



Moodlakatte Institute of Technology

(A Unit of Moodlakatte Nagarathna Bhujanga Shetty Trust (R.))

(Approved by AICTE, New Delhi & Affiliated to VTU, Belagavi)

Moodlakatte - 576 217, Kundapura Taluk, Udupi District, Karnataka

Course outcome statements of 2018-2022 Batch

The below table represents the course outcome statements of the courses offered from first semester to eight semester of civil engineering 2018-2023 Batch.

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Course Name	CALCULUS AND LINEAR ALGEBRA
Course Code/Course Index	18MAT11 -C101

Course outcomes (COs)

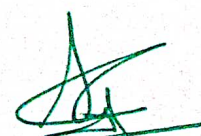
C101.1	Apply the knowledge of calculus to solve problems related to polar curves and its applications in determining the bentness of a curve.
C101.2	Learn the notion of partial differentiation to calculate rates of change of multivariate functions and solve problems related to composite functions and Jacobian's.
C101.3	Apply the concept of change of order of integration and variables to evaluate multiple integrals and their usage in computing the area and volumes.
C101.4	Solve first order linear/nonlinear differential equation analytically using standard methods.
C101.5	Make use of matrix theory for solving system of linear equations and compute Eigen values and Eigen vectors required for matrix diagonalization process.

COURSE DETAILS

Course Name	ENGINEERING PHYSICS
Course Code/Course Index	18PHY12/22 / C-102

Course outcomes (COs)

C102.1	Understand various types of oscillations and their implications, the role of Shock waves in various fields and recognize the elastic properties of materials for engineering applications
C102.2	Realize the interrelation between time varying electric field and magnetic field, the transverse nature of the EM waves and their role in optical fiber communication
C102.3	Compute Eigen values, Eigen functions, momentum of Atomic and subatomic particles using Time independent 1-D Schrodinger's wave equation
C102.4	Apprehend theoretical background of laser, construction and working of different types of laser and its applications in different fields
C102.5	Understand various electrical and thermal properties of materials like conductors, semiconductors and dielectrics using different theoretical models



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Course Name	BASIC ELECTRICAL ENGINEERING
Course Code/Course Index	18ELE13/23: C-103

Course outcomes (COs)

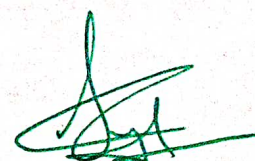
C103.1	Analyse the behaviour of three looped DC circuit using Ohms law and Kirchhoff's Laws, discuss the generation of single-phase AC.
C103.2	Infer the phasor relationship between voltage and current in series and parallel combination of single-phase R-L-C circuit. Identify the relationship between line and phase quantities in a three-phase AC circuit.
C103.3	Illustrate the concept of transformers in transmission and distribution of electric power. Recognize the need for electrical safety rules and standards.
C103.4	Outline the relation between terminal voltage, load voltage, flux linkage, torque and speed in DC Motors and Generators.
C103.5	Apply the working principle of synchronous and induction motor for industrial applications and analyze relationship between speed and frequency.

COURSE DETAILS

Course Name	ELEMENTS OF CIVIL ENGINEERING AND MECHANICS
Course Code/Course Index	18CV14/24 : C104

Course Outcomes:

C104.1	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.
C104.2	Compute the resultant forces and the effect of equilibrium in concurrent force system and action of friction in various bodies.
C104.3	Compute the resultant forces and the effect of equilibrium in non concurrent force system and study of support reaction in beams.
C104.4	Locate the centroid and compute moment of inertia of composite, plane and curved figures
C104.5	Analyse the basics concept of kinematics to know the motion of particles and to evaluate their speed, time, acceleration etc.



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COURSE DETAILS

Course Name	ENGINEERING GRAPHICS
Course Code/Course Index	18EGDL15/25: C-105

Course Outcomes:

C105.1	Students will be able to visualize and draw orthographic projections of points and lines
C105.2	Students will be able to visualize and draw orthographic projections of points planes
C105.3	Students will be able to visualize and draw orthographic projection of solids
C105.4	Students will be able to visualize and draw isometric views of solids and combination of solids
C105.5	Students will be able to visualize and draw development of lateral surfaces of solids

COURSE DETAILS

Course Name	ENGINEERING PHYSICS LABORATORY
Course Code/Course Index	18PHYL16/26 : C-106
Academic Year	2018-19

Course outcomes:

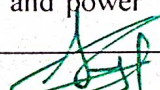
C106.1	Apprehend the concepts of interference of light, diffraction of light, Fermi energy and magnetic effect of current
C106.2	Understand the principles of operations of optical fibers and semiconductor devices such as Photodiode, and NPN transistor using simple circuits
C106.3	Determine elastic moduli and moment of inertia of given materials with the help of suggested procedures
C106.4	Recognize the resonance concept and its practical applications
C106.5	Understand the importance of measurement procedure, honest recording and representing the data, reproduction of final results

COURSE DETAILS

Course Name	BASIC ELECTRICAL ENGINEERING LABORATORY
Course Code/Course Index	18ELEL18/28 : C107
Academic Year	2018-19

Course outcomes:

C107.1	Recognize and Demonstrate the fundamentals of AC and DC supply, fuse, MCB, earth resistance and two-way and three-way control of lamp.
C107.2	Evaluate current and voltage using Ohms law and Kirchoff's Laws for the given two-looped DC circuit, measure resistance and inductance of choke coil, power and power factor of incandescent lamp, fluorescent lamp, and LED lamp.


