

5008 - CONSTRUCTION MANAGEMENT										
Teaching Schedule Per Week			Progressive Assessment		Examination Schedule (Marks)					
Lectures	Practical	Credits			Theory		Practical Ex.		Total	
3	1	4	25		3Hrs.	100	0		125	
Pre-requisite		Source	Semester	Theory	Test	Total	TW	PR	Gr Total	→
4009		CVL		75	25	100	-	-	100	

**RATIONALE:** - This core course of "Construction Management" provides a Civil Engineer with vital knowledge of the techniques of management and their application for the optimum utilisation of sources in the construction industries. In order that the resources are used efficiently, it is imperative that these management techniques are applied to the construction industry. The student is expected to acquire sufficient knowledge for planning, organising, scheduling and monitoring of the various activities relating to man power, finance, equipment, material and time, and hence the course content has been framed in that direction. The scope of the syllabus is restated to the prescribed textbooks.

COURSE CONTENTS		Hrs	Mks
<b>1. FUNDAMENTALS</b>		2	4
Definition of management. Necessity and functions of management. Principle of management (Harry Foyal) and their application to civil engineering works. Scientific management.			
<b>2. CONSTRUCTION ACTIVITY</b>		6	12
Role of construction industries in national development. Agencies associated with construction industries in national development, their functions and their inter-relationship. Definition-Necessity and importance of planning. Role of supervisors in the construction site. Levels and stages of planning (pre-tender and post tender). Study of drawing, design, construction materials, equipment and human resources required for execution. Site layout and its importance in execution.			
<b>3. CONSTRUCTION INDUSTRY</b>		8	16
Organisation of construction Industry-Necessity for an organisation. Principles of organisation. Types of organisation -Live organisation, live and staff organisation, functional organisation, their merits and demerits, simple organisation and chart for each. Organisational structure of P. W. D. construction corporation and private organisation. Types of contracting firms like sole proprietorship, partnership, private limited company and co-operative societies, salient features of each. Co-ordinary- Controlling and decisions making, brief idea of each with suitable example.			
<b>4. CONSTRUCTION PROJECTS</b>		3	16
Scheduling and monitoring of construction projects. Methods of scheduling-			

Bar chart – CPM and PERT and their fields of application. Scheduling of bar chart and preparing construction schedule by bar chart for small projects, advantages and limitations of bar chart. Planning and scheduling of net work analysis-Salient features of net work, construction of network, terms used, logic, determination of project schedule, calculation of float, project duration and critical path. (Simple problems with 15 activities). Updating network -Brief idea about rescheduling of resources.

8 16

### 5. SUPERVISION AND QUALITY CONTROL

Concept of quality control and its importance for construction work. Principles of inspection and enforcement of specifications during execution. Inspection and supervision-techniques for different items of works such as earth- work, concreting wood work, form-work, brick masonry, stone masonry, steel work, painting, water proofing, sanitary and water supply services, tools and plants and equipment required, sampling techniques for testing of materials and the specification, checking them for ensuring quality. Statistical quality control techniques by standard deviation and variance. Introduction to ISO 9000 series-It's underlying features and drawbacks.

6 12

### 6. SAFETY

Safety in construction works-Importance of safety in construction work. Cases of accidents and remedial measures. Precautions to be taken to avoid accidents. Safety measures to be adopted in work site for- Executive, scaffolding and form-work, fabrication and erection and demolition. Occupational hazards in construction industry.

10 24

### 7. OTHER ASPECTS OF MANAGEMENT

Leadership-Types-Authoritarian and democratic requirement of an ideal leader. Motivation and its importance and function. Importance of communication and types of communication. Personnel, material, equipment management and their requirements. Important acts and labour laws related to construction activities.

48 100

**Total**

### REFERENCE BOOKS/ IS CODES

1. Robert L. Parity- Construction planning, equipment and method.
2. IS 3764 – 1966. Safety code for excavation.
3. IS 3696 (part I & II) 1966. Safety code for ladders & scaffolding.
4. IS 1647-1960 – Code of practice for fire safeties of buildings.
5. IS 4081-1986- Safety code for blasting and sealed drilling operations.
6. National building codes.
7. Haripal Singh- Construction Management & Accounts 1981 -Tata Publication -NewDelhi.
8. FTTL-Elements of Construction Management Oxford university Press,-Delhi.
9. V.K. Raiva -Construction Management Practice, Tata Mac- hill publication, New Delhi.
10. Galbert and B.M Dhir -Construction Planning and Management by Willey Easter Ltd Publication, New Delhi.
11. Anarjit Agarwal- Construction Management and P.W.D. Accounts by S.K. Kateria and Sons Publication.
12. Vazirani and Chavdale- Construction Management and Accounts- Khanna Publication- NewDelhi.