



SRIKRISHNA INSTITUTE OF TECHNOLOGY

(Accredited by NAAC Approved by A.I.C.T.E. New Delhi, Recognized by Govt. of Karnataka & Affiliated to V.T.U., Belagavi)

#29, Chimney Hills, Hesaraghatta Main Road, Chikkabanavara Post, Bengaluru - 560090

Department of Civil Engineering

SEM: 3

SCHEME: 2021

COURSE OUTCOMES

Course: TRANSFORM CALCULUS, FOURIER SERIES AND NUMERICAL TECHNIQUES

Course Code: 21MAT31

SINo	Course Outcomes
1	To solve ordinary differential equations using Laplace transform.
2	Demonstrate the Fourier series to study the behaviour of periodic functions and their applications in system communications, digital signal processing and field theory.
3	To use Fourier transforms to analyze problems involving continuous-time signals and to apply Z-Transform techniques to solve difference equations
4	To solve mathematical models represented by initial or boundary value problems involving partial differential equations
5	Determine the extremals of functional using calculus of variations and solve problems arising in dynamics of rigid bodies and vibrational analysis.

Course: Geodetic Engineering

Course Code: 21CV32

SINo	Course Outcomes
1	Execute survey using compass and plane table
2	Find the level of ground surface and Calculation of area and volumes
3	Operate theodolite for field execution
4	Estimate the capacity of reservoir
5	Interpret satellite imageries

Course: STRENGTH OF MATERIALS

Course Code: 21CV33

SINo	Course Outcomes
1	Evaluate the behaviour when a solid material is subjected to various types of forces (namely Compressive, Tensile, Thermal, Shear, flexure, Torque, internal fluid pressure) and estimate stresses and corresponding strain developed. (L3)
2	Estimate the forces developed and draw schematic diagram for stresses, forces, moments for simple beams with different types of support and are subjected to various types of loads (L3).
3	Evaluate the behaviour when a solid material is subjected to Torque and internal fluid pressure and estimate stresses and corresponding strain developed. (L3)
4	Distinguish the behaviour of short and long column and calculate load at failure & explain the behaviour of spring to estimate deflection and stiffness (L3)
5	Examine and Evaluate the mechanical properties of various materials under different loading conditions



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Course: Earth Resources and Engineering

Course Code: 21CV34

SINo	Course Outcomes
1	Apply geological knowledge in different civil engineering practice.
2	Students will acquire knowledge on durability and competence of foundation rocks, and confidence enough to use the best building materials.
3	competent enough to provide services for the safety, stability, economy and life of the structures that they construct .
4	Able to solve various issues related to ground water exploration, build up dams, bridges, tunnels which are often confronted with ground water problems.
5	Intelligent enough to apply GIS, GPS and remote sensing as a latest tool in different civil engineering for safe and solid construction.

Course: COMPUTER AIDED BUILDING PLANNING AND DRAWING

Course Code: 21CVL35

SINo	Course Outcomes
1	Prepare, read and interpret the drawings in a professional set up.
2	Know the procedures of submission of drawings and Develop working and submission drawings for building.
3	Plan and design of residential or public building as per the given requirements.

Course: SOCIAL CONNECT & RESPONSIBILITIES

Course Code: 21SCR36

SINo	Course Outcomes
1	Prepare, read and interpret the drawings in a professional set up.
2	Know the procedures of submission of drawings and Develop working and submission drawings for building.
3	Plan and design of residential or public building as per the given requirements.

Course: Fire Safety in Buildings

Course Code: 21CV385

SINo	Course Outcomes
1	Understand types of fire, combustion process and fire resistance 2. 3. 4. 5.
2	Plan for fire safety and design of lifts
3	Design flow network in buildings
4	Design of electrical systems and maintenance
5	Perform health evaluation of buildings and suggest remedies



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SEM: 4

SCHEME: 2021

AY: 2022-23

COURSE OUTCOMES

Course: Fluid Mechanics and Hydraulics

Course Code: 21CV42

SINo	Course Outcomes
1	Understand fundamental properties of fluids and solve problems on Hydrostatics
2	Apply Principles of Mathematics to represent Kinematics and Bernoulli's principles
3	Compute discharge through pipes, notches and weirs
4	Design of open channels of various cross sections
5	Design of turbines for the given data and understand their operation characteristics

Course: PUBLIC HEALTH ENGINEERING Course Code:

21CV43

SINo	Course Outcomes
1	Estimate average and peak water demand for a community.
2	Evaluate water quality and environmental significance of various parameters and plan suitable treatment system
3	Design the different units of water treatment plant
4	Understand and design the various units of wastewater treatment plant
5	Acquire capability to conduct experiments and estimate the concentration of different parameters and compare the obtained results with the concerned guidelines and regulations.