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C107.3	Analyse the relationship between phase and line quantities and calculate the total power in a three-phase circuit using two wattmeter method.
C107.4	Demonstrate and identify the parts of the UPS, DC machines, Induction machine and Synchronous machine.

COURSE DETAILS

Course Name	TECHNICAL ENGLISH - I
Course Code/Course Index	18EGH18/28 : C108

Course outcomes:

C108.1	Use grammatical english and essentials of language skills and identify the nuances of phonetics, intonation and flawless pronunciation
C108.2	Implement english vocabulary at command and language proficiency
C108.3	Identify common errors in spoken and written communication
C108.4	Understand and improve the non verbal communication and kinesics
C108.5	Perform well in campus recruitment, engineering and all general competitive examinations

COURSE DETAILS

Course Name	ADVANCED CALCULUS AND NUMERICAL METHODS
Course Code/Course Index	18MAT11 / C-109

Course outcomes:

C109.1	Illustrate the applications of multivariate calculus to understand the solenoidal and irrotational vectors and also exhibit the inter dependence of line, surface and volume integrals.
C109.2	Demonstrate various physical models through higher order differential equations and solve such linear ordinary differential equations.
C109.3	Construct a variety of partial differential equations and solution by exact methods/method of separation of variables.
C109.4	Explain the applications of infinite series and obtain series solution of ordinary differential equations.
C109.5	Apply the knowledge of numerical methods in the modeling of various physical and engineering phenomena

COURSE DETAILS

Course Name	ENGINEERING CHEMISTRY
Course Code/Course Index	18CHE12/22 : C110

Course outcomes (COs)

C110.1	Use of free energy in equilibria, rationalize bulk properties and processes using thermodynamic considerations, electrochemical energy systems
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C110.2	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 electroless plating.
C110.3	Production & consumption of energy for industrialization of country and living standards of people. Electrochemical and concentration cells. Classical, modern batteries and fuel cells. Utilization of solar energy for different useful forms of energy.
C110.4	Environmental pollution, waste management and water chemistry
C110.5	Different techniques of instrumental methods of analysis. Fundamental principles of nanomaterials

COURSE DETAILS

Course Name	C PROGRAMMING FOR PROBLEM SOLVING
Course Code/Course Index	18CPS13/23 / C-111

Course outcomes (COs)

C111.1	Understand the basics of computers, algorithms, syntax and semantics of C programming language
C111.2	Construct a programming solution to the given problem using branching and looping concepts.
C111.3	Construct the programming solutions for searching and sorting algorithms using the concepts of Arrays and String Handling
C111.4	Design and develop the modular programming skills for the given problem using User Defined Function and Recursion function.
C111.5	Analyze the concepts of Pointers, Structures and Preprocessor Directives.

COURSE DETAILS

Course Name	BASIC ELECTRONICS
Course Code/Course Index	18ELN14- C-112

Course outcomes (COs)

C112.1	Understand the basic operation of semiconductor diodes and their applications and to learn IC voltage regulators.
C112.2	Understand the fundamentals and analyze the operation of FET's and SCR's
C112.3	Understand characteristics and parameters of operational amplifier and to design basic applications.
C112.4	Analyze the application of BJT in switching, amplifier and oscillator application and to learn 555 timer IC.
C112.5	Learn fundamentals of digital logics, construct simple combinational and sequential logic circuits and Describe the basic principle of operation of communication system.



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COURSE DETAILS

Course Name	ELEMENTS OF MECHANICAL ENGINEERING
Course Code/Course Index	18ME15/25 : C113

Course outcomes (COs)

C113.1	Students shall demonstrate knowledge associated with various Energy and different kind of boilers
C113.2	Identifying different kinds of energy conversions by using Prime movers such as turbines and I C engines.
C113.3	Learn the operation of Metal removal process using Lathe, drilling, milling, robotics and automation.
C113.4	Fair understanding of application and usage of various engineering materials.
C113.5	To understand the principles of Refrigeration and Air conditioning systems

COURSE DETAILS

Course Name	C PROGRAMMING LABORATORY
Course Code/Course Index	18CPL17/27 : C-114

Course outcomes:

C114.1	Understand the basics of computers, syntax and semantics of C programming language.
C114.2	Demonstrate the different techniques of using branching and looping statements.
C114.3	Understand the concepts of string handling and arrays. Design and develop modular programming skills.
C114.4	Understand the basics of structures and pointers.

