Agnihotri College of Engineering

Nagthana Road, Wardha

Department of Civil Engineering

B.Tech 3rd Semester (CBCS)

Course Outcome's

Applied Mathematics III	
BTCVE301T	
After successful completion of this course the student will be able to:	
CO1	Apply Fourier series in the analysis of periodic functions not in terms sine and cosine encountered in engineering problems.
CO2	Solve Partial differential equations of first, higher and second order using elementary techniques; formulate mathematical models to simple problems of vibration of stringers md beams in terms of Partial differential equations and solving with elementary solution techniques.
CO3	Learn the concept of finding maxima and minima of definite integral involving unknown function and its derivatives.
CO4	Learn Eigen value problem and its applications.
CO5	Learn to find an approximate solution of algebraic and transcendental equations, system of linear equations and first order ordinary differential equations by various numerical methods.
CO6	Formulate simple optimization problem and learn to solve it by Graphical method and Simplex method.
FLUID MECHANICS	
BTCVE302T	
After successful completion of this course the student will be able to:	
CO1	Understand the importance and practical significance of various fluid properties
CO2	Comprehend and estimate various forces acting partially or fully submerged bodies
CO3	Evaluate the importance of various parameter on the fluid motion
CO4	Know various flow measuring devices with their practical application
CO5	Illustrate the concept of impulse momentum principle, dimension analysis and model analysis of the fluid phenomenon.
SOLID MECHANICS	
BTCVE303T	
After successful completion of this course the student will be able to:	
CO1	Understand the behavior of materials under different stress and strain conditions
CO2	Evaluate and draw shear force diagram and bending moment diagram and their relations
CO3	Formulate the bending and shear stresses equations and able to draw bending and shear stress diagram
CO4	Formulate slope and Deflection equations for beams subjected to various loads by Macauley's method
CO5	Analyze and evaluate the torsion in circular section, direct and bending Stresses
GEOTECHNICAL ENGINEERING	
BTCVE304T	
After successful completion of this course the student will be able to:	
CO1	Find the index and engineering properties of the oil.
CO2	Determine properties & demonstrate interaction between water and soil
CO3	Analyze and compute principles of compaction and consolidation of soil
CO4	Ability to analyze to calculate bearing capacity, earth pressure and foundation settlement
CO5	Study and identify different types of natural materials like rock, minerals and soil

BUILDING CONSTRUCTION & ELEMENTARY BUILDING DRAWING	
BTCVE305T	
After successful completion of this course the student will be able to:	
CO1	Identify components of a building
CO2	Differentiate and identify types of building materials
CO3	Select the appropriate material for building construction
CO4	Plan various construction related activities and their quality control
CO5	Know and identify latest techniques and material used.
EFFECTIVE TECHNICAL COMMUNIICATION	
BTCVE3O6T	
After successful completion of this course the student will be able to:	
CO1	Identify the common errors in the sentences, transform sentences and articulate the meaning of idioms, phrases and proverb
CO2	Derive the meanings of synonym/antonyms/analogies/technical jargon, etc
CO3	Write need-based official letters/notice/memo/circular/emails /applications, Draft a resume
CO4	Comprehend and analyze the various comprehension
CO5	Compile technical report/manual/project proposal, abstract of the proposal.

Agnihotri College of Engineering

Nagthana Road, Wardha

Department of Civil Engineering

B.Tech 4th Semester (CBCS)

