MANIPAL INSTITUTE OF TECHNOLOGY
MANIPAL
(A constituent unit of MAHE, Manipal)

B.Tech (COMMON TO ALL)

COURSE PLAN: THEORY COURSE

Department :	**Humanities and Management**	
Course Name & code :	**Engineering Economics & Financial Management**	**HUM 3021**
Semester & branch :	**V**	**AERO, AUTO, BM, BT, CHM, DSE, EC, IP, MECH, MC3T**
Name of the faculty :	**Dr. Sunith Hebbar, Dr. Rajesh Pai, Mr. Lidwin Kenneth, Ms. Anasuya Lingappa, Lt. Cdr. Geethalakshmi, Ms. Maitri Manjunath, Dr.Mahesh Prabhu, Mr.Ramnath Shenoy, Mr. Pranav Joshi**	

No of contact hours/week:	**L**	**T**	**P**	**C**
	3	**0**	**0**	**3**

Course Outcomes (COs) to PO, PSO, BL Mapping

At the end of this course, the student should be able to:		**No. of Contact Hours**	**Marks**	**Program Outcomes (POs)**	**PSOs**	**BL (Recommended)**
CO1	Compute the worth of money at various points of time	14	30	1, 11		2, 3
CO2	Describe and apply the basic techniques of Financial statement analysis	04	20	1, 2, 4, 11		3
CO3	Assess the impact of risk in projects	06	15	1, 8, 11		3
CO4	Evaluate the economic feasibility of projects	12	35	1, 2, 6, 8, 11		3,4
	Total	**36**	**100**			

Course Articulation Matrix

CO/PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
CO1	1										2	
CO2	2	1		1							2	
CO3	2							2			2	
CO4	2	1				1		2			3	
Average Articulation Level	**1.75**	**1**		**1**		**1**		**2**			**2.25**	

ICT Tools used in delivery and assessment

Sl. No	Name of the ICT tool used	Details of how it is used
1	Computers	Self study topics are being performed generally in laptops
2	Power points	Power points are used to deliver the topics more effectively.
3	Microsoft Teams	Is a common mode of communication where students can interact, discuss on the topics anytime from anywhere.
4	Social media like Youtube; WhatsApp	With the majority of information available through open sources such as NTPEL, students are assigned a few topics to self-study in order to improve their learning skills. Other significant advantages include quick one-on-one interaction/communication between faculty and students, thus enhancing student engagement.
5	Wireless device – E-Pad	This is used with the internet and cloud facility for writing the examinations.

Course Outcomes (COs)/Course Learning Outcomes (CLOs) to PO, PSO, LO, BL Mapping

At the end of this course, the student should be able to:		No. of Contact Hours	Marks	Program Outcomes(POs)	Learning Outcomes (LOs)	BL (Recommended)
CLO1	Compute the worth of money at various points of time	14	30	1, 11	1, 15	2, 3
CLO2	Describe and apply the basic techniques of Financial statement analysis	04	20	1, 2, 4, 11	1, 3, 15	3
CLO3	Assess the impact of risk in projects	06	15	1, 8, 11	1, 9, 15	3
CLO4	Evaluate the economic feasibility of projects	12	35	1, 2, 6, 8, 11	1, 6, 9, 15	3, 4
	Total	**36**	**100**			

 # Applicable to IET Accredited Programs

Delivery and assessment Plan of LOs

Learning Outcome (LO) mapped to the course		Delivery and assessment Plan
LO	LO statement	
1	Apply knowledge of mathematics, statistics, natural science and engineering principles to the solution of complex problems. Some of the knowledge will be at the forefront of the particular subject of study.	Gets addressed during lecture delivery of stated topics in the syllabus. Many of the topics needs the some of the basic knowledge of science and mathematics.

3	Select and apply appropriate computational and analytical techniques to model complex problems, recognising the limitations of the techniques employed	Addressed while deleivering lectures on design topics stated in the syllabus and in assessment.
6	Apply an integrated or systems approach to the solution of complex problems	Addressed through design topics, self study topics/case studies.
9	Use a risk management process to identify, evaluate and mitigate risks (the effects of uncertainty) associated with a particular project or activity	Addressed through design topics, self study topics/case studies.
15	Apply knowledge of engineering management principles, commercial context, project and change management, and relevant legal matters including intellectual property rights	Addressed through design topics, self study topics/case studies related to decision making of an engineering problems.

 # Applicable to IET Accredited Programs

Assessment Plan

IN – SEMESTER ASSESSMENTS									
Sl. No.	**Assessment Mode**		**Assessment Method**	****Time Duration**	****Marks**	**** Weightage**	**Typology of Questions (Recommended)**	****Schedule**	****Topics Covered**
1	**MISAC**	**1**	**Surprise Assignment**	**30**	**5**	**Descriptive:** 5 M (1 Questions of 5 marks)	Bloom's taxonomy (B) level of the question should be L3 and above.		Time Value of Money
		2	**Mid-Term Test**			As prescribed in Mid-term QP template by Acdemic section.	Bloom's taxonomy (BT) level of the question should be L3 and above.		Time Value of Money, Evaluation of Alternatives: Present & FutureWorth Method, Capitalized Cost Approach, Annual Worth Methods, Regular IRR Method
		3	**Quiz**	**20**	**5**	**Objective:** 5M 10 MCQs × ½ = 5 marks	Bloom's taxonomy (BT) level of the question should be L3 and above.		Annual Worth, Regular & Incremental IRR methods, Replacement Analysis
2	**FISAC**	**1**	**Take Home Assignment**	**	**5**	**Descriptive**	Bloom's taxonomy (BT) level of the question should be L3 and above.		Financial Statemnet Analysis and Risk in Projects