COURSE DETAILS

Course Name	ENGINEERING CHEMISTRY LABORATORY
Course Code/Course Index	18CHEL16 / 26 – C115

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.



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COURSE DETAILS

Course Name	TECHNICAL ENGLISH - II
Course Code/Course Index	18EGH18/28 : C116

Course outcomes:

C116.1	Identify Common errors in spoken and written communication
C116.2	Get familiarized with english vocabulary and language proficiency
C116.3	Improve the nature and style of sensible writing and acquire employment and workplace communication skills
C116.4	Improve their technical communication skills through technical reading and writing practices
C116.5	Perform well in the campus recruitment, engineering and all other general competitive examinations.

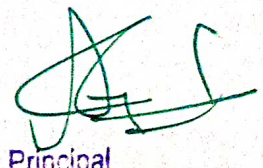
COURSE DETAILS

Course Name	TRANSFORM CALCULUS, FOURIER SERIES AND NUMERICAL TECHNIQUES
Course Code/Course Index	18MAT31 / C-201

CO1	Apply Laplace transform and inverse Laplace transform in solving differential/integral equation arising in network analysis, control systems and other fields of engineering.
CO2	Demonstrate Fourier series to study the behavior of periodic functions and their applications in system communications, digital signal processing and field y.
CO3	Make us of Fourier transform and Z-transform to illustrate discrete/continuous function arising in wave and heat propagation, signals and systems.
CO4	Solve first and second order ordinary differential equations arising in engineering problems using single step and multistep numerical methods.
CO5	Determine the externals of functional using calculus of variations and solve problems arising in dynamics of rigid bodies and vibrational analysis.

Course Name	STRENGTH OF MATERIALS
Course Code/Course Index	18CV32 / C-202

C202.1	Evaluate the basic concepts of the stresses and strains for different materials and strength of structural elements.
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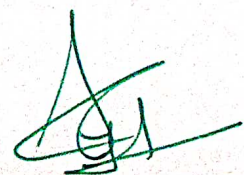
C202.2	Calculate the development of internal forces and resistance mechanism for one dimensional and two dimensional structural elements.
C202.3	Calculate the shear force and Bending Moment for different loading conditions on structural elements.
C202.4	Evaluate the bending and shear stresses developed in the beam and also member subjected to torsion.
C202.5	Evaluate the deflection of beams and also failure theories of columns.

Course Name	FLUID MECHANICS
Course Code	18CV33/C-203

C203.1	Understand 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 Name	BUILDING MATERIALS AND CONSTRUCTION
Course Code/Course Index	18CV34 / C-204

C204.1	Select suitable building materials and test it before using it for construction work.
C204.2	Construct suitable foundation depend on type of soil and choose masonry according to nature of work
C204.3	Catagorize the components of building according to their function and distinguish between floor and roof.
C204.4	Classify door, windows, ventilators, staircases, and formwork according to their use, location, materials, and functions.
C204.5	Compare plastering, pointing, painting and damp proofing which influence on internal and external appearance of structure.



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Course Name	BASIC SURVEYING
Course Code/Course Index	18CV35 / C-205

C205.1	Develop a sound knowledge of fundamental principles of Geodetics.
C205.2	Measure of vertical and horizontal plane, linear and angular dimensions to arrive at solutions to basic surveying problems.
C205.3	Measure of bearings for traversing using compass.
C205.4	Determine the reduced levels of the points from staff readings using auto level.
C205.5	Analyze the obtained spatial data and compute areas and volumes. Represent 3D data on plane figures as contours.

Course Name	ENGINEERING GEOLOGY
Course Code	18CV36/ C-206

C206.1	Apply geological knowledge its role in Civil Engineering Practice
C206.2	Utilize the knowledge on durability and competence of foundation rocks, and confidence enough to use the best building materials.
C206.3	Plan enough for the safety, stability, economy and life of the structures that they construct.
C206.4	Assess to solve various issues related to ground water exploration, build up dams, bridges, tunnels which are often confronted with ground water problems.
C206.5	Make Use of GIS, GPS and remote sensing as a latest tool in different civil engineering construction

Course Name	COMPUTER AIDED BUILDING PLANNING & DRAWING
Course Code/Course Index	18CVL37/ 207

C207.1	Use of the fundamental features of AutoCAD.
C207.2	Use the precision drafting tools in to develop accurate technical drawings.
C207.3	Develop, read and interpret the drawings various components of civil engineering structures in a detailed and visually impressive manner and professional set up.
C207.4	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 Name	BUILDING MATERIALS TESTING LABORATORY
Course Code/Course Index	18CVL38 / C-208



