# The Hong Kong Polytechnic University

## Subject Description Form

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| **Subject Code** | ABCT3104 |
| **Subject Title** | Commercialization of Biotechnology Products |
| **Credit Value** | 3 |
| **Level** | 3 |
| **Pre-requisite/ Co-requisite/ Exclusion** | NIL |
| **Objectives** | To learn the process of commercialization of biotechnologyproducts.<br>To get familiar with the process of drug development and patent application/maintenance.<br>To learn writing a business plan with professional format. |
| **Intended Learning Outcomes** | Upon completion of the subject, students will be able to:<br>a) apply the knowledge of drug development from bench work to preclinical to clinical trial<br>b) Understand what is intellectual property andits importance in biotechnology<br>c) Identify different components of a patent<br>d) Write a business plan for a start-up biotechnology company |
| **Subject Synopsis/ Indicative Syllabus** | Process of developing a drug: from bench to a product including Product Life Cycle Management and tools<br>• *In vitro* activity<br>• *In vivo* activity<br>• Pharmacokinetics (ADME) and toxicity<br>• Pre-clinical trial<br>• Clinical trial phase I, II and III<br>• Cost estimation of each stage<br><br>Importance of patents in biotechnology<br>• Different kinds of patents: Utility, Design, Plant, or ProvisionalPatent.<br>• Writing Descriptions, Claims, or Abstracts for a patent application<br>• 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<br><br>Business plan<br>• Purpose of a business plan.<br>• Different components of a business plan<br>• Writing your own business to raise funding for a start-up biotech company |

<table>
<tr><td>Teaching/Learning Methodology</td><td>Lecture, Tutorial, Mini-Project: preparation and presentation of a business plan, Presentation: identification of different components of areal-life patent</td></tr>
<tr><td>Assessment Methods in Alignment with Intended Learning Outcomes</td><td>
<table>
<tr><td rowspan="2">Specific assessment methods/tasks</td><td rowspan="2">% weighting</td><td colspan="6">Intended subject learning outcomes to be assessed (Please tick as appropriate)</td></tr>
<tr><td>a</td><td>b</td><td>c</td><td>d</td><td></td><td></td></tr>
<tr><td>1. Attendance</td><td>10</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td><td></td><td></td></tr>
<tr><td>2. Tutorials</td><td>20</td><td>✓</td><td>✓</td><td></td><td></td><td></td><td></td></tr>
<tr><td>3. Mid-term report</td><td>25</td><td>✓</td><td>✓</td><td>✓</td><td></td><td></td><td></td></tr>
<tr><td>4. Final project</td><td>45</td><td>✓</td><td></td><td>✓</td><td>✓</td><td></td><td></td></tr>
<tr><td>Total</td><td>100 %</td><td colspan="6"></td></tr>
</table>
<br>1. Attendance<br>Students are required to attend at least 75% of scheduled sessions for the subject. Students fail to fulfill the attendance requirement will lose the 10% attendance score.<br><br>2. Tutorials<br>Students are expected to actively participate in the tutorials and discussions. They will be graded based on their performance in the discussions.<br><br>3. Mid-term report<br>Students are expected to write an individual report based on a topic chosen by the lecturer and student.<br><br>4. Final project<br>An individual business plan will be produced by the student.
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<tr><td rowspan="4">Student Study Effort Expected</td><td>Class contact:</td><td></td></tr>
<tr><td>▪ Lecture</td><td>26 Hrs.</td></tr>
<tr><td>▪ Tutorial / Seminar / Presentation</td><td>13 Hrs.</td></tr>
<tr><td></td></tr>
<tr><td rowspan="4"></td><td>Other student study effort:</td><td></td></tr>
<tr><td>▪ Self study including assignments & reading</td><td>50 Hrs.</td></tr>
<tr><td>▪ Business plan preparation</td><td>32 Hrs.</td></tr>
<tr><td>Total student study effort</td><td>121 Hrs.</td></tr>
<tr><td>Reading List and References</td><td colspan="2">1. Drugs, From Discovery to Approval, By Rick Ng. Wiley-Blackwell, 2nd Ed. 2009- Online library<br>2. The Open Innovation Revolution- by Stefan Lindegaard – Online library<br>3. Biotechnology Entrepreneurship: Leading, Managing and</td></tr>
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| | Commercializing Innovative Technologies, By Craig Shimasaki, 2nd Ed. 2020<br>4. Managing Biotechnology: From Science to Market in the Digital Age, By Francoise Simon, Glen Giovannetti, 1st Ed. 2017<br>5. How to Start a Life Science Company: A Comprehensive Guide for First-Time Entrepreneurs Paperback, By Leah Cannon, November 24, 2017 |