



School of Pharmaceutical Sciences & Technology

Curriculum for
Fellowship Program in

ENTREPRENEURSHIP



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(Deemed to be University)

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Course Title: ENTREPRENEURSHIP

Course Type: FELLOWSHIP

Duration: 360 Hours (can be structured as 24 Credits)

Mode: Lectures, Practicals/Hands-on, Project

Overview

This course provides an understanding of the entrepreneurial process within the pharmaceutical and healthcare sectors. It equips learners with skills to identify business opportunities, develop innovative ideas, design business models, understand regulatory and financial frameworks, and translate pharmaceutical innovations into viable start-ups. Students will gain practical exposure to the pharmaceutical start-up ecosystem, innovation management, and funding strategies.

Objectives:

By the end of this course, learners will be able to:

1. Understand the fundamentals of entrepreneurship in the pharmaceutical and healthcare industries.
2. Identify opportunities for innovation and product development in pharma.
3. Develop business and marketing plans tailored to pharmaceutical ventures.
4. Understand the regulatory, ethical, and intellectual property (IPR) aspects related to pharma start-ups.
5. Gain insight into incubation, funding, and scaling of pharma-based start-ups.
6. Learn from real-world case studies of successful pharmaceutical entrepreneurs.

Course Outcome:

CO No. Course Outcome

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| C01 | Explain the concept of entrepreneurship and its relevance to the pharmaceutical industry |
| C02 | Identify and analyze business opportunities in the pharma sector |
| C03 | Develop a business plan and value proposition for a pharmaceutical start-up |
| C04 | Understand regulatory and intellectual property considerations in pharma entrepreneurship |
| C05 | Evaluate funding, incubation, and commercialization strategies |

Teaching & Learning Methods:

1. Interactive lectures and discussions
2. Case study analysis of Indian and global pharma start-ups
3. Guest lectures by entrepreneurs and incubator heads
4. Group projects and pitch presentations
5. Experiential learning through idea generation exercises



Syllabus

Theory - 10 Credits (150 Lecture Hours)

Module 1: Introduction to Entrepreneurship & the Indian Ecosystem (20 Hrs)

In-depth analysis of entrepreneurial concepts, characteristics of successful entrepreneurs, and various business types. Special emphasis on the dynamic Indian entrepreneurial ecosystem and specific government initiatives supporting start-up growth, such as "Startup India" and the Production Linked Incentive (PLI) schemes.

Module 2: Pharmaceutical Sector Opportunities & Business Models (25 Hrs)

Exploration of unique challenges, opportunities, and innovation-driven business models within the pharma and healthcare industries. This includes AI-powered drug discovery, digital health solutions, and an analysis of global and Indian pharma success stories like Biocon and Serum Institute.

Module 3: Ideation, Opportunity & Market Research (25 Hrs)

Methods for identifying unmet medical needs, converting innovative ideas into viable concepts, and validating them through detailed feasibility studies and market research. Focuses on translating research outcomes into entrepreneurial opportunities.

Module 4: Business Model & Comprehensive Planning (30 Hrs)

Designing an effective business model canvas. Topics include defining value propositions, conducting competitive analysis, assessing risks, and developing detailed marketing, operational, and revenue models tailored for pharmaceutical ventures.

Module 5: Legal, Regulatory, and IP Aspects (30 Hrs)

Detailed coverage of national and international regulatory authorities (CDSCO, DCGI, FDA, EMA) and quality compliance requirements (p. 3). Focus on Intellectual Property Rights (IPR), patents, licensing, technology transfer, and ethical considerations in research and clinical trials.

Module 6: Funding & Financial Management (20 Hrs)

Sources of financing for pharma start-ups, including government schemes (BIRAC, DBT), angel investors, and venture capitalists. Covers financial planning, budgeting, cost analysis, and risk management strategies for early-stage ventures.

Practical/Hands-on Component: 8 Credits (120 Lab Hours)

Practical 1: Case Study Analysis & Idea Generation Workshops

Workshops involving detailed analysis of real-world Indian and global pharma start-ups. Students will engage in structured idea generation exercises to recognize and articulate specific unmet medical or healthcare needs.

Practical 2: Market Research & Feasibility Analysis Simulation



Hands-on practice using market data and research tools to conduct feasibility studies for proposed product or service ideas. This involves segmenting customer bases and conducting competitive landscaping.

Practical 3: IPR Search & Regulatory Pathway Mapping

Guided exercises in searching patent databases to assess novelty and freedom to operate. Students will map the specific regulatory approval pathways (e.g., dossier preparation in CTD format) required for a chosen pharmaceutical product or device in different markets.

Practical 4: Financial Modeling & Risk Assessment Exercises

Development of basic financial models for a hypothetical start-up, including cost analysis, pricing strategies, and projected return on investment (ROI). Risk assessment exercises to identify potential operational and market risks.

Practical 5: Business Plan & Pitch Deck Development

Group work focused on compiling a comprehensive business plan. The module culminates in the creation and refinement of a professional "pitch deck" for presentation to a mock investor panel.

Project: 6 Credits (90 Self Study/Research Hours)

The project is a significant, applied capstone experience where students work individually or in groups to develop a complete, investable business proposal.

Project Title Examples:

- Development of a Business Plan for an AI-Powered Drug Discovery Platform.
- Feasibility Analysis and Regulatory Strategy for a Novel Telepharmacy Service.
- Market Entry Strategy for a New Generic Formulation in the Indian Market.

References:

1. Hisrich, R.D., Peters, M.P., & Shepherd, D.A. *Entrepreneurship*, McGraw-Hill Education.
2. Drucker, P.F. *Innovation and Entrepreneurship*, Harper Business.
3. A. S. Hornby. *Entrepreneurship in Pharmaceutical Industry: Challenges and Opportunities*.
4. Government of India. *Startup India Initiative – Policy and Guidelines*.
5. BIRAC (DBT) resources on *Biotech Start-ups and Entrepreneurship*.
6. Case studies from *Indian Pharma Start-ups* (e.g., Biocon, Serum Institute, Bharat Biotech, Laurus Labs).