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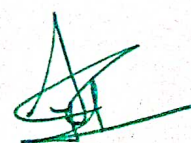
C208.1	Reproduce the knowledge of mathematics and engineering in finding the strength in compression, tension, shear and torsion
C208.2	Examine the physical properties of various materials to evaluate strength characteristics
C208.3	Identify, formulate and solve engineering problems of structural elements subjected to flexure
C208.4	Evaluate the impact of engineering solutions on the society and also will be aware of contemporary issues regarding failure of structures due to

Course Name	CONSTITUTION OF INDIA, PROFESSIONAL ETHICS AND CYBER LAW
Course Code/Course Index	18CPC39/49 / C-209

C209.1	Have constitutional knowledge and legal literacy.
C209.2	Understand Engineering and Professional ethics and responsibilities of Engineers
C209.3	Understand the cybercrimes and cyber laws for cyber safety measures.
C209.4	Have constitutional knowledge and legal literacy.

Course Name	COMPLEX ANALYSIS, PROBABILITY AND STATISTICAL METHODS
Course Code	18MAT41 / C-210

C210.1	Use the concepts of analytic function and complex potentials to solve the problems arising in electromagnetic field theory
C210.2	Utilize conformal transformation and complex integral arising in aerofoil theory, fluid flow visualization and image processing
C210.3	Apply discrete and continuous probability distributions in analyzing the probability models arising in engineering field
C210.4	Make use of the correlation and regression analysis to fit a suitable mathematical model for the statistical data.
C210.5	Construct joint probability distributions and demonstrate the validity of testing the hypothesis.



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Course Name	Analysis of Determinate Structures
Course Code	18CV42 / C211

C211.1	Identify different forms of structural systems and construct ILD.
C211.2	Analyse the beams and trusses subjected to moving loads
C211.3	Evaluate the deflection of the cantilever, simply supported and overhanging beams by different methods
C211.4	Explain the energy principles and energy theorems and its applications to determine the deflections of trusses and bent frames
C211.5	Determine the stress resultants in arches and cables

Course Name	APPLIED HYDRAULICS
Course Code	18CV43/ C-212

C212.1	Apply dimensional analysis to develop mathematical modeling and compute the parametric values in prototype by analyzing the corresponding model parameters
C212.2	Identify the open channels of various cross sections including optimum design sections
C212.3	Apply Energy concepts to fluid in open channel sections, Calculate Energy dissipation, Compute water profiles at different conditions
C212.4	Analyze the performance of Turbines for various design data
C212.5	Evaluate the performance of pumps for various design data

Course Name	CONCRETE TECHNOLOGY
Course Code/Course Index	18CV44 / C-213

C213.1	Select suitable materials which influence on quality of concrete and Understand the Influence of chemical and mineral admixtures on the properties of concrete
C213.2	Develop good workable concrete for construction and identifying the bad and good practice in making concrete



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 Moodlakatte, Kundapura - 576217
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C213.3	Evaluate the performance of concrete in compression, tension, bond, elasticity which are greatly influence on water-cement ratio and gel-space ratio.
C213.4	Design concrete mix using BIS standards to satisfy the durability requirements
C213.5	Perceive a knowledge on present and future revolutionary advancement in concrete and concrete technology

Course Name	ADVANCED SURVEYING
Course Code/Course Index	18CV45 / C-214

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

Course Name	WATER SUPPLY & TREATMENT ENGINEERING
Course Code	18CV46 / C-215

C215.1	Analyze the variation of water demand and to estimate water requirement for a community.
C215.2	Evaluate the available sources of water, quantitatively and qualitatively and make appropriate choice for a community.
C215.3	Determine the drinking water quality standards and to illustrate qualitative analysis of water.
C215.4	Design of physical, chemical and biological treatment methods to ensure safe and potable water Supply.
C215.5	Plan the basic structure of drinking water supply systems and design the component systems of water treatment facilities

Course Name	ENGINEERING GEOLOGY LABORATORY
Course Code/Course Index	18CVL47 / C-216



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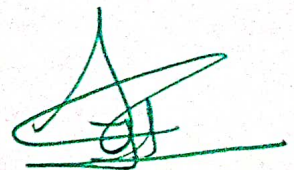
C216.1	Identify the minerals, rocks and utilize them effectively in Civil Engineering practices.
C216.2	Interpret subsurface information such as thickness of soil, weathered zone, depth of hard rock and saturated zone by using geophysical methods.
C216.3	Interpret and understand the geological conditions of the area for implementation of Civil Engineering projects.
C216.4	Adapt the techniques in the interpretation of topographical map and LANDSAT Imageries to find out the lineaments and other structural features for the given area.

