

## Subject Description Form

<b>Subject Code</b>	ABCT5103
<b>Subject Title</b>	Intellectual Property Strategy for Biotech Entrepreneurship
<b>Credit Value</b>	3
<b>Level</b>	5
<b>Pre-requisite</b>	Nil
<b>Co-requisite</b>	Nil
<b>Exclusion</b>	Nil
<b>Objectives</b>	<ol style="list-style-type: none"><li>1. Equip students with in-depth understanding of intellectual property rights, their significance in the biotech industry, and the intricacies of patenting.</li><li>2. Cultivate the ability to strategically plan and manage intellectual property portfolios in a startup environment while addressing the ethical implications and controversies in biotech patenting.</li><li>3. Provide a holistic perspective on international patent laws and the role of IP in drug commercialization, partnerships, and biotech business models, emphasizing practical application in real-world scenarios.</li><li>4. Highlight evolving trends in biotech intellectual property and foster an entrepreneurial mindset, preparing students for upcoming challenges and opportunities in a rapidly changing biotech landscape.</li></ol>
<b>Intended Learning Outcomes</b>	<p>Upon completion of the subject, students will be able to:</p> <ol style="list-style-type: none"><li>a) demonstrate comprehensive understanding of intellectual property rights, their significance in biotech, and the intricacies of patenting.</li><li>b) apply effective IP strategies for biotech startups, considering ethical dimensions and real-world scenarios.</li><li>c) analyze the role of international patent laws in biotech and evaluate IP's impact on drug commercialization, partnerships, and business models.</li><li>d) anticipate evolving biotech IP trends and showcase an entrepreneurial mindset prepared for upcoming industry challenges.</li></ol>

<p><b>Subject Synopsis/ Indicative Syllabus</b></p>	<ol style="list-style-type: none"> <li><b>1. Foundations of Intellectual Property (IP)</b> <ul style="list-style-type: none"> <li>- Overview of IP rights: patents, copyrights, trademarks, trade secrets</li> <li>- Philosophical and economic rationales behind IP</li> </ul> </li> <li><b>2. Patenting in Biotechnology</b> <ul style="list-style-type: none"> <li>- Anatomy of a patent and patent document essentials</li> <li>- The patent application process, including provisional and non-provisional patents</li> </ul> </li> <li><b>3. Strategic IP Management in Biotech Startups</b> <ul style="list-style-type: none"> <li>- Importance of a robust IP portfolio for startups</li> <li>- Licensing, tech transfer, and IP monetization strategies</li> </ul> </li> <li><b>4. Ethical and Controversial Aspects of Biotech Patenting</b> <ul style="list-style-type: none"> <li>- Patenting life: genes, organisms, and biologics</li> <li>- Regional and global variations in biotech patent laws</li> </ul> </li> <li><b>5. International Patenting: The Patent Cooperation Treaty (PCT)</b> <ul style="list-style-type: none"> <li>- Overview and advantages of the PCT system for biotech startups</li> <li>- Navigating international patent enforcement challenges</li> </ul> </li> <li><b>6. Commercial Aspects of Biotech IP</b> <ul style="list-style-type: none"> <li>- Role of IP in drug development and commercialization</li> <li>- Strategic partnerships, mergers, and acquisitions in biotech</li> </ul> </li> <li><b>7. IP Litigation and Disputes in Biotech</b> <ul style="list-style-type: none"> <li>- Common causes and case studies of biotech patent disputes</li> <li>- Strategies for avoiding and navigating IP litigation</li> </ul> </li> <li><b>8. Business Models and IP Strategy in Biotech</b> <ul style="list-style-type: none"> <li>- Key components of a biotech business model and its intersection with IP</li> <li>- Case studies of successful business models in biotech startups</li> </ul> </li> <li><b>9. Future Trends in Biotech IP</b> <ul style="list-style-type: none"> <li>- Evolving landscapes: CRISPR, AI, personalized medicine</li> <li>- Anticipating and navigating future challenges and opportunities in biotech IP</li> </ul> </li> </ol>
<p><b>Teaching/Learning Methodology</b></p>	<p>Lectures, Tutorials, Quiz, Assignments, Examinations.</p> <ol style="list-style-type: none"> <li>1. Attendance – Students are expected to attend at least 80% of both the lecture and tutorial classes.</li> <li>2. Quiz – Throughout the course, students will undertake periodic quizzes to test their understanding of specific topics. These quizzes will cover foundational concepts in intellectual property, patent strategies, and biotech trends. The quizzes will be a mix of multiple-choice questions, short answers, and scenario-based problems. The objective is to ensure continuous learning and retention of course material. Students' analytical skills will be assessed based on their ability to interpret and respond to scenario-based problems. Feedback from quizzes can also guide instructors on areas that may need more emphasis or clarity.</li> <li>3. Written Assignments – Students will be tasked with drafting essays on selected topics related to intellectual property strategies in biotech startups.</li> </ol>

	<p>These essays will be assessed based on the depth of understanding of the topic and its relevance to the biotech industry. Additionally, students are expected to provide their own insights and perspectives, showcasing their analytical prowess and capability to critically evaluate IP challenges and strategies in the biotech sector.</p> <p>4. Final Examination - Written exams assess how much students have learned about the concepts of intellectual property rights and their significance in the biotech industry.</p>					
<b>Assessment Methods in Alignment with Intended Learning Outcomes</b>	Specific assessment methods/tasks	% (weighting)	Intended subject learning outcomes to be assessed (Please tick as appropriate)			
			a	b	c	d
	1. Attendance	10	√	√		
	2. Quiz	20	√	√	√	
	3. Written Assignments	20	√		√	√
	4. Final Examination	50	√			√
	Total	100 %				
<p>Writing skills will be assessed in all the assessment methods.</p> <p>Students are allowed to use GenAI tools to support their writing of and essays. If GenAI tools are used to support their essay writings, students must declare the use of such tools and how they have been used in the assessments. It should be noted that submitting a work generated by GenAI, in part or in whole, as your own (even in paraphrased form) constitutes an act of academic dishonesty; it is no different from asking another person to write your assignment or claiming others' ideas as yours.</p>						
<b>Student Study Effort Expected</b>	Class contact:					
	▪ Lecture				26 Hrs.	
	▪ Tutorial				13 Hrs.	
	Other student study effort:					
	▪ Assignment				15 Hrs.	
	▪ Self study				63 Hrs.	
	Total student study effort				117 Hrs	
<b>Reading List and References</b>	<p>1. Sullivan, P. H. (2000). Value-driven intellectual capital: How to convert intangible corporate assets into market value. John Wiley &amp; Sons. ISBN : 0471351040</p>					

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|  | 2. Singh, H. B., Jha, A., & Keswani, C. (Eds.). (2016). Intellectual property issues in biotechnology. Wallingford, Oxfordshire ; Boston, MA : CABI. ISBN : 9781780646534 |
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