DEPARTMENT OF CIVIL ENGINEERING

PROGRAMME: M.E. CONSTRUCTION ENGINEERING AND MANAGEMENT

VISION

- To attain global recognition as a Commendable centre for quality Engineering Education and Research

MISSION

- To equip the graduates to meet the sustainable development of Construction Industry for the betterment of the society.
- To provide quality education for the graduates to execute traditional and Ethical Civil Engineering Practices.
- To enable successful Professional Engineers to meet the Industrial challenges.

PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

- Excel in research or will succeed in Construction Engineering and Management profession in the government, public and private sector organizations.
- Have a sound knowledge in statistics, project management and construction engineering fundamentals required for solving real time construction Engineering and Management problems using modern equipment and software tools.
- Become entrepreneurs and develop processes and construction technologies through innovation, by integrating their knowledge in multidisciplinary management to meet the needs of society and formulate solutions that are technically sound, economically feasible, and socially acceptable.
- Have professional and ethical attitude, effective communication skills, teamwork skills, leadership quality, multidisciplinary approach and an ability to relate Construction Engineering and Management issues in broader social context.
- Have competence of excellence, leadership, written ethical codes and guidelines, and the life-long learning needed for a successful professional career.

PROGRAM OUTCOMES (POs)

- Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- Problem analysis: Identify, formulate, review research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
- Conduct Investigations of Complex Problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
- Modern Tool Usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.
- The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
- Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
- Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
- Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
- Life-long learning: Recognize the need for, and have the preparation and ability to engage in

independent and life-long learning in the broadest context of technological change.

PROGRAM SPECIFIC OUTCOMES (PSOs)

- In-depth knowledge in the construction management, engineering and technologies necessary to formulate, plan, schedule and execute construction projects.
- Critically analyze and solve construction engineering and management problems by applying the modern tools and concepts of Construction Engineering & Management and make innovative advances in theoretical and practical.
- Conceptualize the problems in construction industry and develop appropriate solutions which are technically feasible and economically viable with due consideration of sustainability.

COURSE OUTCOMES (COs)

Regulation	2017
Semester	01
Course Code	MA5165
Course Name	Statistical Methods For Engineers
Course Outcome	After completing this course, students should demonstrate competency in the following topics ❖ Consistency, efficiency and unbiasedness of estimators, method of maximum likelihood estimation and Central Limit Theorem. ❖ Use statistical tests in testing hypotheses on data. ❖ Concept of linear regression, correlation, and its applications.. ❖ List the guidelines for designing experiments and recognize the key historical figures in Design of Experiments. ❖ Perform exploratory analysis of multivariate data, such as multivariate normal density,calculating descriptive statistics, testing for multivariate normality

Regulation	2017
Semester	01

Course Code	CN5101
Course Name	Modern Construction Materials
Course Outcome	❖ On completion of this course the students will have the knowledge of modern construction materials to be used in the field.

Regulation	2017
Semester	01
Course Code	CN5102
Course Name	Construction Equipment
Course Outcome	On completion of the course, the student is expected to be able to ❖ At the end of this course students will be able to know various types of equipments to be used in the constructions projects.

Regulation	2017
Semester	01
Course Code	CN5103
Course Name	Construction Planning, Scheduling And Control
Course Outcome	On Completion of the course, the student is expected to be able to ❖ On completion of this course the students will know the development of construction planning, scheduling procedure and controls.

Regulation	2017	
Semester	01	Professional Elective-I
Course Code	CN5001	
Course Name	Advanced Concrete Technology	
Course Outcome	On Completion of the Course the student will be able to ❖ On completion of this course the students will know various tests on fresh, hardened concrete, special concrete and the methods of manufacturing of concrete.	

Regulation	2017	
Semester	01	Professional Elective-II
Course Code	CN5002	
Course Name	Shoring, Scaffolding And Formwork	
Course Outcome	❖ On completion of this course the students will be able to know the detailed planning of framework, design of forms and erection of form work..	

Regulation	2017
Semester	02
Course Code	CN5201
Course Name	Advanced Construction Techniques
Course Outcome	❖ On completion of this course the students will know the modern construction techniques to be used in the construction of buildings and special structures and also rehabilitation and strengthening techniques and demolition..

Regulation	2017
Semester	02
Course Code	CN5202
Course Name	Contract Laws And Regulations
Course Outcome	❖ On completion of this course the students will know different types of contracts in construction, arbitration and legal aspect and its provisions

Regulation	2017
Semester	02
Course Code	CN5203
Course Name	Computer Applications in Construction Engineering And Planning
Course Outcome	❖ On completion of this course the students will know the computer applications in construction, different optimization techniques and sequencing problems.

Regulation	2017
Semester	02
Course Code	CN5204
Course Name	Economics And Finance Management in Construction
Course Outcome	❖ On completion of this course the students will be able to know the concepts in economics and finance in constructions.

Regulation	2017	
Semester	02	Professional Elective-III
Course Code	CN5006	
Course Name	Construction Project Management	
Course Outcome	❖ On completion of this course the students will be able to know the modern trends in project management viz. design, construction, resource unitlisation and cost estimation	

Regulation	2017	
Semester	02	Professional Elective-IV
Course Code	CN5007	
Course Name	Construction Personnel Management	
Course Outcome	❖ On completion of this course the students will know various processes in manpower planning, organizational and welfare measures.	

Regulation	2017
Semester	02
Course Code	CN5211
Course Name	Advanced construction engineering and computing Techniques laboratory
Course Outcome	❖ On completion of this laboratory course students will be able to test the concrete mixes ❖ Students will also be able to know various tests on hardened concrete.

	❖ On completion of this laboratory course the students will be able to do the scheduling of onstructions projects using tools primavera and MS projects.

Regulation	2017
Semester	03
Course Code	CN5301
Course Name	Quality Control And Assurance in Construction
Course Outcome	❖ On completion of this course the students will be able to know the quality control aspects in planning, systems, and management, assurance and improvement techniques.

Regulation	2017	
Semester	03	Professional Elective-V
Course Code	CN5009	
Course Name	Project Formulation and Appraisal	
Course Outcome	❖ On completion of this course the students will be able to know the formulations of projects, projects costing, appraisal and financing.	

Regulation	2017	
Semester	02	Professional Elective-VI
Course Code	CN5011	
Course Name	Project Safety Management	
Course Outcome	❖ On completion of this course the students will be able to know various constructions safety concepts	

Regulation	2017
Semester	03
Course Code	CN5313
Course Name	Project Work (Phase I)
Course Outcome	❖ At the end of the course the students will have a clear idea of their area of work

	and they will be in a position to carry out the remaining phase II work in a systematic way.

Regulation	2017
Semester	04
Course Code	CN5412
Course Name	Project Work (Phase II)
Course Outcome	❖ On completion of the project work students will be in a position to take up any challenging practical problem in the field of engineering design and find better solutions to it.