Course Name	FLUID MECHANICS AND HYDRAULIC MACHINES LABORATORY
Course Code/Course Index	18CVL48 / C-217

C217.1	Apply the knowledge in finding friction factor for different pipes and also determine coefficients of vertical orifice
C217.2	Determine the rate of flow by notches and weirs
C217.3	Estimate the rate of flow by Venturimeter, Orificemeter and Venturiflume
C217.4	Interpret the output results obtained from impact of jet, pumps, turbine to check the performance

Course Name	VYAVAHARIKA KANNADA (KANNADA FOR COMMUNICATION)
Course Code/Course Index	18KVK39/49: C2181

C2181.1	Understand the grammar in Kannada language and their awareness
C2181.2	Build communication skills in day to day activities
C2181.3	Develop interest on Kannada Language and Literature



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Course Name	ಸಾಂಸ್ಕೃತಿಕ ಕನ್ನಡ
Course Code/Course Index	18KSK39/49; C2182

C2182.1	ಪದವಿ ವಿದ್ಯಾರ್ಥಿಗಳಾಗಿರುವುದರಿಂದ ಸಾಂಸ್ಕೃತಿಕ ಕನ್ನಡದ ಜೊತೆಗೆ ಕ್ರಿಯಾತ್ಮಕ ಕನ್ನಡವನ್ನು, ಕನ್ನಡ ಸಾಹಿತ್ಯ, ಸಂಸ್ಕೃತಿ ಮತ್ತು ನಾಡು ನುಡಿಯ ಪರಿಚಯ ಮಾಡಿಕೊಡುವುದು.
C2182.2	ಕನ್ನಡದಲ್ಲಿ ತಾಂತ್ರಿಕ ವಿಜ್ಞಾನಗಳ ವಿಷಯಕ್ಕೆ ಸಂಬಂಧಿಸಿದ ಹಾಲವರು ವಿಷಯಗಳನ್ನು ಪರಿಚಯ ಮಾಡಿಕೊಡುವುದು
C2182.3	ಕನ್ನಡ ಭಾಷಾಭ್ಯಾಸ. ಸಾಮಾನ್ಯ ಕನ್ನಡ ಹಾಗೂ ಆಡಳಿತ ಕನ್ನಡದ ಪದಗಳ ಪರಿಚಯ ಮಾಡಿಕೊಡುವುದು

Course Name	ಬಳಕೆ ಕನ್ನಡ
Course Code/Course Index	18KKBK39/49; C2182

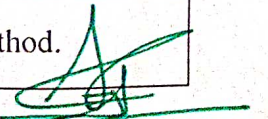
C2182.1	The course will enable the non Kannadiga students to understand, speak, read and write Kannada language and communicate (converse) in Kannada language in their daily life with kannada speakers..
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Course Name	CONSTRUCTION MANAGEMENT & ENTREPRENEURSHIP
Course Code/Course Index	18CV51 / C-301

C301.1	Apply the construction management process and development of project plan.
C301.2	Build the skills needed to manage human resources and materials.
C301.3	Solve variety of issues that are encountered by professional in discharging professional duties.
C301.4	Make use of the role of economics in the decision making process and perform the calculations in regard to interest formulas.
C301.5	Apply the professional obligations effectively with global outlook.

Course Name	ANALYSIS OF INDETERMINATE STRUCTURES
Course Code/Course Index	18CV52 / C-302

C302.1	Determine the moment in indeterminate beams and frames of varying cross section using slope deflection 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.



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Course Name	DESIGN OF RC STRUCTURAL ELEMENTS
Course Code/Course Index	18CV53 / C-303

C303.1	Explain the design philosophy and principles.
C303.2	Solve the engineering problems of RC elements subjected to flexure, shear and torsion.
C303.3	Adapt the procedural knowledge in designs of RC structural elements such as beams and slabs.
C303.4	Utilize the concept of design of RC structural elements such as slabs and staircase for different cases.
C303.5	Utilize the concept of design of RC structural elements such as Column & footings. Also Utilize professional and ethical responsibility in the direction of safe and economic structures

Course Name	BASIC GEOTECHNICAL ENGINEERING
Course Code/Course Index	18CV54/C304

C304.1	Make use of the procedures to determine index properties of any type of soil, classify and list the soil based on its index properties
C304.2	Determine compaction characteristics of soil and apply that knowledge to assess field compaction procedures
C304.3	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
C304.4	Evaluate shear strength parameters of different types of soils using the data of different shear tests and comprehend Mohr-Coulomb failure theory.
C304.5	Solve practical problems related to estimation of consolidation settlement of soil deposits also time required for the same financing concepts.

