



RSR RUNGTA COLLEGE OF ENGINEERING & TECHNOLOGY

Rungta Knowledge City

Kohka – Kurud Road, Bhilai (C.G.)-490024

Recognized by AICTE, New Delhi and Affiliated to CSVTU, Bhilai.

Department of Civil Engineering

Course Outcomes

Programme: Bachelor of Technology

Course Name : Introduction to Fluid Mechanics

Semester: III

Course Code : B020312(020)

CO1: Apply the concept of fluid statics in different engineering problem.

CO2: Apply the principle of fluid kinematics.

CO3: Apply the energy and momentum principle.

CO4: Analyse the pipe flow and open channel flow.

CO5: Analyse the flow through mouthpiece, orifice, notch and weir

Department of Civil Engineering

Course Outcomes

Programme: Bachelor of Technology

Course Name : Introduction to Solid Mechanics

Semester: III

Course Code : B020313(020)

CO1: Define and explain the basic concepts of Mechanics of Solids and to be able apply the stress & strain equations to find out stress & strain in bars.

CO2: Analyse stresses and strains in a rectangular element and to find out the maximum stress in an inclined plane and its location.

CO3: Draw bending moment and shear force diagram for loaded beams and to be able to find out bending and shear stresses at the cross section of the beam.

CO4: Calculate the critical load for columns and be capable of analysing dams and retaining walls.

CO5: Apply the concepts of unsymmetrical bending and torsion to solve the power transmission problems along with design of spring for shock absorption.



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Department of Civil Engineering

Course Outcomes

Programme: Bachelor of Technology

Course Name : Plane Surveying – I

Semester: III

Course Code : B020314(020)

CO1: Students will be able to: Determine elevations by applying different techniques.

CO2: Students will be able to: Deal with the minor instruments and will be familiar with their functioning.

CO3: Students will be able to: Do transverse computations, detect and rectify errors.

CO4: Students will be able to: Do the various methods of traversing with Plane table.

CO5: Students will be able to: Set out various curves with the field problems.

Department of Civil Engineering

Course Outcomes

Programme: Bachelor of Technology

Course Name : Building Materials

Semester: III

Course Code : B020315(020)

CO1: Identify properties of construction material.

CO2: Acquire fundamental knowledge of fresh and harden concrete.

CO3: Describe characteristic of timber and use of eco-friendly material in construction.

CO4: Extend the knowledge about characteristic of paint, varnishes etc.

CO5: Extend the knowledge about steel, aluminum, glass etc.



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Department of Civil Engineering

Course Outcomes

Programme: Bachelor of Technology

Course Name : Structural Analysis – I

Semester: IV

Course Code : B020411(020)

- CO1: To be able to find out indeterminacies of structures and be capable of differentiating the structures.
- CO2: To be able to find out and apply suitable method for analysis of structures to evaluate displacements.
- CO3: To be capable of applying strain energy method to find displacements of determinate structures.
- CO4: To be able to draw Influence Line Diagram for functions such as reactions at the supports, bending moment positions and shear force at a section and capable of evaluating maximum values of these functions for various load positions.
- CO5: To be able to analyze suspension bridges and arches.

Department of Civil Engineering

Course Outcomes

Programme: Bachelor of Technology

Course Name : Hydraulic Engineering

Semester: IV

Course Code : B020412(020)

- CO1: Analyze turbulent flow in pipe and solve problems of pipe network.
- CO2: Analyze Boundary layer and calculate drag and lift.
- CO3: Analyze flow in open channel.
- CO4: Apply the Dimensional analysis for fluid flow problem.
- CO5: Analyze the flow in Turbine & Pumps.



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Department of Civil Engineering

Course Outcomes

Programme: Bachelor of Technology

Course Name : Surveying and Geomatics

Semester: IV

Course Code : B020413(020)

CO1: Deal with the various aspects of Trilateration and Triangulation

CO2: Do the relevant computations, errors and observations.

CO3: Gain and apply the knowledge of Tacheometry, various modern survey instruments.

CO4: Apply the concepts of Photographic and aerial surveying and GPS.

CO5: Efficiently deal with the Hydrographic surveying.

Department of Civil Engineering

Course Outcomes

Programme: Bachelor of Technology

Course Name : Building Construction

Semester: IV

Course Code : B020414(020)

CO1: To be able to recognize various parts of sub-structure with their functions.

CO2: To be able to recognize importance of safety in construction.

CO3: Identify the factors to be considered in construction of building and develop the construction practice and techniques.

CO4: Students are to be able to recognize construction procedure with safety procedure in various types of bonds.

CO5: Students are able to understand the suitability of various types of floors.



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Course Outcomes

Programme: Bachelor of Technology

Course Name : Engineering Geology

Semester: IV

Course Code : B020415(020)

CO1: Show the knowledge about basic concept of geology.

CO2: Show knowledge of the Mineralogy and Crystallography

CO3: Show knowledge of the petrology

CO4: Understand the structural geology and earthquake.