Course Outcome's

CONCRETE TECHNOLOGY	
BTCVE401T	
After successful completion of this course the student will be able to:	
CO1	Think logically for development Concrete technology application in field OF Civil Engineering
CO2	Gain an experience in the implementation of Concrete Materials on Engineering concepts which are applied on Construction Fields
CO3	Understand the process of mix design of concrete
CO4	Differentiate special concrete from conventional concrete.
CO5	Analyze causes of deterioration of concrete components
STRUCTURAL ANALYSIS	
BTCVE402T	
After successful completion of this course the student will be able to:	
CO1	Apply knowledge to analyses determinate and indeterminate structures
CO2	Apply knowledge to perform analysis of beams and frames using Slope Deflection Method and Moment Distribution Method
CO3	Apply knowledge of Influence Line Diagram to analyses structural members for rolling loads
CO4	Apply knowledge of Direct Stiffness Method to analyses Beams and Plane Frames.
CO5	Apply knowledge of Direct Stiffness Method to formulate Stuffiness Matrix, Transformation Matrix, Load Matrix to analyses Plane Truss.
ENVIRONMENTAL ENGINEERING	
BTCVE403T	
After successful completion of this course the student will be able to:	
CO1.	Have knowledge of characteristics of water, drinking water standards and necessity of treatment
CO2.	Design various units of conventional water treatment plant
CO3.	Understand the characteristics of wastewater, necessity of treatment, types of treatment processes
CO4.	Equip with the basic knowledge related to design of waste water treatment
CO5.	Understand of significance of air pollution, solid waste , climate change, geo environment etc.
TRANSPORTATTON BNGTNEERING	
BTCVE404T	
After successful completion of this course the student will be able to:	
CO1	Define and describe different objectives and requirements of Highway Development and Planning, Alignments
CO2	Explain, Discriminate and Design various Geometric Features of Highways & Pavement Design
CO3	Understand, analyze, apply and evaluate the parameters of Traffic Engineering
CO4	Explain and describe various terms in railway engineering and should be able to explain, discriminate and design various geometric features of railway track.
CO5	Understand the aircraft characteristics and terminal area functions. analyze and evaluate the basic runway length, orientation of runway

SURVBYING AND GEOMATICS	
BTCVE405T	
After successful completion of this course the student will be able to:	
CO1	Measure length and bearing of lines using various instruments and calculate area of given field
CO2	Use the theodolite to measure angle and distances for traversing also identify and correct the errors in traverse. Design and lay-out the various types of curves.
CO3	To carry out levelling and contouring also able to determine volume of earthwork
CO4	Use modem instrument like Total work station, GPS, DGPS for surveying and able to prepare maps in CAD
CO5	Use Remote Sensing and Geographical Information System (GIS), UAV Drone and LiDAR Survey.
Mini Project	
BTCVE406P	
After successful completion of this course the student will be able to:	
CO1	Understanding the background and content on progress report on seminar.
CO2	Knowledge about existing system or literature review.
CO3	Technical design and findings of technical content.
CO4	Presentation Skills
CO5	Viva Voice

Agnihotri College of Engineering

Nagthana Road, Wardha

Department of Civil Engineering

B.Tech 5th Semester (CBCS)

Course Outcome's

Hydraulics Engineering	
BTCVE501T	
After successful completion of this course the student will be able to:	
CO1	Understand the concepts related to boundary layer theory and determination of drag & lift forces.
CO2	Apply the knowledge of theories and equations of pipe flow in analyzing and designing the pipe network systems and to discuss effects of water hammer pressures
CO3	Use the concepts of uniform and critical flow through open channels, design of efficient channel sections and application of specific energy concept.
CO4	Understand gradually varied flow analysis and its computation, and its application in open channel flow.
CO5	Understand and apply basics principles related to turbines & Pumps in water Resources planning.
Reinforced Cement Concrete Designs	
BTCVE502T	
After successful completion of this course the student will be able to:	
CO1	Understand the fundamental concepts of working stress method as per IS 456- 2000 and Pre-stressed concrete method.
CO2	Apply the fundamental concepts of limit state method on limit state of serviceability
CO3	Analyze the fundamental concepts of limit state of collapse in flexure, Shear & Bond as per IS 456-2000
CO4	Evaluate the fundamental concepts of limit state of collapse in compression and design of footing as per IS 456-2000.
CO5	Design of Simply supported Two-way slab
Civil Engineering Materials, Testing and Evaluation	
BTCVE503T	
After successful completion of this course the student will be able to:	
CO1	Evaluate the role of materials in Civil Engineering
CO2	Know the mechanical behavior and properties of steel and concrete by standard testing procedures for identifying their performance
CO3	Explain special materials, composite materials and use of new techniques in constructions for satisfying the future needs of industry.
CO4	Exposure to a variety of established material testing procedures/techniques and the relevant codes of practice
CO5	Evaluate and write a technical laboratory report.
Professional Practice, Law & Ethics	
BTCVE504T	
After successful completion of this course the student will be able to:	
CO1	Understand basic purpose of profession, professional ethics and various moral and social issues.
CO2	Analyse various moral issues and theories of moral development
CO3	Realize their roles of applying ethical principles at various professional levels
CO4	Identify their responsibilities for safety and risk benefit analysis
CO5	understand their constructive roles in dealing various global issues

Advanced Building Materials (Elective-I)	
BTCVE505T	
After successful completion of this course the student will be able to:	
CO1	Understand the structural, physical and long-term performance of building materials used in construction.
CO2	Understand special mortars and admixtures used in Civil engineering applications
CO3	Understand the properties of Ceramic materials in construction projects.
CO4	Understand the uses of polymeric materials in construction.
CO5	Understand green building concept and materials.

