



**Gyanmanjari**  
Innovative University

Course Syllabus  
Gyanmanjari Institute Of Technology  
Semester-1

**Subject :** Construction Economics and Finance - METCP11506

**Type of course:** Minor Stream

**Prerequisite:** NIL

**Rationale:** Construction economics and finance are vital in civil engineering as they ensure the viability and success of infrastructure projects. Effective management of these aspects involves comprehensive budgeting, cost estimation, and financial planning, which help in determining project feasibility and securing necessary funding.

Understanding construction economics allows engineers to optimize resource allocation, minimize costs, and enhance project efficiency. Accurate cost estimation and financial planning help in preventing budget overruns and financial losses, ensuring that projects are completed within financial constraints.

Financial management also involves assessing risks and implementing strategies to mitigate them, ensuring project stability and profitability. Additionally, sound financial practices attract investors and stakeholders, providing confidence in the project's economic viability.

Incorporating construction economics and finance principles ensures that civil engineering projects are not only structurally sound but also economically sustainable. This balanced approach leads to successful project execution, delivering high-quality infrastructure while maximizing financial returns and societal benefits.

**Teaching and Examination Scheme:**

Teaching Scheme			Credits	Examination Marks					Total Marks
CI	T	P		C	Theory Marks		Practical Marks		
			ESE		MSE	V	P	ALA	
4	1	0	5	60	30	10	20	30	150

*Legends: CI-Class Room Instructions; T – Tutorial; P - Practical; C – Credit; ESE - End Semester Examination; MSE- Mid Semester Examination; V – Viva; CA - Continuous Assessment; ALA- Active Learning Activities.*



**Continuous Assessment:**

Sr. No	Active Learning Activities	Marks
1	<b>Financial Return Analysis</b> Prepare the previous year financial report and upload on GMIU Web Portal.	10
2	<b>Financial Management</b> Prepare the financial management in reference with Profit and loss, Balance sheets, Financial ratios, Working capital management, Inventory valuation and upload on GMIU Web Portal.	10
3	<b>Case study</b> Prepare the Construction costing of actual commercial building site and upload on GMIU Web Portal.	10
<b>Total</b>		<b>30</b>

**Course Content:**

Sr. No	Course content	Hrs	% Weightage
1	<b>Economics</b> Role of Civil Engineering in Industrial Development - Support matters of Economy as related top Engineering- Market demand and supply - Quality control and Quality Production -Audit in economic law of returns, governing production. <b>Equivalence Factors</b> Time value of money, Quantifying alternatives for decision making, Cash flow diagrams, Equivalency - Single payment in the future - Present payment compared to uniform series payments - Future payment compared to uniform series payments - Arithmetic gradient, Geometric gradient.	18	30%
2	<b>Financial Returns Analysis</b> Comparison of alternatives: Present, future and annual worth method of comparing alternatives, Rate of return, Incremental rate of return, Break-even comparisons, Capitalized cost analysis, Benefit-cost analysis. <b>Evaluating Alternative Investments</b> Real Estate - Investment Property, Equipment Replace Analysis, Depreciation – Tax before and after depreciation – Value Added Tax (VAT) – Inflation.	14	24%
3	<b>Financial Management</b> Financial statements – Profit and loss, Balance sheets, Financial ratios, Working capital management, Inventory valuation,	17	28%



	Mortgage Financing - International financial management foreign currency management. <b>Construction Costing:</b> Cost estimating: Types of Estimates, Approximate estimates – Unit estimate, Factor estimate, Cost indices. Fixed contract Pricing- Cost plus pricing- Escalation clause- Construction cost control, Personnel costs, Equipment costs, Job in directs and markup.		
4	<b>Financial Statement Analysis</b> Balance sheet and Profit and Loss accounts – ratios analysis, Fund flow statement, Cash flow statement, Working Capital Management, Financial Control - Management accounting.	11	18%
	<b>Total</b>	<b>60</b>	<b>100</b>

**Suggested Specification table with Marks (Theory):60**

Distribution of Theory Marks (Revised Bloom's Taxonomy)						
Level	Remembrance (R)	Understanding (U)	Application (A)	Analyze (N)	Evaluate (E)	Create (C)
Weightage	NA	NA	NA	NA	NA	NA

Note: This specification table shall be treated as a general guideline for students and teachers. The actual distribution of marks in the question paper may vary slightly from above table.

**Course Outcome:**

After learning the course, the students should be able to:	
CO1	Understand the Economics in civil engineering
CO2	Understand concept of alternatives for decision making
CO3	Analyse financial returns
CO4	Evaluate the value added tax
CO5	Understand the concept financial management, construction costing and financial statement analysis

**List of Assignment**

Student will submit assignment and practical base on above topics.



**Instructional Method:**

The course delivery method will depend upon the requirement of content and need of students. The teacher in addition to conventional teaching method by black board, may also use any of tools such as demonstration, role play, Quiz, brainstorming, MOOCs etc.

From the content 10% topics are suggested for flipped mode instruction.

Students will use supplementary resources such as online videos, NPTEL/SWAYAM videos, e-courses, Virtual Laboratory

The internal evaluation will be done on the basis of Active Learning Assignment

Practical/Viva examination will be conducted at the end of semester for evaluation of performance of students in laboratory.



**Text Books:**

1. Anthony Higham, Carl Bridge, Peter Farrell, (2016), Project Finance for Construction, Routledge.

**Reference Books:**

1. Senthil, L. Madan and N. Robindrc Singh (2011), Engineering Economics and Cost Analysis, Lakshmi Publications, New Delhi.
2. Karl E. Case, Ray C. Fair and Sharon E. Oster (2017), Principles of Economics, Pearson, New Delhi.
3. Leland Blank and Anthony Tarquin, (2017), Engineering Economy, 7th Edition, McGraw Hill Education, New Delhi.
4. Bose, D. C., (2010), Fundamentals of Financial management, 2nd ed., PHI, New Delhi.
5. Steven J. Peterson, (2012), Construction Accounting & Financial Management, Pearson, USA
6. Harris, F., McCaffer, R. and Edum-Fotwe, F.(2013), Modern Construction Management,

