



## Introduction to Accounting and Finance for Civil Engineers

Civil Engineering

**Instructor Name:** Dr. Sudhir Misra

**Institute:** IIT Kanpur

**Department:** Civil Engineering

**Course Intro:** : 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.

**Pre Requisites:** : None

**Core/Elective:** : Elective

**UG/PG:** : Both

**Industry Support** : 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.

**Reference** : [1] Theusen G.J., Fabrycky W.J., Engineering Economy, 9th Edition, Prentice-Hall, Inc., New Delhi, India, 2001. [2] Crundwell F.K., Finance for Engineers-Evaluation and Funding of Capital Projects, Springer, London, UK, 2008. (ISBN 978-1-84800-032-2). [3] Jha K.N., Construction Project Management- Theory and practice, 2nd Edition, Pearson India Education Services Pvt. Ltd., UP, India 2015.

**About Instructor:** Professor Sudhir Misra 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. Lecture modules on concrete engineering and technology, hydration, porosity and strength of cementitious materials and principles of construction management, by him are also available under the NPTEL/MOOCs scheme of the Government of India.



### COURSE PLAN

SL.NO	Week	Module Name
1	1	Basic Accounting and concepts in finance Book keeping: definitions, objectives, elements, journal and ledger
2	2	Accounting & Concepts in Finance I: definitions, objectives, characteristics, limitations, basic terms, GAAP (Generally Accepted Accounting Principles)
3	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)
4	4	Analysis of financial statements I: Financial leverage, financial ratios
5	5	Analysis of financial statements II: Significance and applications
6	6	Financial planning including capital budgeting I: Definition, financial planning options and objectives, time value of money
7	7	Financial planning including capital budgeting II: simple and compound interest, rule of 72, methods of capital budgeting - payback period
8	8	Financial planning including capital budgeting III: Accounting rate of return (ARR), net present value (NPV), internal rate of return (IRR)