



# LORDS INSTITUTE OF ENGINEERING & TECHNOLOGY

UGC Autonomous

| Approved by AICTE | Affiliated to Osmania University |  
Accredited by NBA | Accredited 'A' grade by NAAC || Certified by ISO.



## DEPARTMENT OF CIVIL ENGINEERING

### COURSE OUTCOMES (COS)

#### Course Name: C221 Strength of Materials-II

Year: II-II Sem A.Y: 2022-23

C221.1	Solve statically indeterminate beams and portal frames using classical methods.
C221.2	Sketch the shear force and bending moment diagrams for different loading condition for indeterminate structures.
C221.3	Solve the beams, frames by slope deflection method and draw the shear force and bending moment diagrams.
C221.4	Solve the beams, frames by moment distribution method and draw the shear force and bending moment diagrams.
C221.5	Solve the beams, frames by kani's method and draw the shear force and bending moment diagrams.

#### Course Name: C222 Hydraulic and Hydraulic Machinery

Year: II-II Sem A.Y: 2022-23

C222.1	Illustrate the flow through pipes and losses in pipe flow.
C222.2	Solve various engineering problems in open channels.
C222.3	Describe the hydraulic jumps and its uses.
C222.4	Discuss the dimensional Analysis.
C222.5	Apply their knowledge of fluid mechanics in addressing problems in hydraulic machinery.

#### Course Name: C223 Building Materials and Construction Practices Year: II-II Sem A.Y: 2022-23

C223.1	Know the properties of basic materials used in construction industry.
C223.2	Know the criteria for selection of good constituents required for making quality concrete.
C223.3	Analyze the characteristics and properties of fresh and hardened concrete through standard tests.
C223.4	Apply the concepts of mix design for manufacturing good quality concrete.
C223.5	Implement various special concretes and concreting methods based on the scenario.

#### Course Name: C224 Transportation Engineering

Year: II-II Sem A.Y: 2022-23

C224.1	To understand the importance of transportation and characteristics of road transport.
C224.2	To know about the history of highway development, surveys and classification of roads.
C224.3	To study about the geometric design of highways.
C224.4	To study about traffic characteristics and design of intersections.
C224.5	To know about the pavement materials and design.

#### Course Name: C225 English for Technical Communication Year: II-II Sem A.Y: 2022-23

C225.1	Apply technical communication skills effectively.
C225.2	Adapt different types of official correspondence.
C225.3	Construct report writing using various techniques.
C225.4	Develop adequate skills of manual writing.
C225.5	Interpret the information transfer from verbal to non-verbal data and vice-versa.

**Course Name: C226 Advance Communication Skills Lab      Year: II-II Sem      A.Y: 2022-23**

C226.1	Organize ideas relevantly and coherently in their communication.
C226.2	Analyze and comprehend the text inferentially.
C226.3	Write Resume/CV and Cover letter effectively.
C226.4	Practice oral presentations confidently.
C226.5	Participate in group discussion dynamically and face interviews optimistically.

**Course Name: C227 Hydraulics and Hydraulic Machinery Lab      Year: II-II Sem      A.Y: 2022-23**

C227.1	Competence in understanding flow phenomenon in open channels.
C227.2	Ability to analyze the force acting due to jets concept and its application in hydraulic machines.
C227.3	Competence in working principles of hydraulic pumps and turbines.
C227.4	To interpret the results obtained in the laboratory for various experiments.
C227.5	Get the knowledge on different hydraulic machinery and write a technical laboratory report.

**Course Name: C228 Transportation Engineering Lab      Year: II-II Sem      A.Y: 2022-23**

C228.1	Understand the characteristics of Bitumen by performing basic tests
C228.2	Understand the characteristics of Coarse Aggregate used in pavements by performing basic tests.
C228.3	Collect traffic data by conducting traffic volume studies at intersections and sections of roads.
C228.4	Analyze traffic flow characteristics from the collected traffic data.
C228.5	Select suitable software to analyze the level of service and delays for peak hour.

**Course Name: C229 Programming Language-II Lab      Year: II-II Sem      A.Y: 2022-23**

C229.1	Develop python programs using library modules.
C229.2	Able to implement python programs using pandas.
C229.3	Develop python programs using Mat plot lib Module.
C229.4	Write, Test, Debug python library modules.
C229.5	Debug python image programs using various modules.

**Coordinator****HoD**



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## DEPARTMENT OF CIVIL ENGINEERING

### COURSE OUTCOMES (COS)

#### Course Name: C321 Design of Steel Structures

Year: III-II Sem A.Y: 2022-23

C321.1	Design Bolted and Welded Connection, both simple and eccentric.
C321.2	Design the Tension members.
C321.3	Design the Flexural member.
C321.4	Design a column and column base.
C321.5	Analyse and design a roof truss for Gravity loads and wind loads.

#### Course Name: C322 Transportation Engineering

Year: III-II Sem A.Y: 2022-23

C322.1	Identify basic elements of highway alignment and design of highway geometrics
C322.2	Carry out traffic studies and implement traffic regulation and control measures
C322.3	Characterize pavement materials, design flexible & rigid pavements as per IRC
C322.4	Explain various elements of railway engineering and design various elements
C322.5	Explain the basic operations of airport engineering and design of runways

#### Course Name: C323 Structural Analysis

Year: III-II Sem A.Y: 2022-23

C323.1	Analyse the Arches, cables and suspension bridges for static & moving loads
C323.2	Analyse the structure using flexibility matrix method to calculate the Redundant forces and sketch the BMD and SFD.
C323.3	Analyse the structure using Stiffness matrix method to calculate the Redundant forces and sketch the BMD and SFD
C323.4	Develop Stiffness matrix using Direct Element method for indeterminate structures.
C323.5	Analyse the frames using approximate methods of Analysis.

