

Design Thinking, Technology Innovation and Product Development

Target Audience: II Polytechnic Students (All Branches)

Mode: Online

Duration: 40 Hours

Course Objectives

- COB1. To understand the principles of entrepreneurship and innovation in the context of national development.
- COB2. To develop creative thinking and opportunity identification skills using Design Thinking principles.
- COB3. To enable students to prepare business models and business plans for startup ventures.
- COB4. To provide knowledge of startup establishment, financial planning, legal compliance, and government support mechanisms.
- COB5. To develop leadership, communication, and entrepreneurial skills required for establishing and managing successful startups.

Course Outcomes

After successful completion of this course, the student will be able to:

- CO1. Explain the fundamentals of entrepreneurship, innovation, and the startup ecosystem.
- CO2. Identify business opportunities and apply Design Thinking to develop innovative solutions.
- CO3. Prepare a Business Model Canvas and formulate a comprehensive business plan.
- CO4. Demonstrate knowledge of startup registration, intellectual property rights, financial planning, and funding mechanisms.
- CO5. Develop and present a startup proposal using effective communication, leadership, and business pitching skills.

CO-PO Mapping:

CO / PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO1	2	–	–	–	–	–	2	–	–	–	3	–
CO2	–	3	2	–	–	–	–	–	–	–	2	–
CO3	–	2	3	–	–	2	–	–	–	–	2	–
CO4	–	2	–	–	–	3	–	2	–	–	2	–
CO5	–	–	–	–	–	–	–	–	2	3	3	–

UNIT-I: Fundamentals of Entrepreneurship and Innovation (8 Hours)

Concept and importance of entrepreneurship; Entrepreneurial characteristics and competencies; Types of entrepreneurs; Entrepreneurship as a career option; Role of entrepreneurship in economic and social development; Viksit Bharat 2047 and Atmanirbhar Bharat; Innovation and entrepreneurial ecosystem; Startup ecosystem in India; Government initiatives for entrepreneurship including Startup India, Stand-Up India, MSME, Skill India and Atal Innovation Mission.

UNIT-II: Opportunity Identification and Design Thinking (8 Hours)

Creativity and innovation; Design Thinking methodology; Problem identification and need analysis; Opportunity recognition techniques; Customer discovery and customer validation; Market survey methods; Value proposition design; Idea screening and feasibility analysis; Introduction to Lean Startup and Minimum Viable Product (MVP).

UNIT-III: Business Planning and Venture Creation (8 Hours)

Business planning process; Business Model Canvas; Types of business models; Market analysis and competitor analysis; Revenue models; Cost estimation and pricing strategies; Business plan preparation; Risk assessment; Sustainable and social entrepreneurship; Case studies of successful startups.

UNIT-IV: Startup Establishment and Financial Management (8 Hours)

Forms of business organizations; Business registration procedures; Intellectual Property Rights (IPR), patents, trademarks and copyrights; Legal and regulatory compliance; Sources of startup finance; Bootstrapping, Angel Investors, Venture Capital, Incubators and Accelerators; Government funding schemes; Budget preparation; Financial planning and Break-even analysis.

UNIT-V: Business Growth, Digital Entrepreneurship and Startup Pitching (8 Hours)

Digital entrepreneurship; E-commerce business models; Branding and personal branding; Digital marketing using social media platforms; Leadership and team management; Business communication and negotiation skills; Startup scaling strategies; Investor readiness; Preparation of Pitch Deck; Elevator Pitch; Startup project presentation.

Text Books

1. S.S. Khanka, Entrepreneurship Development, S. Chand Publishing, Latest Edition.
2. Vasant Desai, Dynamics of Entrepreneurial Development and Management, Himalaya Publishing House, Latest Edition.
3. Donald F. Kuratko, Entrepreneurship: Theory, Process and Practice, Cengage Learning, Latest Edition.

Reference Books

1. Alexander Osterwalder and Yves Pigneur, Business Model Generation, Wiley.
2. Eric Ries, The Lean Startup, Crown Business.
3. Guy Kawasaki, The Art of the Start 2.0, Portfolio.
4. Peter Thiel and Blake Masters, Zero to One, Crown Business.
5. Tim Brown, Change by Design, Harper Business.
6. Rashmi Bansal, Stay Hungry Stay Foolish, Westland Publications.