

BIOENTREPRENEURSHIP

Course Objectives: The life science industry is developing rapidly worldwide where the integration of biotechnology with entrepreneurship has been established. Bio-entrepreneurship is an interdisciplinary course which broadly deals with how to set up a business with biological entities. The objectives of this course are to familiarize students with business skills and values for developing their business ventures and to teach them to identify a winning business opportunity, gather funding and launch a business, manage marketing and finances, grow and nurture the organization and finally harvest the rewards.

Course Content: This course provides an introduction to the basics of product and service innovation in life science. The course will also provide an overview of the life science market and business development opportunities in the life science industry. After the course the student will have obtained skills in project management, communication and networking.

Teaching Methods: Lectures, seminars and workshops as well as assignments at both group and individual level.

Student Learning Outcomes: Students would be able to know the skills needed for an entrepreneur or in other words be able to gain entrepreneurial skills, identify and meet a market need; would be able to choose location and set up business; market his/her business and manage staff, will have an understanding of finance and record keeping, and legal, ethical, and social obligations; understand the various processes involved in setting up the business, identify scope for entrepreneurship in biosciences, explore creative opportunities in markets and utilize the schemes promoted through knowledge centres and various agencies. They should learn to sell products and services according to their level of specialization.

Unit I: FUNDAMENTALS IN BIOENTREPRENEURSHIP

10 lectures

Introduction to bio-business, qualities of entrepreneurs, scope of bioentrepreneurship, types of industries in the bio-sector and their competitive dynamics, creating opportunities in bio-industry, innovation and translational research, risk factors and tools for strategic decision, Entrepreneurship development programs of public and private agencies (MSME, DBT, BIRAC, Startup, Make In India), Patent landscape, IP protection and commercialization strategies.

Unit II: DEVELOPING A BUSINESS PLAN AND FINANCE MANAGEMENT

12 lectures

Business plan preparation (from lab to the market): Feasibility analysis by SWOT, socio-economic costs benefit analysis, sources of financial assistance, processes of negotiation with financiers, government and regulatory authorities, making a business proposal, pricing strategy, budget planning, statutory and legal requirements, financial management, basics in accounting practices, collaborations & partnership, information technology.

Unit III: MARKETING STRATEGIES

9 lectures

Market conditions and segments, Market research, identifying customer needs, competitive positioning, prediction of market changes, branding issues, developing distribution channels, promotion policies, challenges in marketing bio-products, recruitment of human resources, leadership and managerial skills, organization structure and team work, agreement and contract terms.

Unit IV: TECHNOLOGY MANAGEMENT

9 lectures

Institutions of research and knowledge centres, technology transfer agencies, regulations for transfer of foreign technologies, quality control, bioethics and biosafety issues, understanding of regulatory compliances and procedures (CDSCO, NBA, GLP, GMP); scope of R&D, Technology development & upgradation, assessment of technology development, managing technology transfer.

TEXT BOOKS/ REFERENCES:

1. Science Business: The Promise, the Reality, and the Future of Biotech 1st Edition by Gary P. Pisano. ISBN-13: 978-1591398400; ISBN-10: 1591398401
2. From Alchemy To IPO: The Business of Biotechnology by Cynthia Robbins-roth ISBN-10: 073820482X; ISBN-13: 978-0738204826
3. Building Biotechnology: Biotechnology Business, Regulations, Patents, Law, Policy and Science 4th Edition by Yali Friedman ISBN-13: 978-1934899298; ISBN-10: 193489929
4. All in: 101 Real Life Business Lessons for Emerging Entrepreneurs Hardcover 2017, BillGreen. Publisher: Koehler Books, ISBN-10: 1633934667; ISBN-13: 978-1633934665.
5. Exploring Entrepreneurship: Practices and Perspective, 1/e, 27 Jul 2011 by Richard Blundel & Nigel Lockett Oxford University Press, ISBN-10. 9780199642328 ; ISBN-13. 978-0199642328 .
6. Entrepreneurship for everyone: A student textbook by Robert Mellor, SAGE Publications Ltd, <https://doi.org/10.4135/9781446216491>