



MEENAKSHI SUNDARARAJAN ENGINEERING COLLEGE  
363, Arcot Road, Kodambakkam, Chennai – 24  
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Website : [www.msec.edu.in](http://www.msec.edu.in)

M.E CONSTRUCTION ENGINEERING AND MANAGEMENT

REGULATION – 2013

COURSE OUTCOMES (CO)

MA7152 Statistical Methods for Engineers (C101)


CO CODE	COURSE OUTCOME
C101.1	Gain knowledge on the value of the point estimators using the method of moments and method of maximum likelihood.
C101.2	Conduct various test statistics in hypothesis testing for mean and variances of large and small samples.
C101.3	Determine the regression line using the method of least square and also to calculate the partial and multiple correlation coefficient for the given set of data points.
C101.4	Test the hypothesis for several means using one way, two way or three way classifications.
C101.5	Gathered knowledge on the principal component analysis of random vectors and matrices.

CN7101 Modern Construction Materials (C102)

CO CODE	COURSE OUTCOME
C102.1	Gain knowledge on the various types of special concretes
C102.2	Select the different processing of steel and applications of coating
C102.3	Knowledge on the manufacturing process and applications of polymer composites
C102.4	Identify the different flooring materials and application of façade materials
C102.5	Apply the knowledge of smart and intelligent materials in construction field

CN7102 Construction Equipment (C103)

CO CODE	COURSE OUTCOME
C103.1	Gain knowledge on planning of equipment and selection of equipment
C103.2	Attain knowledge on fundamentals of earth work operations, earth moving operations and types of earth work equipment

  
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C103.3	Gather knowledge on special construction equipment's
C103.4	Apply the knowledge on asphalt and concrete plants
C103.5	Apply the knowledge and select the proper materials handling equipment

**CN7103 Project Formulation and Appraisal (C104)**

CO CODE	COURSE OUTCOME
C104.1	Perform Formulations Of Projects
C104.2	Analyse Project Costing
C104.3	Evaluate Project Appraisal
C104.4	Apply Project Financing
C104.5	Perform Private Sector Participation & Implementation

**CN7104 Quantitative Techniques in Management (C105)**

CO CODE	COURSE OUTCOME
C105.1	Apply the knowledge of science and engineering fundamentals in learning the concept of operations research and its practical applicability for solving challenges in construction.
C105.2	Identify, formulate, plan and schedule construction engineering projects.
C105.3	Knowledge of financial management and cost concepts.
C105.4	Design the required man, material, equipment, cost and time as per needs by proper decision rules.
C105.5	Analyze the cost by break-even analysis and modern construction management software.

  
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**CN7001 Advanced Concrete Technology (C106)**

CO CODE	COURSE OUTCOME
C106.1	Understood the testing of concrete making materials as per IS code and admixtures
C106.2	Gain knowledge to determine the properties of fresh and hardened of concrete.
C106.3	Gather knowledge for the design of concrete mix and grade as per IS codes and ACI method.
C106.4	Attain knowledge on the application and use of special concrete.
C106.5	Gain knowledge on the methods and techniques involved in the concrete for various structures.


**CN7201 Advanced Construction Techniques (C107)**

CO CODE	COURSE OUTCOME
C107.1	Understood the modern construction techniques used in the sub structure construction.
C107.2	gain knowledge on the principles and concepts relevant to super structure construction for buildings
C107.3	Understand the concepts used in the construction of special structures
C107.4	Gain Knowledge on Various strengthening and repair methods for different cases.
C107.5	Gather knowledge to Identify the suitable demolition technique for demolishing a building.

**CN7202 Contract Laws and Regulations (C108)**

CO CODE	COURSE OUTCOME
C108.1	Design the construction contracts
C108.2	Develop a skill for the tendering process.

  
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C108.3	Understand the duties of the arbitrator.
C108.4	Gain knowledge on the various legal requirements to be met in relation to land and construction.
C108.5	Identify and apply the provisions provided in the labour welfare schemes.

**CN7203 Construction Planning, Scheduling and Control (C109)**

CO CODE	COURSE OUTCOME
C109.1	Identify and estimate the activity in the construction
C109.2	Schedule the networking of activities using critical path method
C109.3	Evaluate the project budget required for the particular construction project
C109.4	Recognize the various quality control tool required in the construction industry
C109.5	Gain knowledge on the different databases that can be maintained in a construction industry using computers.