Course: ANALYSIS OF STRUCTURES

Course Code: 21CV44

SINo	Course Outcomes
1	Evaluate slope and deflections in beams using geometrical methods.
2	Determine deflections in trusses and frames using energy principles.
3	Analyse arches and cables for stress resultants.
4	Apply slope deflection method in analysing indeterminate structures and construct bending moment diagram.
5	Analyse continuous beams, frames and trusses using stiffness matrix method of analysis.

Course: Earth Resources and Engineering Laboratory

Course Code: 21CVL46



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SINo	Course Outcomes
1	Comprehend the relations between minerals and rocks based on their physical properties
2	Assess the suitability of materials used in building construction
3	Differentiate geological investigations necessary for the construction of dams, bridges, and tunnels
4	Describe the groundwater investigation using resistivity methods
5	Understand the applications of Geospatial technology in Civil Engineering.

Course: Constitution of India and Professional Ethics

Course Code: 21CIP37/47

SINo	Course Outcomes
1	Have constitutional knowledge and legal literacy
2	Understand Engineering and Professional ethics and responsibilities of Engineers.

Course: Data Manipulation with Python Pandas

Course Code: 21CV481

SINo	Course Outcomes
1	Perform operations on data structure and data manipulation
2	Develop solutions using matrix method
3	Manage and maintain large data base

Course: GIS with Quantum GIS

Course Code: 21CV482

SINo	Course Outcomes
1	Use open source software for civil engineering applications
2	Various tools in QGIS software
3	Create thematic layers with attribute data
4	Generate maps for decision making

Course: Technical writing skills

Course Code: 21CV483

SINo	Course Outcomes
1	Effectively communicate in technical matters
2	Practice preparation of gist, abstract and notes from a technical article.
3	Prepare a business proposals and reports.
4	Write and respond in social media and write blogs.



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Course: PROJECT FINANCE

Course Code: 21CV484

SINo	Course Outcomes
1	Prepare financing and Legal reports for projects
2	Perform analysis of projects for feasibility and viability
3	Provide details on risk management and funding
4	Manage and maintain projects with confidence

SEM: 5

SCHEME: 2021

COURSE OUTCOMES

Course: Hydrology and Water Resource Engineering Course

Code: 21CV51

SINo	Course Outcomes
1	Provide a background in the theory of hydrological processes and their measurement
2	Estimate runoff and develop unit hydrographs.
3	Find the water requirement and frequency of irrigation for various crops.
4	Find the canal capacity and compute the reservoir capacity.
5	Analyze floods and droughts. Emphasize on the importance of conservation of water and water bodies.

Course: TRANSPORTATION ENGINEERING

Course Code: 21CV52

SINo	Course Outcomes
1	Acquire the capability of proposing a new alignment or re-alignment of existing roads, conduct necessary field investigation for generation of required data.
2	Evaluate the engineering properties of the materials and suggest the suitability of the same for pavement construction.
3	Design road geometrics, structural components of pavement and drainage.
4	Evaluate the highway economics by few select methods and also will have a basic knowledge of various highway financing concepts.

Course: DESIGN OF RC STRUCTURAL ELEMENTS

Course Code: 21CV53

SINo	Course Outcomes
1	Understand the design philosophy and principles.
2	Solve engineering problems of RC elements subjected to flexure, shear and torsion.



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3	Demonstrate the procedural knowledge in design of RC structural elements such as slabs, columns and footings.
4	Owns professional and ethical responsibility.