Course Name	MUNICIPAL WASTEWATER ENGINEERING
Course Code/Course Index	18CV55 / C-305



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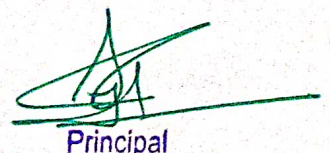
C305.1	Select the appropriate sewer appurtenances and materials in sewer network.
C305.2	Design the different components of sewer networks and methods of disposal of treated effluents.
C305.3	Analyze the different characteristics of wastewater and to understand the different treatment units.
C305.4	Design the various biological treatment units
C305.5	Design various Advanced Oxidation Process (AOPs) and low cost treatment units for rural sanitation.

Course Name	HIGHWAY ENGINEERING
Course Code/Course Index	18CV56 / C-306

C306.1	Make use of the knowledge of highway development programs and the concepts of selection of various alternative proposals.
C306.2	Make use of the concepts of various surveys for proposing new alignment and realignment projects and design of road geometrics.
C306.3	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.
C306.4	Apply knowledge on Mix Design of soil aggregate mixes and Pavement Construction methodology in construction
C306.5	Evaluate the highway economics by few select methods and also will have a basic knowledge of various highway financing concepts.

Course Name	SURVEYING PRACTICE
Course Code	18CVL57 / C-307

C307.1	Apply the basic principles of engineering surveying for linear measurements.
C307.2	Use the compass to measure magnetic bearings and carry out traversing.
C307.3	Perceive effectively field procedures required for a professional surveyor to carry out levelling process.
C307.4	Use of instruments like theodolite to measure horizontal and vertical angles and conventional surveying instruments necessary for engineering practice.



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Moodlakatte Institute of Technology
Moodlakatte, Kundapura - 576217
Udupi Dist, Karnataka

Course Name	CONCRETE & HIGHWAY MATERIALS LABORATORY
Course Code	18CVL58 / C-308

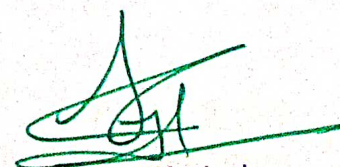
C308.1	Examine the quality and suitability of cement for construction work
C308.2	Analyze appropriate concrete mix and Determine strength and quality of concrete
C308.3	Make use of knowledge acquired on road aggregates and bitumen for their suitability as road material.
C308.4	Determine the suitability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

Course Name	ENVIRONMENTAL STUDIES
Course Code/Course Index	18CIV59 / C-309

C309.1	Understand the principles of ecology and environmental issues that apply to air, land, and water issues on a global scale.
C309.2	Apply their ecological knowledge to illustrate and graph a problem and describe the realities that managers face when dealing with complex issues.
C309.3	Develop critical thinking and observation skills, and apply them to the analysis of a problem or question related to the environment.
C309.4	Build the Global environmental concerns and the individual responsibility to protect environment with environmental protection laws and education.
C309.5	Analyze and evaluate strategies, technologies, and methods for sustainable management of environmental systems and for the remediation or restoration of degraded environments.

Course Name	DESIGN OF STEEL STRUCTURAL ELEMENTS
Course Code/Course Index	18CV61 / C-310

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



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Moodlakatte Institute of Technology

Moodlakatte, Kundapura - 576217

Udupi Dist, Karnataka

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

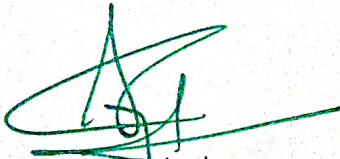
Course Name	APPLIED GEOTECHNICAL ENGINEERING
Course Code/Course Index	18CV62 / C-311

C311.1	Plan and execute geotechnical site investigation program for different civil engineering projects.
C311.2	Analyze the stress distribution and compute settlement in various types of soils.
C311.3	Estimate factor of safety against failure of slopes and to compute lateral pressure distribution behind earth retaining structures
C311.4	Determine bearing capacity of soil and to achieve proficiency in proportioning various types of footing
C311.5	Estimating load carrying capacity of single and group of piles

Course Name	HYDROLOGY AND IRRIGATION ENGINEERING
Course Code/Course Index	18CV63 / C-312

C312.1	Describe hydrologic cycle and analyse the rainfall data
C312.2	Compute the losses from precipitation
C312.3	Develop rainfall - runoff relationship analyse the hydrographs and their components
C312.4	Interpret the basic requirements of irrigation, crops and various irrigation techniques
C312.5	Discuss the methodology of computing the canal capacity, and reservoir capacity

Course Name	ALTERNATIVE BUILDING MATERIALS
Course Code/Course Index	18CV643 / C-3133



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Moodlakatte, Kundapura - 576217
Udupi Dist, Karnataka

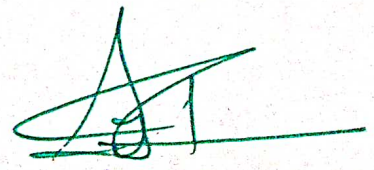
C3133.1	Solve the problems of Environmental issues concerned to building materials and cost effective building technologies
C3133.2	Identify appropriate type of masonry unit and mortar, design of structural masonry under axial compression.
C3133.3	Identify the various alternative building materials and 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 Name	REMOTE SENSING & GIS
Course Code/Course Index	18CV651 / C-3141