Advanced Concrete Technology (Elective - II)	
BTCVE506T	
After successful completion of this course the student will be able to:	
CO1	Think logically for development Concrete technology application in field OF Civil Engineering
CO2	Differentiate special concrete from conventional concrete Gain an experience in the implementation of concrete materials on engineering concept which applied on construction field.
CO3	Understand the process of mix design of concrete.
CO4	Gain an experience in the implementation of Concrete Materials on Engineering concepts which are applied on Construction Fields
CO5	To Understand the various factors affecting the concrete and Advanced Non Destructive testing methods.

Agnihotri College of Engineering

Nagthana Road, Wardha

Department of Civil Engineering

B.Tech 6th Semester (CBCS)

Course Outcome's

Estimating and Costing	
BTCVE601T	
After successful completion of this course the student will be able to:	
CO1	Prepare the preliminary estimate for administrative approval & technical sanction for a civil engineering project.
CO2	Write the specification of the works to be undertaken, prepare the tender documents, fill the contracts and make use of knowledge of different contract submission & opening in awarding the work to the contractor.
CO3	Use the concept of SD, EMD, MAS, Running Bill, Final Bill during the entire project
CO4	Use the technique of Rate analysis in estimating the exact cost of material & manpower and hence the entire project.
CO5	Estimate the bill of quantities using different techniques of preliminary & detailed estimation of buildings & roads & Arrive the exact value of the asset (movable & immovable) using different valuation techniques.
Construction Engineering and Management	
BTCVE602T	
After successful completion of this course the student will be able to:	
CO1	Get themselves acquainted with various economic and managerial aspects of construction industry
CO2	Understand the tools and techniques of economic analysis for improving their decision-making skills
CO3	Analyze the structure of market and effects of inflation with special reference to construction industry.
CO4	Understand the importance of marketing management and its effect on construction industry.
CO5	Acquire financial acumen for construction business.
Water Resource Engineering	
BTCHEE603T	
After successful completion of this course the student will be able to:	
CO1	Understand occurrence, movement and distribution of water and estimate water abstractions runoff and hydrographs
CO2	Illustrate different systems and methods of irrigation and estimate the quantity of water required by crops and estimate the quantity of water required by crops
CO3	Estimate reservoir capacity and analyse and design earth dams
CO4	Design and analyse gravity dams and illustrate types of Spillways and energy dissipators
CO5	Design unlined and lined channels and illustrate concepts of other irrigation structures
Urban Transportation Planning (Elective III)	
BTCVE604T	
After successful completion of this course the student will be able to:	
CO1	Explain the characteristic of urban transportation, structure of urban transportation and classification of urban roads

CO2	Describe the objectives of transportation planning, data collection for planning and environmental impact analysis.
CO3	Explain the process of travel demand forecasting & need for integration in different modes of transportation.
CO4	Describe the use of intelligent Transport System and need to accommodate non motorized transports
Open Elective - I (Organizational Behaviour)	
BTCHEE604T	
After successful completion of this course the student will be able to:	
CO1	Understand the concept and importance of organizational behaviour.
CO2	Acquire the knowledge for interpersonal behaviour and transaction analysis.
CO3	Know the different traits and theories of personality.
CO4	Analysis the importance of motivation in organization and types of relationship.
CO5	Relate personal life with professional life and their management.

Agnihotri College of Engineering

Nagthana Road, Wardha

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B.Tech 7th Semester (CBCS)

