



Koneru Lakshmaiah Education Foundation

(Category -1, Deemed to be University estd. u/s. 3 of the UGC Act, 1956)

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Department of Civil Engineering Program: M.Tech –Construction Technology and Management Academic Year: 2022-2023

Course Code	Course Name	Description of Course Outcome
22CE5121	Construction Planning Scheduling and Control	Understand the concepts of project management for practical application
		Apply mathematical logic in the planning and scheduling of a project
		Apply concepts to estimate the project cost by using tools
		Apply concepts to maintain the construction documents in the project
		Plan, schedule, and control large-scale programs and individual projects by using Primavera/MS Project Tool
22CE5122	Sustainable Construction Materials and Methods	Understand concepts of sustainable construction practices
		Understand basics of sustainable construction materials
		Design the product's process to achieve sustainability features
		Calculate Life Cycle Assessment of building
22CE5123	Lean Construction Practices	Investigate Sustainability aspects of the buildings by using LCA tools
		Understand the elements of traditional construction management
		Understand the integrated applications of various IT tools and case studies
		Apply and analyse construction productivity measuring and improving techniques
		Implement lean principles in order to improve the customer value for sustainable project business
22CE5124	Building Information Modelling	Apply and analyse the lean practices
		Become familiar with the trends, concepts of Building Information Modeling
		Learn about Project BIM Execution Planning
		Design the BIM execution process by creating process maps
		Develop BIM information exchanges
22CE5225	Mechanized Construction and Machinery	Developing BIM Model using Revit Software and submission of project report
		Understanding the basic concepts of Equipment Management and tools
		Understand various construction equipment and study the efficient utilization of the same using scientific principles
		Apply the knowledge for the selection of appropriate equipment
		Understand the operation of Earthwork and various functions of machinery used for Earth moving, compaction, etc.
22CE5226	Project Formulation	Write field report on machinery operation, cost and productivity by using project management tools like primavera/Candy/SAP etc
		Understand the concept of project and Identification of best Project by understanding the different feasibility studies
		Estimating the cash flows by considering the time value of money.
		Identify the best project by analyzing facts related economic, commercial and financial aspects.

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	Appraisal	Understand in detail about Private sector partnership in construction projects.
22CE5227	Construction Laws and Regulations	Understand the concept of construction laws and regulations.
		Study the current trend toward alternative project delivery systems via contractual arrangements such as design-build and construction management at risk
		Investigate how to avoid the possibilities of construction disputes via alternative dispute resolution (ADR)
		Understand the Labor regulations and review construction contracts and specifications
22CE5228	Quality Management and Safety Management Systems in Construction	Understand the concepts of quality management and the factors influencing construction quality
		Understand quality planning and programs in construction industry
		Acquire knowledge of quality management systems and ISO 9000 family of standards.
		Understand and analyses quality circle (QC) concepts for possible implementation to solve construction productivity and quality problems
		Understand and evaluate safety management principles in construction
22CE51E1	Material Procurement Management	Understand the significance of material management
		Integrate important materials functions to both products and services & use MRP, ERP, & PLM managing materials
		Apply various purchasing method and inventory controlling techniques into practice.
		Use the Material Management tools like TALLY, ERP, SAP in materials planning, procurement, inventory, control, cost control etc.
22CE51E2	Green Buildings	Understand Necessity and importance of Sustainable/ Green Buildings, Grasp the construction practices of a sustainable Buildings.
		Understanding the Green Building Rating Systems, Water & Energy efficiencies, Reduction in waste material during construction and Building Design
		Understanding Air Conditioning and HVAC system design, Salient features of CII Godrej Green Business Center
		Understanding Indoor Environment Quality and Occupational Health, Reasons for poor IAQ, Measures to achieve Acceptable IAQ levels,
22CE51E3	Sustainable Engineering Concepts and Life Cycle Analysis	This course will introduce students to the fundamental concepts related to interaction of industrial and environmental/ecological systems, sustainability challenges facing the current generation
		. Students will understand the concepts and the scientific method as it applies to a systems-based, trans-disciplinary approach to sustainability
		identify problems in sustainability and formulate appropriate solutions based on scientific research, applied science, social and economic issues
		The basic concepts of life cycle assessment (LCA) will be discussed, along with life cycle inventory (LCI) and life cycle impact assessment (LCIA) including the social and economic dimensions
22CE51F1	Construction Personnel Management	Understand Overview of manpower planning and roles of HR
		Understand Detail about the organizations and structure variance for organizations
		Understand human relations and organizational behavior for working in an organization
		Understand welfare measures and laws related to welfare measures and Detail overview of management and development methods
22CE51F2	Pre-Engineering Construction and Technology	Understand the type of prefabricated elements and its importance
		Understand the precast construction procedure
		Understand the modular construction practices and its limitations and advantages
		Apply knowledge in the choice of production setup and manufacturing methods
22CE52G1	Statistical	Apply discrete and continuous probability distribution including requirements mean and variance and making decisions
		Use the concepts of standard deviation, coefficient variance in different types samples and apply the tests

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	Methods in Construction	Perform the correlation analysis in various civil engineering projects Apply simulation techniques for analysis and mitigation of construction project risks
22CE52G2	Project Risk Management	Identify the stages involved in a project and analyze the obligatory services to be taken up while performing a construction activity Cultivate an idea on effective resource utilization and identify factors affecting job productivity Apply the professional skills acquired in managing a construction project. Gain the ability to attain an equilibrium among Innovation, Technology and Economic feasibility
22CE52H1	Emerging Construction Technologies	Understand the modern construction techniques used in the sub structure construction Understand the concepts used in the construction of special structures Apply mechanism/technique for strengthening and repair methods for different cases. Demonstrate knowledge and understanding of the principles and concepts relevant to super structure construction for buildings
22CE52H2	Resource Management and Control in Construction	Understand overview of the resource planning and management of resources in construction Understand in detail about the labor management and optimization Understand equipment management and effective utilization of the material resources Understand detail about the allocation and levelling of resources with time management
22CE51F3	INFRASTRUCTURE PLANNING AND MANAGEMENTS	This course attempts to introduce students to real world risks and challenges in managing infrastructure After a brief introduction to the infrastructure planning process as well as the state of infrastructure across sectors in India, we systematically look at various risks that plague infrastructure projects We then look at a variety of novel solutions or fixes that can help us execute infrastructure projects better The course is replete with real-world case studies and guest lectures to ensure that what is being discussed is practically applicable
22CE51G3	CHARACTERIZATION OF CONSTRUCTION MATERIALS	The objective of the course is to introduce students to the characterization of construction materials and their behaviour. understanding of the mechanisms that govern the performance of these materials The course will be focused primarily on cement and concrete, and include a few techniques. The physics of the techniques and their application to cement science. Lab demonstrations and experiments will be covered
22CE51H3	PRINCIPLES OF CONSTRUCTION MANAGEMENT	Though the course primarily targets students of civil engineering in colleges, other engineering students may also find it interesting. The course seeks to present a rounded view of the diverse issues involved in the management of construction projects Includes aspects like construction economics, quality and safety management, and contract management, apart from time management and scheduling, estimation. It is hoped that engineers working in contracting, consulting and other organizations related to construction projects will also find the course useful.


Academic Professor I/C

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