

## Subject Description Form

<b>Subject Code</b>	ABCT3102
<b>Subject Title</b>	Commercialization of Biotechnology Products
<b>Credit Value</b>	2
<b>Level</b>	3
<b>Pre-requisite / Co-requisite/ Exclusion</b>	ABCT2423 Organic Chemistry or equivalent
<b>Objectives</b>	To understand the process of commercialization of biotechnology products To understand the patent process
<b>Intended Learning Outcomes</b>	Upon completion of the subject, students will be able to: a) Understand the process of drug development from bench work to preclinical to clinical trial b) Understand what is intellectual property and its importance in biotechnology c) Identify different components of a patent d) Write a business plan for a start-up biotechnology company
<b>Subject Synopsis/ Indicative Syllabus</b>	<p>Process of developing a drug: from bench to a product including Product Life Cycle Management and tools (14 hours)</p> <ul style="list-style-type: none"> <li>• <i>In vitro</i> activity</li> <li>• <i>In vivo</i> activity</li> <li>• Pharmacokinetics (ADME) and toxicity</li> <li>• Pre-clinical trial</li> <li>• Clinical trial phase I, II and III</li> <li>• Cost estimation of each stage</li> </ul> <p>Innovation (2hrs)</p> <p>Importance of patents in biotechnology (2 hours)</p> <ul style="list-style-type: none"> <li>• Different kinds of patents: Utility, Design, Plant, or Provisional Patent.</li> <li>• Writing Descriptions, Claims, or Abstracts for a patent application</li> <li>• Brief introduction to the US Patents and Trademark Office, World Intellectual Property Organization (WIPO) and State Intellectual Property Office of the People's Republic of China</li> </ul> <p>Business plan (2 hours)</p> <ul style="list-style-type: none"> <li>• Purpose of a business plan.</li> <li>• Different components of a business plan</li> </ul>

	<ul style="list-style-type: none"> <li>• Writing your own business to raise funding for a start-up biotech company</li> </ul>																																																						
<b>Teaching/Learning Methodology</b>	Lecture, Tutorial, Mini-Project: preparation and presentation of a business plan, Presentation: identification of different components of a real-life patent																																																						
<b>Assessment Methods in Alignment with Intended Learning Outcomes</b>	<table border="1"> <thead> <tr> <th rowspan="2">Specific assessment methods/tasks</th> <th rowspan="2">% weighting</th> <th colspan="6">Intended subject learning outcomes to be assessed (Please tick as appropriate)</th> </tr> <tr> <th>a</th> <th>b</th> <th>c</th> <th>d</th> <th>e</th> <th></th> </tr> </thead> <tbody> <tr> <td><b>1. Tutorial discussions</b></td> <td>25</td> <td>√</td> <td>√</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><b>2. Mid-term written report</b></td> <td>30</td> <td>√</td> <td>√</td> <td>√</td> <td></td> <td></td> <td></td> </tr> <tr> <td><b>3. Final project of business plan</b></td> <td>45</td> <td>√</td> <td></td> <td>√</td> <td>√</td> <td>√</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Total</td> <td>100 %</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>a)knowledge b)teamwork c) creativity d) writing quality e) logical flow</p>	Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed (Please tick as appropriate)						a	b	c	d	e		<b>1. Tutorial discussions</b>	25	√	√					<b>2. Mid-term written report</b>	30	√	√	√				<b>3. Final project of business plan</b>	45	√		√	√	√										Total	100 %						
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<b>Reading List and References</b>	<ol style="list-style-type: none"> <li>1. Drugs, From Discovery to Approval, By Rick Ng. Wiley-Blackwell, 2<sup>nd</sup> Ed. 2009- Online library</li> <li>2. The Open Innovation Revolution- by Stefan Lindegaard – Online library</li> </ol>																																																						