis for various items of building and clear knowledge about the specification
C409.4	Students able to know Tender and its process, also various contract forms & types of contracts.
C409.5	Knowledge about the various types of contract management and Valuation & its process

COURSE DETAILS

Course Name	DESIGN OF PRE STRESSED CONCRETE ELEMENTS
Course Code/Course Index	17CV82 / C-410
Semester	8th
Academic Year	2020-21

Course outcomes:

C410.1	Understand PSC members and requirement for present scenario.
C410.2	Understand the effectiveness of the PSC member design after studying losses
C410.3	Analyze and design of PSC members under flexur
C410.4	Capable of analyzing the PSC element under shear and finding its efficiency
C410.5	Design anchorages for PSC beam and understand Composite Sections

COURSE DETAILS

Course Name	PAVEMENT DESIGN
Course Code/Course Index	17CV833 / C-4113
Semester	8th
Academic Year	2020-21

Course outcomes:

C4113.1	Student will be able to differentiate the different types of pavements and its functions, also calculate the stresses and deflections of the pavement
C4113.2	Apply knowledge to solve problems the Equivalent single wheel load and it's repetitions of loads, design of flexible pavement
C4113.3	Summarize the failures, causes and maintenances of flexible Pavement
C4113.4	Solve problems on computations of stresses and deflections in different pavements and also design of rigid pavement
C4113.5	Summarize the failures, causes and maintenances of Rigid Pavement

COURSE DETAILS

Course Name	**INTERNSHIP/PROFESSIONAL PRACTICE**
Course Code	**17CV84 - C412**
Semester	**8TH**
Academic Year	2020-21

Course outcomes:

C412.1	Apply appropriate knowledge and skills to identify, formulate, analyze, and solve complex engineering problem
C412.2	Make use of modern tools and processes to solve the engineering problems and learn social and environmental responsibilities
C412.3	Decide to work with professional ethics effectively as a member /leader and communicate effectively
C412.4	Take part in Project management and maintain their competency in the challenging work environment

COURSE DETAILS

Course Name	PROJECT WORK
Course Code/Course Index	17CVP85 / C 413
Academic Year	2020-21
Semester	8TH

Course Outcomes:

C413.1	Identify and analyze the problems then apply appropriate engineering knowledge, skills and technique to solve them.
C413.2	Perceive and evaluate the knowledge of research in the field of civil engineering to develop simple and innovative solutions.
C413.3	Select effective and efficient tools and resources available to demonstrate and execute the work collaboratively as a professional engineer not affecting social, environmental

	and cultural impacts
C413.4	Build and present a clear and coherent presentation of the work to a range of technical and non technical audiences
C413.5	Develop a project report that has a clear, coherent argument, logical structure, correct grammar and proper references

COURSE DETAILS

Course Name	**Seminar on current trends in Engineering and Technology**
Course Code	**17CVS86 - C414**
Semester	**8TH**
Academic Year	2020-21

Course outcomes:

C414.1	Demonstrate a sound technical knowledge of the selected seminar topic and ability to understand and utilize technical resources
C414.2	Demonstrate an ability to present ideas effectively during seminars, public presentations, to faculty examiners, panel of experts
C414.3	Demonstrate the ability to speak and debate with an appreciation for complex social and cultural sensibilities.
C414.4	Ability to write technical documents related to the work completed