Course Outcome's

Design of Steel Structures	
BTCVE701T	
After successful completion of this course the student will be able to:	
CO1	Use the knowledge of structural properties in assessing its strength and understand design philosophy.
CO2	Apply the knowledge of various techniques in analyzing and design the members subjected to the axial loading.
CO3	Make use of knowledge of analysis in structural planning and design of various components of building subjected to the bending.
CO4	Apply engineering concept to design members subjected to complex nature of loading
CO5	Make the use of knowledge to design the footings
Advanced traffic Engineering & Management (Elective IV)	
BTCVE702T	
After successful completion of this course the student will be able to:	
CO1	Students should be able to Define and describe various traffic studies and traffic characteristics.
CO2	Students should be able to describe terms related to highway capacity and have knowledge of staticstical tool in traffic engineering.
CO3	Students should be able to explain various theories related to traffic flow
Air Pollution & Solid Waste Management (Elective V)	
BTCVE703T	
After successful completion of this course the student will be able to:	
CO1	Students will be able to understand different aspects of air pollutants, its sources and effects on man and materials & meteorological parameters.
CO2	Students will be able to understand methods of air sampling & design equipments for air pollution to reduce its impacts on environment.
CO3	Students will be able to understand problems arriving in handling large amount of solid waste generated.
CO4	Students will be able to understand problems arriving in its collection, transportation, and processing & to design safe collection and disposal methods
CO5	Students will be able to learn emerging technologies for air pollution control.
Water & Wastewater Management (Elective VI)	
BTCVE704T	
After successful completion of this course the student will be able to:	
CO1	Understand the process and design components of water treatment such as Aeration, coagulation-flocculation and Sedimentation
CO2	Understand the process and design the components of water treatment such as Filtration, disinfection.
CO3	Understand the various sources characteristics and disposal methods of wastewater
CO4	Understand and design the different preliminary and primary waste-water treatment

CO5	Understand and design the different Secondary waste-water treatment
Waste Management (Open Elective)	
BTME703T	
After successful completion of this course the student will be able to:	
CO1	Understands different aspects of solid waste, it's sources and effects on man and materials etc.
CO2	Understanding problems arriving in handling large amount of solid waste management generated, it's collection & transportation, processing and will able to design safe collection & disposal methods.
CO3	Design methods & equipment's and solid waste management to reduce it's impact on environment.
CO4	Evaluate and analyze the hazardous waste.
CO5	Design the appropriate disposal system for hazardous waste management.
Project Work Phase I	
BTCVE706P	
After successful completion of this course the student will be able to:	
CO1	Understand organizational skills & professional practices
CO2	Interpret the communication skills of organizational members with each other
CO3	Collection of data for analyze/design the Civil Engineering problem by using appreciate methodology in a team work.

Agnihotri College of Engineering

Nagthana Road, Wardha

Department of Civil Engineering

B.Tech 8th Semester (CBCS)

Course Outcome's

Construction Method & Equipment Management	
BTCVE801T	
After successful completion of this course the student will be able to:	
CO1	Student able to Should have the knowledge about construction industry and construction projects
CO2	Student able to Should have knowledge about project organization
CO3	Student able to Should have knowledge about construction planning methods
CO4	Student able to Should have knowledge about constructional and equipment management
CO5	Student able to Should have knowledge about construction materials management.
Digital Land Surveying & Mapping	
BTCVE801T	
After successful completion of this course the student will be able to:	
CO1	Student able to Know the basics of digital land surveying and its applications
CO2	Student able to Handle the GPS for surveying and plot the details on map
CO3	Student able to Know the use of DGPS and its applications and advantages
CO4	Student able to Use total station for land surveying and plotting the details.
CO5	Student able to use advance software for mapping.
Disaster Management	
BTCVE803T	
After successful completion of this course the student will be able to:	
CO1	Capacity to integrate knowledge & to analyze, evaluate and manage the different public health aspects of disaster event at local and global levels, even when the limited information is available.
CO2	Capacity to describe, analyze and evaluate the environmental, social, cultural, economic, legal, organizational aspects influencing vulnerabilities & capacities to face disasters.
CO3	Capacity to work theoretically and practically in the process of disaster management (disaster risk reduction, response & recovery) and relate their interconnection particularly in field of public health aspects of the disaster.
CO4	Capacity to manage the public aspects of disaster, Capacity to obtain, analyses & communicate risk, relief needs and lessons learned form earlier disaster in order to formulate strategies for mitigation in future scenarios with the ability to clearly present and discuss their conclusions and the knowledge and argument behind them.
CO5	Capacity to analyses, design & perform research on different aspects on emergencies & disaster events while demonstrating inside into potential and limitations of science, it's role in society and people responsibility to how to used it.
Project Work Phase II	
BTCVE804P	
After successful completion of this course the student will be able to:	
CO1	Analyze or Design the Civil Engineering problems by using appreciate methodology in a team work.
CO2	Interpret the communication skills of team members
CO3	Use of Modern tools in the field of Civil Engineering