



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: Master of Technology

**Course Name : Advanced Concrete Technology
and Admixtures**

Semester: I

Course Code : 550111 (20)

CO1: Explain the concrete ingredients and its influence at gaining strength.

CO2: Explain various tests on fresh and hardened concrete.

CO3: Apply the rules to do mix designs for concrete by various methods.

CO4: Explain about various special concrete.

CO5: Develop the methods of manufacturing of concrete.

Department of Civil Engineering

Course Outcomes

Programme: Master of Technology

Course Name : Matrix Methods of Structural Analysis

Semester: I

Course Code : 550112 (20)

CO1: Evaluate the static and kinematic indeterminacy and generate stiffness and flexibility matrices.

CO2: Use flexibility matrix method to analyse different structures.

CO3: Analyse various types of structural members of rigid jointed plane frame and pin jointed plane frame by flexibility method.

CO4: Analyse the skeleton structures using stiffness method.

CO5: Analyse the skeleton structures using stiffness method under different coordinate system.



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Course Outcomes

Programme: Master of Technology

**Course Name : Instrumentation and
Experimental Techniques**

Semester: I

Course Code : 550113 (20)

CO1: Define various measurement techniques

CO2: Explain use of strain gauges in structural applications

CO3: Define all types of Static and dynamic testing techniques.

CO4: Apply the various nondestructive techniques to identify the defect.

CO5: Implement basic principles and techniques model materials and testing.

Department of Civil Engineering

Course Outcomes

Programme: Master of Technology

**Course Name : Advanced Construction
Management**

Semester: I

Course Code : 550114 (20)

CO1: Explain crystal structure and Imperfection in crystal structure.

CO2: Define basic Civil properties of materials & explain the theories of deformation.

CO3: Explain solidification phenomenon of pure metal, alloys and interpret phase diagrams.

CO4: study on cost estimation in structure engg.

CO5: Defined the safety in construction



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Department of Civil Engineering

Course Outcomes

Programme: Master of Technology

**Course Name : Elective I - Limit State Design of
Steel Structures**

Semester: I

Course Code : 550114 (20)

CO1: Explain crystal structure and Imperfection in crystal structure.

CO2: Define basic Civil properties of materials & explain the theories of deformation.

CO3: Explain solidification phenomenon of pure metal, alloys and interpret phase diagrams.

CO4: Explain how microstructure and Civil properties of carbon and alloy steels are controlled by various heat treatment/surface treatment processes.

CO5: Compare characteristics of various ferrous, nonferrous and composite materials



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Course Outcomes

Programme: Master of Technology

**Course Name : Advanced Concrete Technology
and Admixtures**

Semester: II

Course Code : 550211 (20)

CO1: Understand the behavior of RCC beams under combined shear, torsion, and bending.

CO2: Apply the Additional Moment method in column design.

CO3: Design and detail concrete walls according to IS code.

CO4: Design flat slabs using the IS method.

CO5: Understand the inelastic behavior of concrete beams, including moment-rotation curves and moment redistribution.

Department of Civil Engineering

Course Outcomes

Programme: Master of Technology

Course Name : Earthquake Effects on Structure

Semester: II

Course Code : 550212 (20)

CO1: To perform site specific deterministic seismic hazard analysis.

CO2: To analyze earthquake characteristics and associated effects on structures, including linear responses.

CO3: Learn seismic design concepts for structural engineering and load behavior of structural elements.

CO4: understand various building systems such as frames, shear walls, and braced frames.

CO5: Explore modern concepts like base isolation and adoptive systems for earthquake-resistant design.



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Course Outcomes

Programme: Master of Technology

**Course Name : Finite Element Analysis of
Structures**

Semester: II

Course Code : 550213 (20)

CO1: Understand the fundamentals of solid mechanics.

CO2: Apply the Finite Element method for analyzing beams.

CO3: Utilize Finite Element techniques to analyze rigid jointed plane frames.

CO4: Apply Finite Element methods to analyze pin jointed plane frames.

CO5: Gain knowledge of shell analysis and degenerated shell elements.

Department of Civil Engineering

Course Outcomes

Programme: Master of Technology

**Course Name : Maintenance and Rehabilitation
of Structures**

Semester: II

Course Code : 550214 (20)

CO1: Demonstrate the ability to assess and mitigate potential issues such as cracking, permeability, and thermal behavior in concrete and steel structures, thereby contributing to the development of safe and reliable construction projects.

CO2: Understand factors affecting structural durability, Identify corrosion mechanisms and protection methods.

CO3: Differentiate maintenance, repair, and rehabilitation and Evaluate damaged structures and causes of deterioration.

CO4: Explore concrete chemicals and strength-enhancing elements.

CO5: Learn techniques for rust removal and rebar protection.



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Course Outcomes

Programme: Master of Technology

Course Name : Advance Foundation Engineering

Semester: III

Course Code : 550231 (20)

CO 1: Design and analyze foundation systems using conventional methods.

CO 2: Design and prepare a proposal for a Geotechnical investigation.

CO 3: Design appropriate foundation systems based on ground-investigation data and be able to select correct soil parameters for the designs.

CO 4: Select boring depth, location and associated laboratory tests for simple construction projects

CO 5: Equip students with modern instrumentation for foundation design and correct selection of soil parameters for foundation design

Department of Civil Engineering

Course Outcomes

Programme: Master of Technology

Course Name : Structural Dynamics

Semester: III

Course Code : 550311 (20)

CO1: Understanding the types and sources of dynamic loads.

CO2: Understanding the types and sources of statics dynamic loads.

CO3: Understanding free vibrations in lumped mass multi-degree-of-freedom systems and Knowledge of Rayleigh's method for solving multi-degree-of-freedom systems

CO4: Proficiency in creating mathematical models for structural systems & Familiarity with mode superposition methods for analyzing complex structures.

CO5: Analyzing and designing structures to resist seismic-induced forces and motions.



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Course Outcomes

Programme: Master of Technology

Course Name : Pre-Stressed Concrete

Semester: III

Course Code : 550333 (20)

CO1: Knowledge of analysis methods for prestressed structures, including consideration of losses

CO2: Ability to design for shear, bond, and torsion in prestressed structures.

CO3: Proficiency in designing compression members with and without flexure in prestressed concrete.

CO4: Familiarity with concepts like linear transformation, concordant cable profile, and cap cables in the design of continuous prestressed beams.

CO5: Familiarity with partial prestressing, its advantages, and its practical applications