Elective Course 3: Technology Strategy

Course Type:	PS: Program Specialisation	Course Credits:	2
Course Code:	M4PE536	Course Duration:	30 Hours

Course Objective:

- To familiarize students with foundational concepts and strategic management of technology within business.
- To equip students with practical skills for assessing technological innovations and their strategic implications.
- To develop analytical capabilities to formulate and execute effective technology-driven strategies.
- To foster understanding of intellectual property management, technology transfer, and innovation management.
- To cultivate insights into emerging technology trends, digital transformation, and competitive technology positioning.

Course Outcomes:

- CO1: Understand issues in using new technology to compete successfully
- CO2: Develop strategies to manage technology risks, identify market needs, commercialize new technologies, and compete successfully in the market
- CO3: Analyze timing of entry of new technology, issues in collaboration v/s Competition
- CO4: Evaluate different positions to exploit new technologies
- CO5: Create a business plan for a hypothetical start-up targeting an unmet need.

Unit / Module	Content	CO Mapping	Hours Assigned
1	**Technology:** definition; impact of technological change on strategy; the Technology Life Cycle; Schumpeterian competition; **Technology Strategy** – enables firms to create new value by targeting unmet needs; achieve lower costs than previously possible, possibility of new competitive positions and sources of competitive advantage **Factors impacting technology strategy** – risks and uncertainty; choices to commercialize new technology; approaches to driving technology growth	CO1, CO2	5

	and adoption; potential threats with maturing of technology		
2	**Importance of complementary assets and ecosystems;** choice of collaborating with competitors or fighting competitors for introducing new technology; importance of timing and question of first mover advantage; Network effects and switching costs; multi-homing costs	CO1, CO2, CO3	4
3	**Technology Strategy for Innovators** – managing across the technology S-curve; alternative strategies to commercialize innovation; role of licensing, JV, strategic alliances, M&A; Joshua Gans & Scott Stern Framework – strength of intellectual property protection and relevance of complementary assets; alternative revenue model development and testing for innovators;	CO2, CO3, CO4	5
4	**Growth and Adoption of new innovation** – challenges in the technology adoption life cycle; sustaining competitive advantage and bargaining power as technology evolves; methods of shaping the competitive environment **Managing technological maturity** – decision on transitioning to a new industry or exit the business	CO2, CO3, CO4	4
5	**Leader v/s Follower Strategy**- first mover or wait and follow - role of customer lock-in, pre-empting scarce assets, sustaining technology advantage, achieving scale, rate of change of technology, control of valuable complementary assets	CO2, CO3, CO4	4
6	**Strategy for Existing Markets:** strategies for incumbent and new entrants affected by new technology; role of incumbents - develop strategy road map, assess strategic implications of new technology, awareness of disruptive technologies, build entry barriers, develop complementary assets, respond to industry convergence; role of new entrants – create technological gap, build an installed base, sell complementary goods, shape customer perceptions about future installed base	CO2, CO3, CO4	4
	Riding the new technology base – be ready for	CO2,	4

7	uncertainties, establish dominant design, commoditize elements of the ecosystem, create tech platforms	CO3, CO4	

Text Books:

1. Winning at New Product: Accelerating the Process from idea to Launch. 3e. Robert G. Cooper
2. Harvard Business Review on Aligning Technology with Strategy. Harvard Business School Publishing Corporation.

Reference Books:

1. Everyday Chaos. Technology, Complexity, and How we're Thriving in a New World of Possibility. David Weinberger. Harvard Business Review Press
2. The Keystone Advantage: What New Dynamics of Business Ecosystems Mean for Strategy, Innovation, and Sustainability. Marco Iansiti, Rod Levien. Harvard Business Review Press