MARRI LAXMAN REDDY
INSTITUTE OF TECHNOLOGY AND MANAGEMENT
(AN AUTONOMOUS INSTITUTION)
(Approved by AICTE, New Delhi & Affiliated to JNTUH, Hyderabad)
Accredited by NAAC with 'A' Grade & Recognized Under Section 2(f) & 12(B) of the UGC act,1956

COURSE CONTENT

TECHNOLOGY MANAGEMENT								
I SEMESTER								
Course Code	Category	Hours/Week			Credits	Maximum Marks		
		L	T	P	C	CIE	SEE	Total
20MBA006B	ELECTIVE	3	1	-	4	40	60	100
Contact Classes:60	Tutorial Classes: Nil	Practical Classes: Nil				Total Classes: 60		
Prerequisite: Basic knowledge of management principles								

COURSE OVERVIEW:

This course is designed to provide students with a comprehensive understanding of the strategic role of technology in modern business environments. It focuses on the processes of technological innovation, the integration of R&D into corporate strategy, and the financial evaluation of technical projects. Students will explore methods for forecasting technological trends and managing the complexities of technology transfer. By bridging the gap between engineering and management, the course prepares future leaders to leverage technology as a tool for competitive advantage and sustainable organizational growth.

COURSE OBJECTIVES:

1. To understand the concept and process of technological innovation, including factors influencing innovation success and the role of research and development (R&D) in business strategy.
2. To analyze various R&D strategies and decision-making approaches, including resource allocation, competitive advantage, and new product development techniques.
3. To evaluate financial aspects of R&D projects, using tools such as discounted cash flow (DCF), risk analysis, and project selection methods.
4. To examine planning and management of R&D programs and new product development, including project control, commercialization, industrial design, and market research.
5. To understand technological forecasting and technology transfer mechanisms, including forecasting techniques, modes of transfer, pricing, and negotiation in a global context.

COURSE OUTCOMES: After Completion of the course, students should be able to

1. Explain key concepts of technological innovation and research strategy.
2. Apply financial techniques for evaluation of research projects.
3. Organize research programs for effective planning and commercialization.
4. Compare forecasting methods for technological decision making.

5. Evaluate modes of technology transfer and related policy amendments.

Unit-I: Technological Innovation: The need for a conceptual approach, technological innovation as a conversion process factors contributing to successful technological innovation. Strategies for research and development: research and development as a business, resource allocation to research and development, research and development strategy in the decision making process, selection and implementation of research and development strategy, research and development and competitive advantage, new product development techniques for creative problem solving.

Unit-II: Financial Evaluation Of Research And Development: Financial evaluation of research and development projects: the need for cost effectiveness, financial forecasts, risk as a factor in financial analysis, project selection formulae and allocation of resources, DCF and other techniques of evaluating research and development ventures.

Unit-III: Research And Development: Program planning and control, portfolio planning, project planning and control, project termination, resource allocation and management. New product development: new product development as a competitive strategy, market research for developing new products.
Commercialization of research outcomes, industrial design, product architecture and design for manufacture, developing indigenous substitute for raw materials.

Unit-IV: Technological Forecasting For Decision Making: The definition of technological forecasting, forecasting, system inputs and outputs, classification of forecasting techniques, organization for technological, forecasting, current status.

Unit-V: Transfer Of Technology: Transfer of technology: modes of technology transfer, price of technology transfer, negotiation for price of management of technology. Latest Amendments in Technology

TEXT BOOKS:

1. Management of Technology: Managing Effectively in Technology-Intensive Organizations – Covers R&D management, innovation processes, and project planning.
2. The Management of Technological Innovation – Focuses on innovation strategy, technology development, and competitive advantage.
3. Innovation Management and New Product Development – A widely used text on innovation, forecasting, and new product development.
4. Research and Development Management – Explains R&D planning, control, and financial evaluation techniques.
5. Technology Management: Text and Cases – Covers technology transfer, forecasting, and strategic management with case studies.

REFERENCE BOOKS:

- Tarek Khalil, ―Management of Technology ―The Key to Competitiveness and Wealth‖,

Tata McGraw Hill, Boston, 4th Edition,2011.
- V.K.Narayanan, ―Managing Technology and Innovation for Competitive Advantage‖, Pearson Education, 3rd Edition,2007.
- Norma Harison and Samson, ―Technology management – Text and cases‖, Tata McGraw Hill, 4th Edition, 2011.
- Shane, ―Technology Strategy for Managers and Entrepreneurs‖, Pearson, 5th Edition, 2015.
- Khandwala, ―Corporate Creativity‖, Tata McGraw Hill, 4th Edition, 2013.
- Lucy C. Morse, Daniel L. Babcock: Managing Engineering and Technology,6e, Pearson

ELECTRONIC RESOURCES:

1. http://www.change-management.com/Prosci-Defining-Change-Management.pdf
2. http://www.tcs.com/SiteCollectionDocuments/White%20Papers/EntSol-Whitepaper-Change- Management-Theories-Methodologies-0213-1.pdf.
3. http://www.nickols.us/four_strategies.pdf
4. http://ifcext.ifc.org/ifcext/spiwebsite1.nsf/0/00DB06A86B84D253852576BA000E2AF0/$File/MoC%20Procedure.pdf

MATERIALS ONLINE:

1. Course template
2. Tutorial question bank
3. Tech talk and Concept Video topics
4. Open-ended experiments
5. Definitions and terminology
6. Assignments
7. Model question paper – I
8. Model question paper – II
9. Lecture notes
10. PowerPoint presentation
11. Drishya Siksha Sangrah (DSS) Videos