CO5: Get the knowledge about the. Engineering geology and landslide.

Department of Civil Engineering

Course Outcomes

Programme: Bachelor of Technology

Course Name : Structural Engineering Design – I

Semester: V

Course Code : C020511(020)

CO1: Learner is able to understand the importance of reinforced cement concrete.

CO2: Learner has clarity about the various design philosophies used in structure engineering design

CO3: Learner is able analyze and design singly and doubly reinforced section using working stress method.

CO4: Learner is able to analyze and design rectangular beams using limit state method.

CO5: Learner is able to design elements such as slabs, columns, footings and staircases.



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Course Outcomes

Programme: Bachelor of Technolog

**Course Name : Hydrology and Water
Resources Engineering**

Semester: V

Course Code : C020511(020)

CO1: Explain the hydrologic cycle and precipitation.

CO2: Compute runoff by different method.

CO3: Estimate the water requirement of different crops.

CO4: Design Canal.

CO5: Compute the reservoir capacity.

Department of Civil Engineering

Course Outcomes

Programme: Bachelor of Technolog

Course Name : Geotechnical Engineering

Semester: V

Course Code : C020513(020)

CO1: Students should be able to define different properties of soil.

CO2: Students should be able to analyze permeability, compaction and effective stress.

CO3: Students should be able to analyze consolidation of soil and shear strength.

CO4: Students should be able to evaluate the stability of slope of different types of soil.

CO5: Students should be able to explore soil in field.



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Department of Civil Engineering

Course Outcomes

Programme: Bachelor of Technolog

Course Name : Transportation Engineering

Semester: V

Course Code : C020514(020)

CO1: Will conversant with various terminologies of Highway Engineering and design geometric elements of highways and expressways.

CO2: Will carry out traffic studies and implement traffic regulation and control measures.

CO3: Will evaluate highway construction material and design rigid and flexible pavements as per IRC.

CO4: Will conversant with various terminologies of Railway Engineering.

CO5: Will design turnouts in Railway.

Department of Civil Engineering

Course Outcomes

Programme: Bachelor of Technolog

Course Name : Structural Analysis – II

Semester: V

Course Code : C020531(020)

CO1: Learner is able to differentiate and analyze the different kinds of structures determinate and indeterminate.

CO2: Learner is able to apply suitable method for given structure rigid jointed or pin jointed plane frames.

CO3: Learner is able to analyze indeterminate beams and frame (sway and non-sway) using Moment distribution method.

CO4: Learner is able to analyze indeterminate beams and frame (sway and non-sway) using slope deflection method.

CO5: Learner is able to draw influence line diagram for determinate and indeterminate beams using Muller Breslau principle and is able to apply it for finding out maximum values of stress function



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Department of Civil Engineering

Course Outcomes

Programme: Bachelor of Technolog

**Course Name : Structural Engineering Design –
II**

Semester: VI

Course Code : C020611(020)

CO1: Learner is able to understand the difference between plastic and elastic analysis.

CO2: Learner has clarity about the various design philosophies used in structure engineering design

CO3: Learner is able analyze and design simple bolted and welded connections subjected to axial load.

CO4: Learner is able to analyze and design axially loaded Tension member and compression member using limit state method.

CO5: Learner is able to analyze and design Laterally Supported and Laterally Unsupported Beams using limit state method.

Department of Civil Engineering

Course Outcomes

Programme: Bachelor of Technolog

Course Name : Environmental Engineering

Semester: V

Course Code : C020612(020)

CO1: The students must be able to apply the knowledge to plan, design, construct and monitor a water/wastewater treatment plant as per a city's water demand."

CO2: Students must be able to summarize complexities in the characteristics(s) of water/wastewater that is available and the correct treatment methods to be adopted."

CO3: Students must be able to justify the patterns of water storage and recommend the correct distribution methods suitable for the city under consideration.

CO4: The student must be able to analyze the wastes coming in for treatment and decide upon the techniques of treatment to be given.

CO5: Students must be able to apply the knowledge reused to develop a positive attitude to earth, environment and its protection against pollution and adopt safer methods of waste disposal.



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Department of Civil Engineering

Course Outcomes

Programme: Bachelor of Technolog

**Course Name : Engineering economics,
Estimation & Costing**

Semester: V

Course Code : C020613(020)

- CO1: Learner is able to identify various items of building and able to determine approximate estimation of buildings."
- CO2: Learner is able to determine detailed quantity estimate and Bar bending schedule of civil engineering works from given details."
- CO3: Learner is able to determine quantities of materials and rate analysis of any items in residential building works."
- CO4: Learner is able to understand Contracts and Tender Documents.
- CO5: Learner is able to understand basic Engineering Economics in construction industry

Department of Civil Engineering

Course Outcomes

Programme: Bachelor of Technolog

**Course Name : Professional Elective-II
(Concrete Technology)**

Semester: V

Course Code : C020632(020)

- CO1: The knowledge of what concrete is, how it is formed, what materials are involved and properties and requirements of each concrete ingredient.
- CO2: Ability to perform various tests on concrete ingredients and also on concrete (Fresh and Hardened).
- CO3: Ability to analyze various special concrete and their applications.
- CO4: Basic knowledge of Nondestructive testing.
- CO5: Understand the factors influencing concrete mix & know the BIS method of mix design.



