SEMESTER S7

FINANCE FOR ENGINEERING

Course Code	OECET725	CIE Marks	40
Teaching Hours/Week (L: T:P: R)	3:0:0:0	ESE Marks	60
Credits	3	Exam Hours	2 Hrs. 30 Min.
Prerequisites (if any)	None	Course Type	Theory

Course Objectives:

1. The course details the fundamental concepts of engineering economics, construction accounting, financial management and basic tools used in the economic decision making of construction projects. The course helps the students acquire knowledge on basic financial management aspects and economics to facilitate the process of economic decision making effectively.

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SYLLABUS

Module No.	Syllabus Description	Contact Hours
1	Introduction to Book keeping and Accounting — Accounting Process – Purpose of accounting – Classification of accounting – Generally Accepted Accounting Principles – Conventions and Concepts – Double entry system of accounting – Preparation of Journal, Ledger and Trial Balance. (Illustrative problem) Introduction to financial statements – Preparation of Profit & Loss Account and Balance Sheet. (Simple problems)	10
2	Rate of Return method – Minimum attractive rate of return (MARR), Internal Rate of Return (IRR) – Economic Decision Making using Incremental Rate of Return (IRoR) Analysis of public projects – Benefit cost analysis – applications. Breakeven analysis – Fixed and variable cost – Total cost – Breakeven point and breakeven chart– Interpretation, limitations.	10

3	Working capital – Operating cycle – Working capital management – Sources of finance - long term and short term financing. Financing of PPP projects – Sources of project finance – Providers of finance – Financial structure – Financial indicators – Special nature of infrastructure financing need.	**8**
4	Construction Economics – Definition and scope. Time value of money – Simple and Compound interest – Time value equivalence –Cash flow diagrams – Interest calculations – Compound interest factors – Interest tables. Evaluating alternatives by equivalence – Present worth comparison – Future worth comparison – Annual cost and worth comparison.	**8**

Course Assessment Method

(CIE: 40 marks, ESE: 60 marks)

Continuous Internal Evaluation Marks (CIE):

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Attendance	Assignment/ Microproject	Internal Examination-1 (Written)	Internal Examination- 2 (Written)	Total
5	**15**	**10**	**10**	**40**

End Semester Examination Marks (ESE)

In Part A, all questions need to be answered and in Part B, each student can choose any one full question out of two questions

Part A	Part B	Total
• 2 Questions from each module. • Total of 8 Questions, each carrying 3 marks **(8x3 =24marks)**	• Each question carries 9 marks. • Two questions will be given from each module, out of which 1 question should be answered. • Each question can have a maximum of 3 sub divisions. **(4x9 = 36 marks)**	**60**

Course Outcomes (COs)

At the end of the course students should be able to:

Course Outcome		Bloom's Knowledge Level (KL)
CO1	Describe the principles and process of accounting.	**K2**
CO2	Apply basic analysis tools like rate of return, benefit cost, and breakeven analysis in economic decision making.	**K3**
CO3	Prepare financial statements and apply revenue recognition methods.	**K3**
CO4	Explain the basics of financial management and sources of finance for a project.	**K3**

Note*: K1- Remember, K2- Understand, K3- Apply, K4- Analyse, K5- Evaluate, K6- Create*

CO-PO Mapping Table (Mapping of Course Outcomes to Program Outcomes)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2										1	
CO2	3										3	
CO3	3										2	
CO4	3										2	

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Note: *1: Slight (Low), 2: Moderate (Medium), 3: Substantial (High), -: No Correlation*

Text Books				
Sl. No	**Title of the Book**	**Name of the Author/s**	**Name of the Publisher**	**Edition and Year**
1	Construction Project Management	Kumar Neeraj Jha	Dorling Kindersley (India) Pvt. Ltd	2nd ed. Pearson, 2015
2	Engineering Economy	Leland Blank, and Anthony Tarquin	McGraw Hill	Seventh Edition,2012

Reference Books				
Sl. No	**Title of the Book**	**Name of the Author/s**	**Name of the Publisher**	**Edition and Year**
1	Accounting Made Easy	Agrawal R and Sriniwasan, R	Tata McGraw-Hill	2005
2	Engineering Economy	Theusen G.J. and Fabrycky W.J.	Prentice-Hall, Inc.	9th Edition, 2001
3	Finance for Engineers- Evaluation and Funding of Capital Projects	Crundwell F.K.	Springer, London (ISBN 978-1-84800-032-2)	2008

NPTEL - Link ID
NPTEL :: Civil Engineering - NOC: Introduction to Accounting and Finance for Civil Engineers

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