



INTRODUCTION TO ACCOUNTING AND FINANCE FOR CIVIL ENGINEERS

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INTENDED AUDIENCE : Undergraduate and graduate students of civil engineering are the primary targeted audience. Young practicing engineers and engineering students from other departments may also find it very useful.

INDUSTRIES APPLICABLE TO : All construction and consulting companies in the area of planning, design and construction of infrastructure projects. The material will also be useful for companies engaged in BOOT and other models of working with projects, especially in the highway sector.

COURSE OUTLINE :

With the changing paradigm of the construction industry, and introduction of different contracting models, with the government trying to play more of a regulatory role and withdrawing from financial commitments, and the space being occupied by financial institutions, civil engineers in the modern day are expected to be familiar with basic accounting and finance. This aspect is almost completely missing from any curriculum in civil engineering and hence there is a need to make relevant material available in an online course, which students and practicing engineers can refer to at their convenience. Regular assignments and a final test will also be uploaded along with solutions as may be required.

ABOUT INSTRUCTOR :

Prof. Sudhir Misra is Professor at the Department of Civil Engineering, Indian Institute of Technology Kanpur and has a keen interest in concrete materials, construction and engineering. He has worked with consulting and construction companies also during his 35 years of professional experience, and also led the effort to initiate a graduate programme in Infrastructure Engineering and Management at IIT Kanpur. He has been a member of committees of the BIS and also worked with professional organizations in Japan and India. His research interests include durability and non-destructive testing of concrete and development and utilization of special concretes. A lecture module of Concrete Engineering and Technology by him is also available online under the NPTEL scheme of the Government of India.

Prof. Kumar Neeraj Jha is with the Department of Civil Engineering, Indian Institute of Technology Delhi. He started his career with Larsen and Toubro Ltd and was instrumental in successful completion of a number of construction projects of national importance. He has published more than 80 papers in a number of international and national journals and conference proceedings. He has supervised 4 PhD Students and more than 60 M.Tech. students. His book on Construction Project Management published by Pearson Education, Formwork for Concrete Structures published by Tata McGraw Hill and Determinantes of construction project success in india published by Springer is widely accepted as a text book in different universities. He teaches various courses in construction technology and management. He has conducted a number of training programs for industry and has also been involved with a number of consultancy projects.

COURSE PLAN :

Week 1 : Basic Accounting and concepts in finance; Book keeping: definitions, objectives, elements, journal and ledger.

Week 2 : Accounting & Concepts in Finance I: definitions, objectives, characteristics, limitations, basic terms; GAAP (Generally Accepted Accounting Principles)

Week 3 : Accounting & Concepts in Finance II: Systems of accounting, cash book, bank book, depreciation; provisions, reserves, accounting equation, journal & ledger entries, trial balance, profit & loss; account, balance sheet, cash flow statement)

Week 4 : Analysis of financial statements I: Financial leverage, financial ratios

Week 5 : Analysis of financial statements II: Significance and applications

Week 6 : Financial planning including capital budgeting I: Definition, financial planning options and objectives, time value of money

Week 7 : Financial planning including capital budgeting II: simple and compound interest, rule of 72, methods of capital budgeting - payback period

Week 8 : Financial planning including capital budgeting III: Accounting rate of return (ARR), net present value (NPV), internal rate of return (IRR)