C3141.1	Make use of data and delineate various elements from the satellite imagery using their spectral signature.
C3141.2	Analyze different features of ground information to create raster or vector data.
C3141.3	Take part in digital classification and create different thematic maps for solving specific problems.
C3141.4	Build decision based GIS analysis on thematic maps for planning & management.
C3141.5	Apply the modern tool of Remote Sensing and GIS in Natural Resource Management

Course Name	SOFTWARE APPLICATION LABORATORY
Course Code/Course Index	18CVL66/ C-315

C315.1	Make use of the industry software in professional setup for analysis and design of a structures
C315.2	Understand the elements of finite element modelling, specifications of loads and boundary conditions, performing and interpretation of results for final design
C315.3	Interpreting topographical map to study the features of the area using QGIS and Google earth
C315.4	Develop customized automation tools using excel for various civil engineering projects



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Moodlakatte Institute of Technology
Moodlakatte, Kundapura - 576217
Udupi Dist, Karnataka

Course Name	ENVIRONMENTAL ENGINEERING LABORATORY
Course Code/Course Index	18CVL67 / C-316

C316.1	Acquire capability to conduct experiments and estimate the concentration of different parameters.
C316.2	Determine the chemical, physical and biological characteristics of water and wastewater.
C316.3	Determine the optimum dosage of coagulant, Residual chlorine and available chlorine
C316.4	Determination of Nitrates and Iron by Spectrophotometer.

Course Name	EXTENSIVE SURVEY PROJECT /CAMP
Course Code/Course Index	18CVP68 / C-317

C317.1	Apply skills to handle conventional & modern surveying equipments for location of objects and setting out works.
C317.2	Interpret and analyze data to prepare drawings and reports of engineering projects like water supply, highway and irrigation and town planning.
C317.3	Apply the technical difficulties at site and managerial skills to tackling them in completing the assigned survey work.
C317.4	Function as a team member imparting networking, communicating effectively in gaining lifelong learning process.

Course Name	QUANTITY SURVEYING AND CONTRACT MANAGEMENT
Course Code/Course Index	18CV71 / C-318

C318.1	Taking out quantities and work out the cost and preparation of abstract for the estimated cost for various civil engineering works.
C318.2	Prepare detailed and abstract estimates for various road works, structural works and water supply and sanitary works.
C318.3	Prepare the specifications and analyze the rates for various items of work.
C318.4	Assess contract and tender documents for various construction works.
C318.5	Prepare valuation reports of buildings.

Course Name	DESIGN OF RCC AND STEEL STRUCTURES
Course Code/Course Index	18CV72 / C-319

C319.1	Students will acquire the basic knowledge in design of RCC and Steel Structures.
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Moodlakatte Institute of Technology
Moodlakatte, Kundapura - 576217
Udupi Dist, Karnataka

C319.2	Students will have the ability to follow design procedures as per codal provisions and skills to arrive at structurally safe RC and Steel members.
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Course Name	PAVEMENT MATERIALS AND CONSTRUCTION
Course Code/Course Index	18CV733 / C-320

C320.1	Students will be able to evaluate and assess the suitability of any pavement material to be used in various components of pavement by conducting required tests as per IS,IRC specifications
C320.2	Students will be able to formulate the proportions of different sizes of aggregates to suit gradation criteria for various mixes as per MORTH and also design bituminous mixes.
C320.3	Students will be competent to adapt suitable modern technique and equipment for speedy and economic construction.
C320.4	Student will be able to execute the construction of embankment, flexible, rigid pavement and perform required quality control tests at different stages of pavement construction.

Course Name	URBAN TRANSPORT PLANNING
Course Code/Course Index	18CV745 / C-321

C321.1	The question paper will have ten full questions carrying equal marks.
C321.2	Each full question will be for 20 marks.
C321.3	There will be two full questions (with a maximum of four sub- questions) from each module.
C321.4	Each full question will have sub- question covering all the topics under a module.
C321.5	The students will have to answer five full questions, selecting one full question from each module.

Course Name	ENERGY AND ENVIRONMENT
Course Code/Course Index	18ME751/ C-322

C322.1	Understand energy scenario, energy sources and their utilization.
C322.2	Understand various methods of energy storage, energy management and economic analysis.
C322.3	Analyze the awareness about environment and eco system.
C322.4	Understand the environment pollution along with social issues and acts.