Course: GEOTECHNICAL ENGINEERING

Course Code: 21CV54

SINo	Course Outcomes
1	Determine the index properties of soil and hence classify the soil
2	Assess the compaction and consolidation characteristics of soil
3	Determine the permeability of soils and assess the seepage in hydraulic structures
4	Evaluate shear parameters of the soil using shear tests
5	Ability to determine bearing capacity of soil and achieve proficiency in proportioning shallow isolated and combined footings for uniform bearing pressure

Course: GEOTECHNICAL ENGINEERING LABORATORY

Course Code: 21CVL55

SINo	Course Outcomes
1	Physical and index properties of the soil
2	Classify based on index properties and field identification
3	To determine OMC and MDD, plan and assess field compaction program
4	Shear strength and consolidation parameters to assess strength and deformation characteristics
5	In-situ shear strength characteristics (SPT-Demonstration)

Course: Environmental Studies

Course Code: 21CIV57

SINo	Course Outcomes
1	Understand the principles of ecology and environmental issues that apply to air, land, and water issues on a global scale
2	Develop critical thinking and/or observation skills, and apply them to the analysis of a problem or question related to the environment.
3	Demonstrate ecology knowledge of a complex relationship between biotic and abiotic components.
4	Apply their ecological knowledge to illustrate and graph a problem and describe the realities that managers face when dealing with complex issues.



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Course: Data Analysis with Python

Course Code: 21CV581

SINo	Course Outcomes
1	Use online data sources for solving problems
2	Solve statistical problems and interpretation of results
3	Data visualization and graphical representation for decision making
4	Solve problems using artificial neural networks

Course: Software Applications

Course Code: 21CV582

SINo	Course Outcomes
1	Determine the forces in the truss members
2	Analyze and design the truss
3	Analyze and design industrial structures

Course: Gender Sensitisation

Course Code: 21CV583

SINo	Course Outcomes
1	Appreciate gender issues prevalent in the society.
2	Value the role of each gender in family, society and state.
3	Analyze the gender sensitivity at workplace and evolve proper perception of the other gender.
4	Sensitize oneself towards gender equality.

Course: Quality Control and Quality Assurance

Course Code: 21CV584

SINo	Course Outcomes
1	Realize the importance of quality in construction
2	Apply SQC techniques in different aspects of construction
3	Implement QMS programs at different levels of construction



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Course: Offshore Structures Course Code: 21CV585

SINo	Course Outcomes
1	Acquire knowledge and skill to carry out basic tasks regarding dimensioning and structural design of offshore structures.
2	Estimation of maximum forces on an offshore structure due to operational loads and conduct static and dynamic analyses of fixed platforms.
3	Acquire training in the design of jacket platforms, gravity platforms.
4	Estimate the resistance of platforms against fatigue and accidental loads.
5	Attain knowledge in the physics of corrosion and methods to monitor and prevent corrosion.

SEM: 6

SCHEME: 2021

COURSE OUTCOMES

Course: Construction Management and Entrepreneurship Course Code: 21CV61

SINo	Course Outcomes
1	Understand various management principles of construction industry (L2)
2	Use planning, organizing, scheduling, monitoring and controlling techniques for managing construction activity (L4)
3	Understand importance of quality control and safety in construction. (L2)
4	Understand managing data pertaining to construction project. (L4)
5	Evaluate alternatives and develop capital budget for different scenarios.

Course: Concrete Technology Course Code: 21CV62

SINo	Course Outcomes
1	Assess and infer various properties of cement, cementitious materials, Fine and coarse aggregate as per codal provision and specifications (L2)
2	Design the concrete mix for the given materials as per IS: 10262-2019 provisions (L4)
3	Understand the manufacturing process and assess the quality of green (L2)
4	Describe the properties of fresh and hardened concrete – Strength and Durability aspects (L3)
5	Examine and Evaluate properties of Cement and Concrete



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Course: DESIGN OF STEEL STRUCTURAL ELEMENTS

Course Code: 21CV63

SINo	Course Outcomes
1	Possess knowledge of Steel Structures Advantages and Disadvantages of Steel structures, steel code provisions and plastic behaviour of structural steel.
2	Understand the Concept of Bolted and Welded connections.
3	Understand the Concept of Design of compression members, built-up columns and column splices
4	Understand the Concept of Design of tension members, simple slab base and gusseted base.
5	Understand the Concept of Design of laterally supported and un-supported steel beams.

Course: Design of Pre-Stressed Concrete Structures

Course Code: 21CV641

SINo	Course Outcomes
1	Understand the requirement of PSC members for present scenario.
2	Analyse the stresses encountered in PSC element during transfer and at working.
3	Understand the effectiveness of the design of PSC after studying losses
4	Capable of analyzing the PSC element and finding its efficiency.
5	Design PSC beam for different requirements.

