INDIAN INSTITUTE OF TECHNOLOGY, GUWAHATI
.
Department of Civil Engineering

CE 308 Construction Technology and management

Credits : 3-0-0 : 6 credit course. Total number of Lectures : 40

Objective of the course : Civil engineering project management and construction technology is one of the vital part of civil engineering practices. This course talks about existing construction practices for various civil engineering structures and its project management. It has been designed as a compulsory course for third year second semester students.

Detailed Outline of the Course

1. **Methods of construction :** Construction technology for Buildings, industrial buildings and structures. Steel and concrete structures, Bridges, Roads, Power Projects (Hydro, thermal and nuclear power), Industrial projects(refineries, petro-chemical, paper plant) Special structures.

   5 Lectures

2. **Various items of construction :** Earthwork, Excavation, Earthmoving, Drilling, Blasting, dewatering, foundation, concrete super-structures, steel super-structures, heavy foundation subject to dynamic loads, R. C. C and steel stack and stack like structures, Finishing items, painting, flooring, brick works, door, windows.

   15 Lectures

3. **Construction management:** Planning, scheduling and monitoring using network PERT and CPM, system approach to construction management, Identification of various activities, Paralleling, ladder activities, assessment of duration, resource networking, various form of progress reporting, contract laws and handling of contracts, Estimation, procurement methods, Tendering, evaluation, Quality assurance and quality control, financial control, Arbitration and settlement of disputes.

   20 Lectures

Texts/References

1. Jagman Singh, Heavy Construction - Planning, equipment and methods, Oxford & IBH Publishing Co. Pvt 1993.
2. B. Sengupta and H Guha, Construction management and planning, Tata McGraw Hill Publishing company Limited New Delhi 1995.
3. R. L. Peurifoy, W. B. Ledbetter and C. J. Schexnayder, Construction planning and methods. Fifth editions, McGraw Hill International editions 1996.
4. D. S. Berrie and B. C. Paulson, Professional construction management including C. M., Design construct and general contracting, Third edition, McGraw Hill International Editions 1992.
5. J. F. Woodward, Construction project management : Getting it right first time, THomas Telford 1997.
6. D. G. Carmichael, Construction engineering Networks : Techniques, planning and management, Ellis Horwood Publishers Chichester 1989.