

## **CONSTRUCTION ECONOMICS & INFRASTRUCTURE FINANCING**

3-0-0-0-9

The 'construction economics' part of the course deals with practical applications, problems, and case studies pertaining to economic decision-making in Civil engineering. Specific topics include - Introduction to Engineering economics and its applications: Time value of money; interest and interest rates; cash flow diagrams, evaluation criteria for investment decisions; Break-even analysis, mutually exclusive, replacement and independent projects; practical issues in evaluation of projects; concept of depreciation and amortization; Taxation; evaluation of profits before and after Tax; Principles of accounting; Financial statements; Balance sheets; Working capital and accounting ratios.

'Infrastructure financing' component addresses the need for Infrastructure, Types of Infrastructure sectors and demand; role of government and private sectors; Investments in Infrastructure, Greenfield vs. Brownfield investments; sources of revenue and financing; Infrastructure charging, pricing principles and cost recovery; Competition and regulation; Assessment of infrastructure projects; Cost benefit analysis; decision making framework. Financing of capital projects: Sources of finance; financial securities; financial markets; equity and debt financing; Public private partnerships (PPP), PPP models and types of PPP; structure of agreements; Financial and economic implications of PPP models, risk profiles, allocation, and management.