		2	**Surprise Assignment**	**	5	**Descriptive:** 5 M (1 Questions of 5 marks)	Al		Financial Statemnet Analysis and Risk in Projects
END – SEMESTER ASSESSMENT									
1	**Regular/Make–Up Exam**			180 Mins	50	Answer all 5 full questions of 10 marks each. Each question can have 3 parts of 2/3/4/5/6 marks.	Bloom's taxonomy (BT) level of the question should be L3 and above.		All the Topics L1 to L36

Note: Fine tune the assessment plan as per the guidelines, issued by AD(A), notified from time to time.

** *Individual faculty will be entering the details*

*** *Individual faculty shall identify the assessment method from FISAC Assessment method (Table 1 below) and fill in the details.*

NOTE: Information provided in the table is as per the In-semester assessment plan notified by Associate Director (Academics).

Lesson Plan

L No	Topics	Course Outcome Addressed
0	Introduction to the course and the evaluation criterion	1
1	Time value of money meaning and importance, Interest meaning and types	1
2	Time value of money meaning and importance, Interest meaning and types	1
3	Time value equivalence, Interest factors for discrete compounding, Problems	1
4	Compound and Annuity based interest formula with Examples	1
5	Compound and Annuity based interest formula with Examples	1
6	Compound and Annuity based interest formula with Examples	1
7	Arithmetic gradient series factor, Problems	1
8	Nominal and effective interest rate, Problems	1
9	Nominal and effective interest rate, Problems	1
10	Nominal and effective interest rate, Problems	1
11	Examples applying all the formulas and Nominal and effective interest rate, concepts	1
12	Economic evaluation of alternatives: Bases for comparison of alternatives, Importance and assumptions, Present worth and Future worth Methods, Problems	1
13	Economic evaluation of alternatives: Present Worth Method - LCM method and Study period method, Problems	4
14	Economic evaluation of alternatives: Present Worth Method - LCM method and Study period method, Problems	4
15	Economic evaluation of alternatives: Capitalized equivalent amount	1
16	Economic evaluation of alternatives: Capitalized equivalent amount	4
17	Economic evaluation of alternatives: Annual worth method and its importance, Determining Annual equivalent amount, Problems	4
18	Economic evaluation of alternatives: Capital recovery with return, Application numerical on annual worth method	4
19	Economic evaluation of alternatives: Rate of return method	1
20	Economic evaluation of alternatives: Rate of return method	4
21	Economic evaluation of alternatives: Rate of return method	4
22	Replacement Analysis: Reasons, Evaluation of replacement alternatives	4
23	Replacement Analysis: Evaluation of replacement alternatives with unequal lives , Replacement Analysis: Economic life of an asset, Application based numerical	4
24	Replacement Analysis: Economic life of an asset, Application based numerical	4
25	Depreciation: Methods of depreciation with numerical	4
26	Depreciation: Methods of depreciation with numerical	4
27	Break-even Analysis: Meaning, Assumptions and Applications, Break even analysis for single product and multi product firms	3
28	Break-even Analysis: Break even analysis for evaluation of investment alternatives, minimum cost analysis.	3
29	Break-even Analysis: Break even analysis for evaluation of investment alternatives, minimum cost analysis.	3
30	Financial Management: Nature and objectives, Scope and functions , Financial Statement Analysis: Understanding the financial statement	2
31	Financial Statement Analysis: Ratio analysis, Problems	2

32	Financial Statement Analysis: Ratio analysis, Problems	2
33	Financial Statement Analysis: Ratio analysis, Problems	2
34	Risk and its concepts, Evaluation of Project Risks	3
35	Risk and its concepts, Evaluation of Project Risks	3
36	Risk and its concepts, Evaluation of Project Risks	3

Faculty members teaching the course (if multiple sections exist):

FACULTY	SECTION	FACULTY	SECTION
~~Mr. Lidwin Kenneth~~	~~EC-B, MCT-A~~	~~Ms. Maitri M~~	~~MECH-A, DSE_A~~
Dr Sunith H	MECH-D	Lt Cdr Geethalakshmi	EC-C, MCT-B
Dr Rajesh Pai	AERO	Ms. Anasuya KL	IP, BT, DSE-B
Mr. Mahesh Prabhu	BM, AUTO	Mr. Ramnath Shenoy	CHM, MECH-B
Mr. Pranav Joshi	EC-A, MECH-C,		

References:

1. Park, C. S. (2015). Contemporary Engineering Economics, Global Edition. Philippines: Pearson Higher Education & Professional Group.
2. B Blank, L. T., Tarquin, A. (2017). Engineering Economy. United Kingdom: McGraw-Hill Education.
3. White, J. A., Case, K. E., Pratt, D. B., LaScola Needy, K., Grasman, K. S. (2020). Fundamentals of Engineering Economic Analysis. United Kingdom: Wiley.
4. Chandra, P. (2016). Financial Management-Theory and Practice, 9th Edition, Tata McGraw Hill Education.

Submitted by: Dr. Sunith Hebbar

(Signature of the faculty)

Date: 22/07/2024

Approved by: Prof. Yogesh Pai

26/7/2024

(Signature of HOD)

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