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Department of Civil Engineering

Course Outcomes

Programme: Bachelor of Technolog

**Course Name : Environmental Pollution &
Control**

Semester: V

Course Code : C000610(037)

CO1: Understand contemporary pollution issues.

CO2: Have insight into specific examples of environmental pollution.

CO3: Understand the causes and effects of key types of environmental pollution.

CO4: Appreciate different pollution control strategies.

CO5: Awareness of Environmental Laws & Acts

Department of Civil Engineering

Course Outcomes

Programme: Bachelor of Technolog

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Course Outcomes

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Department of Civil Engineering

Course Outcomes

Programme: Bachelor of Technolog

**Course Name : Structural Engineering Design
III**

Semester: VII

Course Code : D020711(020)

CO1: Learner is able to analyse and design eccentric and moment connections in steel structures.

CO2: Learner is able to analyse and design Plate Girder.

CO3: Learner is able to analyse and design column bases and gantry girders

CO4: Learner is able to analyse and design members subjected to combined forces.

CO5: Learner is able to analyse and design roof trusses under different loads.



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Department of Civil Engineering

Course Outcomes

Programme: Bachelor of Technolog

Course Name : Design of Hydraulic Structures

Semester: VII

Course Code : D020712(020)

CO1: Students will be able to design the dams.

CO2: Students will be able to design the spillways.

CO3: Students will be able to design the weir and barrage.

CO4: Students will be able to design canal falls.

CO5: Students will be able to design different types of cross drainage works

Department of Civil Engineering

Course Outcomes

Programme: Bachelor of Technolog

Course Name : Foundation Engineering

Semester: VII

Course Code : D020713(020)

CO1: Students should be able to evaluate and design of shallow foundation.

CO2: Students should be able to analyze settlement of foundation with field test.

CO3: Students should be able to analyze consolidation of soil and shear strength.

CO4: Students should be able to evaluate and design of pile foundation.

CO5: Students should be able to explore the underground structure and tunnel.



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Department of Civil Engineering

Course Outcomes

Programme: Bachelor of Technology

**Course Name : Construction equipment
and techniques**

Semester: VII

Course Code : D020733(020)

- CO1: Understand various construction equipment.
- CO2: Explain the equipment for production of concrete.
- CO3: Apply various sub structure construction techniques.
- CO4: Understand super structure construction techniques.
- CO5: Understand Repair Construction.

Department of Civil Engineering

Course Outcomes

Programme: Bachelor of Technolog

Course Name : Design of structure

Semester: VII

Course Code : D000703(020)

- CO1: Student shall able to explain relationship between stress and strain.
- CO2: Student shall be able to explain different type of joints.
- CO3: Student shall be able to identify type of bolt.
- CO4: Student shall be easily constructing beam.
- CO5: Leaner is able to design elements such as slabs, columns.



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Department of Civil Engineering

Course Outcomes

Programme: Bachelor of Technolog

**Course Name : Structural Engineering Design
IV**

Semester: VIII

Course Code : D020811(020)

- CO1: Learner is able to analyse and design continuous beam, building frames, strap beam and raft footings as per the most recent BIS code of practices.
- CO2: Learner is able to analyse and design Cantilever and counter fort retaining wall as per the most recent BIS code of practices.
- CO3: Learner is able to analyse and design water tank and its staging as per the BIS code of practices.
- CO4: Learner is able to analyse and design bridges as per the BIS code of practices.
- CO5: Learner is able to analyse pre stressed concretes beam for flexure and losses.



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Department of Civil Engineering

Course Outcomes

Programme: Bachelor of Technology

Course Name : Open channel flow

Semester: VIII

Course Code : D020832(020)

CO1: Explain types of flow in open channel, velocity and pressure distribution

"CO2: Explain specific energy, compute uniform flow, critical flow, section factor and conveyance of channel and its transitions"

"CO3: Classify various flow profiles and compute gradually varied flow profiles in various types of slopes in channel"

"CO4: Comprehend hydraulic jump, its types and compute initial and sequent depth in case of various channels "

CO5: Analyze rapidly varied, Spatially-varied flow and unsteady flow in various hydraulic structures and its applications.

Department of Civil Engineering

Course Outcomes

Programme: Bachelor of Technolog

Course Name : Air pollution and Control Measures

Semester: VIII

Course Code : D000813(020)

CO1: Understand the need to control air pollutants

CO2: Apply different methods of pollution control and reduce the level of pollutant intensity in atmosphere."

CO3: Measure and analyze the air pollutants concentration in the atmosphere."

CO4: Analyze the air quality and relate with air pollution regulation

CO5: Design various air pollution control equipment and evaluate its use.