Course Name	ENVIRONMENTAL PROTECTION AND MANAGEMENT
Course Code/Course Index	18CV753 / C-323



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Moodlakatte Institute of Technology
Moodlakatte, Kundapura - 576217
Udupi Dist, Karnataka

C323.1	The question paper will have ten full questions carrying equal marks.
C323.2	Each full question will be for 20 marks.
C323.3	There will be two full questions (with a maximum of four sub- questions) from each module.
C323.4	Each full question will have sub- question covering all the topics under a module.
C323.5	The students will have to answer five full questions, selecting one full question from each module.

Course Name	QUANTITY SURVEYING AND CONTRACT MANAGEMENT
Course Code/Course Index	18CVL76 / C-324

C324.1	Prepare detailed working drawings
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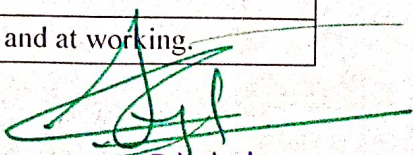
Course Name	GEOTECHNICAL ENGINEERING LABORATORY
Course Code/Course Index	18CVL77 / C-325

C325.1	Physical and index properties of the soil
C325.2	Classify based on index properties and field identification
C325.3	To determine OMC and MDD, plan and assess field compaction program
C325.4	Shear strength and consolidation parameters to assess strength and deformation characteristics
C325.5	In-situshear strength characteristics(SPT-Demonstration)

Course Name	PROJECT PHASE 1
Course Code/Course Index	18CVP78/ C-326

Course Name	DESIGN OF PRE-STRESSED CONCRETE
Course Code/Course Index	18CV81 / C-327

C327.1	Understand the requirement of PSC members for present scenario.
C327.2	Analyze the stresses encountered in PSC element during transfer and at working.


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 Moodlakatte, Kundapura - 576217
 Udupi Dist, Karnataka

C327.3	Understand the effectiveness of the design of PSC after studying losses
C327.4	Capable of analyzing the PSC element and finding its efficiency.
C327.5	Design PSC beam for different requirements.

Course Name	PAVEMENT DESIGN
Course Code/Course Index	18CV7825 / C-328

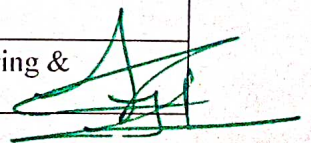
C328.1	Systematically generate and compile required data's for design of pavement (Highway & Airfield).
C328.2	Analyze stress, strain and deflection by bossiness's, bur mister's and Vestergaard's theory
C328.3	Design rigid pavement and flexible pavement conforming to IRC58-2002 and IRC37-2001.
C328.4	Evaluate the performance of the pavement and also develops maintenance statement based on site specific requirements.

Course Name	PROJECT WORK PHASE-2
Course Code/Course Index	18CVP83 / C-329

C329.1	Describe the project and be able to defend it.
C329.2	Develop critical thinking and problem solving skills.
C318.3	Learn to use modern tools and techniques.
C329.4	Communicate effectively and to present ideas clearly and coherently both in written and oral forms.
C329.5	Develop skills to work in a team to achieve common goal.
C329.6	Develop skills of project management and finance.
C329.7	Develop skills of self learning, evaluate their learning and take appropriate actions to improve it.
C329.8	Prepare them for life-long learning to face the challenges and support the technological changes to meet the societal needs.

Course Name	TECHNICAL SEMINAR
Course Code/Course Index	18CVS84 / C-330

C330.1	Develop knowledge in the field of Civil Engineering and other disciplines through independent learning and collaborative study.
C330.2	Identify and discuss the current, real-time issues and challenges in engineering & technology.



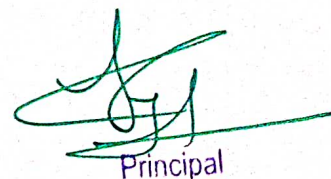
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C330.3	Develop written and oral communication skills.
C330.4	Explore concepts in larger diverse social and academic contexts.
C330.5	Apply principles of ethics and respect in interaction with others.
C330.6	Develop the skills to enable life-long learning

Course Name	INTERNSHIP /PROFESSIONAL PRACTICE
Course Code/Course Index	18CVI85 / C-331

C331.1	To develop students' ability to effectively document their internship experiences, including project details, methodologies, observations, and outcomes, in comprehensive written reports that adhere to professional standards, ensuring clarity, accuracy, and relevance of information presented.
C331.2	To enhance students' oral communication and presentation abilities by providing opportunities to deliver engaging and informative presentations summarizing their internship projects, showcasing key achievements, challenges, and learnings to an audience of peers, faculty, and industry professionals
C331.3	To encourage students to critically reflect on their internship experiences, analysing strengths, weaknesses, and areas for improvement, and prepare them to respond confidently and thoughtfully to questions and inquiries regarding their internship projects during question-and-answer sessions, demonstrating depth of understanding, analytical thinking, and professionalism



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Moodlakatte Institute of Technology
Moodlakatte, Kundapura - 576217
Udupi Dist, Karnataka