**CN7204 Computer Applications in Construction Engineering and Planning (C110)**

CO CODE	COURSE OUTCOME
C110.1	Gain knowledge on the use of software's in construction Industry.
C110.2	Attained knowledge to apply various optimization techniques.
C110.3	Gather knowledge to apply Deterministic and Probabilistic Inventory Models.
C110.4	Gain knowledge to analyze the scheduling concepts.
C110.5	Obtained knowledge to solve problems using simulation and ERP systems.

**CN7003 System Integration in Construction (C111)**

CO CODE	COURSE OUTCOME
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C111.1	Interpret the systems used for integrating a building facility
C111.2	Identify the environmental factors applicable in the design of building systems
C111.3	Analyze the working of services components such as Plumbing, Electricity and HVAC
C111.4	Plan and diagnose the maintenance factors ensuring better operation of facility
C111.5	Assess the methods to control the safety hazards in constructed facility

**CN7005 Construction Project Management (C112)**

CO CODE	COURSE OUTCOME
C112.1	Identify the stages involved in a project and analyze the obligatory services to be taken up while performing a construction activity.
C112.2	Apply the professional skills acquired in managing a construction project.
C112.3	Develop the ability to attain an equilibrium among Innovation, Technology and Economic feasibility.
C112.4	Cultivate an idea on effective resource utilization and identify factors affecting job productivity.
C112.5	Estimate the cost of construction project.

**CN7211 Advanced Construction Engineering and Computing Techniques Laboratory (C113)**

CO CODE	COURSE OUTCOME
C113.1	Compare and analyse the methods of mix proportioning and effect of admixtures in concrete
C113.2	Knowledge on the test of NDT and workability tests on concrete
C113.3	Apply the analytical techniques and graphical analysis to interpret the experimental data
C113.4	Knowledge on project data and generate reports with graphical information
C113.5	Attained the knowledge on risks involved in construction project

  
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**CN7007 Quality Control and Assurance in Construction (C201)**

CO CODE	COURSE OUTCOME
C201.1	Achieved knowledge on the quality management guidelines, quality circles.
C201.2	Apply the quality standards for preparing Quality system documents.
C201.3	Understand the skill of preparing inspection procedures for quality planning.
C201.4	Gain knowledge on techniques and tools for Quality Assurance and Control in Construction Industry.
C201.5	Gather knowledge on quality improvement techniques

**CN7009 Resource Management and Control in Construction (C202)**

CO CODE	COURSE OUTCOME
C202.1	Identify the different types of resources in a construction industry
C202.2	Evaluate the labour productivity and the influencing factors
C202.3	Calculate the equipment output and its operation condition on construction equipment
C202.4	Knowledge in terms of cash inflow, cash outflow and balance sheet
C202.5	Categorize the time and cost related information's in a construction sector.

**CN7010 Project Safety Management (C203)**

CO CODE	COURSE OUTCOME
C203.1	Gain knowledge on accidents and their causes
C203.2	Gather knowledge about safety programmes safety programme job-site safety assessment
C203.3	Attain knowledge on contractual obligations
C203.4	Understood about designing for safety and safety procedures

  
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C203.5	Attained knowledge on owners and designers responsibility
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**CN7311 Practical Training (4 Weeks) (C204)**

CO CODE	COURSE OUTCOME
C204.1	Gained first-hand knowledge of practical problems in carrying out engineering tasks
C204.2	Gathered knowledge in communication and interpersonal skills
C204.3	Developed skills in facing and solving the field problems

**CN7312 Project Work (Phase I) (C205)**

CO CODE	COURSE OUTCOME
C205.1	Understand the problem areas in construction engineering and management
C205.2	Gain skills to prioritize the objectives for the selected research area
C205.3	Apply literature data to frame methodology of phase 2

**CN7313 Seminar (C206)**

CO CODE	COURSE OUTCOME
C206.1	Work on a specific technical topic in CEM domain to acquire skills of oral presentation
C206.2	Acquire technical writing abilities for seminars and conferences
C206.3	Present the topic using visual aids and interact with students

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**CN7411 Project Work (Phase II) (C207)**

CO CODE	COURSE OUTCOME
C207.1	Apply literature survey from phase I to implement methodology
C207.2	Experiment the process involved and analyse the results
C207.3	Provide suggestions and recommendations for the objectives of project

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