#### Course Name: C324 Foundation Engineering

Year: III-II Sem A.Y: 2022-23

C324.1	Examine different soils and Apply the stress distribution in soils.
C324.2	Recognize the importance and Compute the bearing capacity of shallow foundation.
C324.3	Analysis and design pile foundation.
C324.4	Analysis and design Cofferdams.
C324.5	Demonstrate soil explorations.
C324.6	Recognize the importance and Recommend the type of foundation.

#### Course Name: C325 Road Safety Engineering

Year: III-II Sem A.Y: 2022-23

C325.1	Explain the fundamentals of traffic engineering and road safety principles, planning & designing
C325.2	Apply traffic enforcement procedures and processes.
C325.3	Design safe road infrastructure
C325.4	Apply design principles for roadway geometrics improvement with various types of traffic safety appurtenances/tools
C325.5	Apply road safety audit at all stages.

**Course Name: C326 Professional Practice & Ethics****Year: III-II Sem A.Y: 2022-23**

C326 .1	Identify professional practice, introduction of various stakeholders and their respective roles, understanding the fundamental ethics governing the profession.
C326 .2	Summarize contracts and contracts management in civil engineering, dispute resolution mechanisms; laws governing engagement of labour.
C326 .3	Describe the Intellectual Property Rights and patents.
C326 .4	Differentiate the types of roles they are expected to play in the society as practitioners of the civil engineering profession.
C326 .5	Demonstrate good ideas of the legal and practical aspects of their profession.

**Course Name: C327 Electrical Energy Conservation and Safety Year: III-II Sem A.Y: 2022-23**

C327.1	Explain the current energy scenario and importance of energy conservation.
C327.2	Describe the concepts of energy management.
C327.3	.Recognize the methods of improving energy efficiency in different electrical systems.
C327.4	Discuss the concepts of different energy efficient devices.
C327.5	Explain the basic concepts related to Infrastructure Projects.

**Course Name: C328 Transportation Engineering Lab****Year: III-II Sem A.Y: 2022-23**

C328.1	Characterize the pavement materials.
C328.2	Perform quality control tests on pavement material and pavements.
C328.3	Conduct traffic studies for estimation of traffic flow characteristics.

**Course Name: C329 Computer Applications Lab****Year: III-II Sem A.Y: 2022-23**

C329.1	Use software skills to solve civil engineering related analysis and design
C329.2	Analyse and design of RCC beam using limit state design
C329.3	Analyse and solve problems related to hydraulic structures using software
C329.4	Compute bearing capacity and other geotechnical related problems using software.
C329.5	Use Civil Engineering software STAAD PRO for analysis and design of basic elements of structure.

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**Course Name: C421 Gender Sensitization**

**Year: IV-II Sem**

**A.Y: 2022-23**

C421.1	Develop a better understanding of important issues related to gender in contemporary India.
C421.2	Sensitize to basic dimensions of the biological, sociological, psychological and legal aspects of gender through discussion of materials derived from research, facts, everyday life, literature and film.
C421.3	Get a finer grasp of how gender discrimination works in our society and how to counter it.
C421.4	Better equipped to work and live together as equals.
C421.5	Develop a sense of appreciation of women in all walks of life.

**Course Name: C422 Principle of Green Building**

**Year: IV-II Sem**

**A.Y: 2022-23**

C422.1	Outline the various features and benefits of a green building and classify the various parameters used in green rating systems.
C422.2	Evaluate a building using the green rating criteria for site selection and water efficiency.
C422.3	Identify the energy efficiency parameters and methods used in green building practices.
C422.4	Select materials for sustainable built environment & adopt waste management methods.
C422.5	Apply the various methods for maintaining indoor environmental quality in green buildings.

**Course Name: C423 Infrastructure Engineering**

**Year: IV-II Sem**

**A.Y: 2022-23**

C423.1	Demonstrate the understanding of the power sector infrastructure needs and maintenance strategies
C423.2	Evaluate the public & private sector role in infrastructure development.
C423.3	Describe various problems in infrastructure development
C423.4	Develop strategies for Infrastructure Planning and its Implementation
C423.5	Implementation of environmental laws and regulations
C423.6	Demonstrate the understanding of the strategies for successful implementation of infrastructure projects.

**Course Name: C424 Smart Building Systems**

**Year: IV-II Sem**

**A.Y: 2022-23**

C424.1	Understand the concept of smart building systems architecture and components.
C424.2	Understand the different types of firing alarm systems.
C424.3	Describe the concepts of using cameras and CCTV's and their applications.
C424.4	Establish a broad knowledge on Security systems.
C424.5	Identify the benefits and impacts of energy saving concepts.
C424.6	Understand the concepts of IBMS architecture and real time applications.

**Course Name: C425 Project Work-II**

**Year: IV-II Sem**

**A.Y: 2022-23**

C425.1	Analyse the specific problem using engineering knowledge to arrive at a solution methodology.
C425.2	Formulate an investigation procedure and analyze, interpret, and synthesize the obtained data using a laboratory procedure and/or modern engineering software and tools.
C425.3	Draw valid conclusions and engineering solutions including design, recommendations, or estimations, keeping in view the safety norms and regulations in codes of practice.
C425.4	Discuss and communicate in oral and written forms, the technical contents of the project, observing professional ethical principles of documentation.
C425.5	Demonstrate individual and teamwork skills in carrying out and managing the project work.

**Coordinator**

**HoD**