Course: Applied Geotechnical Engineering

Course Code: 21CV642

SINo	Course Outcomes
1	Ability to plan and execute geotechnical site investigation program for different civil engineering projects
2	Understanding of stress distribution and resulting settlement beneath the loaded footings on sand and clayey soils
3	Ability to estimate factor of safety against failure of slopes and to compute lateral pressure distribution behind earth retaining structures
4	Ability to determine bearing capacity of soil and achieve proficiency in proportioning shallow isolated and combined footings for uniform bearing pressure
5	Capable of estimating load carrying capacity of single and group of piles



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Course: RAILWAYS, HARBOUR, TUNNELING AND AIRPORTS

Course Code: 21CV643

SINo	Course Outcomes
1	Acquire capability of choosing alignment and also design geometric aspects of railway system, runway and taxiway.
2	Suggest and estimate the material quantity required for laying a railway track and also will be able to determine the hauling capacity of a locomotive.
3	Develop layout plan of airport, harbour, dock and will be able to relate the gained knowledge to identify required type of visual and/or navigational aids for the same.
4	Apply the knowledge gained to conduct surveying, understand the tunnelling activities.

Course: Design Concepts in Building Services Course

Code: 21CV644

SINo	Course Outcomes
1	Describe the basics of house plumbing and wastewater collection and disposal.
2	Discuss the safety and guidelines with respect to fire safety.
3	Describe the issues with respect to quantity of water, rainwater harvesting and roof top harvesting.
4	Understand and implement the requirements of thermal comfort in buildings

Course: Groundwater Hydraulics

Course Code: 21CV645

SINo	Course Outcomes
1	Explain the importance of Groundwater
2	Paraphrasing the Characteristics of aquifers
3	Estimate the quantity of groundwater by various methods
4	Analyse the zones of groundwater resource
5	Analyse the quality of groundwater and understand Techniques of modeling



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Course: ALTERNATE BUILDING MATERIALS

Course Code: 21CV646

SINo	Course Outcomes
1	Solve the problems of Environmental issues concerned to building materials and cost effective building technologies
2	Select appropriate type of masonry unit and mortar for civil engineering constructions; also they are able to Design Structural Masonry Elements under Axial Compression.
3	Analyze different alternative building materials which will be suitable for specific climate and in an environmentally sustainable manner. Also capable of suggesting suitable agro and industrial wastes as a building material.
4	Recommend various types of alternative building materials and technologies and design a energy efficient building by considering local climatic condition and building material.

Course: Remote Sensing and GIS

Course Code: 21CV651

SINo	Course Outcomes
1	Understand and remember the principle of Remote Sensing (RS) and Geographical Information Systems (GIS) data acquisition and its applications.
2	Apply RS and GIS technologies in various fields of engineering and social needs
3	Analyze and evaluate the information obtained by applying RS and GIS technologies.
4	Create a feasible solution in the different fields of application of RS and GIS

Course: TRAFFIC ENGINEERING

Course Code: 21CV652

SINo	Course Outcomes
1	Understand the human factors and vehicular factors in traffic engineering design.
2	Conduct different types of traffic surveys and analysis of collected data using statistical concepts.
3	Use an appropriate traffic flow theory and to comprehend the capacity & signalized inter-section analysis.
4	Understand the basic knowledge of Intelligent Transportation System.



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Course: Occupational Health and Safety Course

Code: 21CV653

SINo	Course Outcomes
1	Identify hazards in the workplace that pose a danger or threat to their safety or health, or that of others.
2	Control unsafe or unhealthy hazards and propose methods to eliminate the hazard.
3	Present a coherent analysis of a potential safety or health hazard both verbally and in writing, citing the Occupational Health and Safety Regulations as well as supported legislation.
4	Discuss the role of health and safety in the workplace pertaining to the responsibilities of workers, managers, supervisors.
5	Identify the decisions required to maintain protection of the environment, workplace as well as personal health and safety.

Course: CONSERVATION OF NATURAL RESOURCES

Course Code: 21CV654

SINo	Course Outcomes
1	Apprehend various components of land as a natural resource and land use planning.
2	Know availability and demand for water resources as applied to India.
3	Analyze the components of air as a resource and its pollution.
4	Discuss biodiversity & its role in ecosystem functioning.
5	Critically appreciate the environmental concerns of today