



DEPARTMENT OF CIVIL ENGINEERING

RESEARCH AND DEVELOPMENT

Research and Development helps to erect new or improved technology that creates knowledge among students which stipulate them to learn more in core areas. In our department three streams are formed to develop the research work and to enhance the consultancy activities.

1. Structural Engineering
2. Environmental Engineering
3. Construction Engineering and Management

Structural Engineering

Structural Engineering is the field of Engineering particularly concerned with the design of load-bearing structures. It is largely the implementation of mechanics to the design of the large structures that are fundamental to basic living, such as buildings, bridges, walls, dams, and tunnels. Structural engineers need to design structures so that the structures do not collapse or behave in undesirable ways while serving their useful functions. The efficient use of funds and materials to achieve these structural goals is also a major concern.

The major research areas in Structural Engineering are:

- Study on mechanical behavior of concrete
- Study on durability properties of construction materials
- Studies on Repair of Concrete Elements
- Building Energy Conservation and Green Architecture
- Damage Assessment
- Risk & Reliability
- Civil Engineering Materials
- Study on strengthening behavior of soil

Environmental Engineering

Environmental Engineering Research covers a broad spectrum of the science and technology of air, soil, and water management while emphasizing scientific and engineering solutions to environmental issues encountered in industrialization and urbanization.

The major research areas in Environmental Engineering are:

- Air and Water quality monitoring, modeling and management
- Water and Wastewater treatment
- Waste management
- Subsurface contaminant transport studies
- Soft computing in water resources
- Pipe network analysis using software

- GIS/remote sensing applications
- Green Audit

Construction Engineering and Management:

Construction Engineering and Management, a professional discipline that covers the research area of planning, scheduling, inventory, safety and human resource management with the help of strategic planning or by using management software tools.

Planning, scheduling and inventory related researches are challenging and mainly focused on construction progress without any delay in time and over budget. Safety and human resource management helps to improve site environment, in which ensuring the project with the correct skill – sets and experience for the successful completion of the project.

The streams of our research are

- Project formulation techniques
- Capital planning and program execution
- Contract laws and regulations
- Lean construction methodology
- PDCA cycle
- Quality control
- Inventory control
- Safety management
- Human resource management

Lean construction methodology is an emerging and efficient techniques adopted to reduce the wastage of resources in all the aspects of construction.