The Hong Kong Polytechnic University

Subject Description Form

Subject Code	LGT4312
Subject Title	Managing Innovation and Technology
Credit Value	3
Level	4
Normal Duration	1-semester
Pre-requisite / Co-requisite/ Exclusion	Nil
Objectives	This subject addresses selected challenges and opportunities related to managing innovation and new technology. It intends to discuss some fundamental concepts, theorems, and tools to help students develop skills and insights for designing, evaluating, and managing business innovation and new technology. Moreover, the subject also plans to introduce various kinds of latest innovations in product design, trendy technology, operations process, and business models. The subject aims to not only provide students with general understanding on effective management of innovation and technology, but also provides rich practical examples to reflect the latest innovation and technology advances, with special focus on the ones that have wide applications in supply chain and logistics related industries.
Intended Learning Outcomes	Upon completion of the subject, students will be able to: a. outline the strategic role of innovation in organization, industry, and global market; b. identify the technological, human, economic, organizational, social, ethical, and other dimensions of innovation; c. apply concepts, theorems, and tools to develop critical and analytical reasoning about innovation in and beyond organizations; d. apply various latest innovation and technology in the areas of supply chain and logistics industries.
Subject Synopsis/ Indicative Syllabus	▪ Key issues in managing innovation: concept of innovation, innovation and competitive advantage, various innovation strategies, sources of innovation, innovation selection, innovation implementation, capturing innovation value. ▪ Innovation and technology development under uncertainty, portfolio management, resource allocation, innovation execution under uncertainty, disruptive innovation, risk management. ▪ Product and technology innovation, e.g., 3D printing, last-mile delivery, autonomous vehicles, blockchain technology, information security, green

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<tr><td></td><td>technology, big data analytics, etc.
▪ Operation process innovation, e.g., pooling, postponement, flexibility, Toyota production system, fast pass waiting line management, etc.
▪ Business model innovation, e.g., omni-channel retailing, sharing economy, crowdfunding, crowdsourcing, innovative supply chain financing, etc.</td></tr>
<tr><td>Teaching/Learning Methodology</td><td>Lectures: introduce concepts, theories, management issues, and latest applications of innovation and technology.

Case study and group discussion: make connections of the contents from the lectures with real business practices to deepen the understanding of concepts, theories, and issues of innovation and technology.

Online simulation games: enhance the students' understanding and give them hands-on experience on managing (disruptive) innovation and technology.

Group project: provide students valuable opportunity to explore, recognize, and analyze key innovation and technology of their interests.</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. Coursework</td><td>60%</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td><td></td><td></td></tr>
<tr><td>Participation</td><td>10%</td><td></td><td></td><td>✓</td><td>✓</td><td></td><td></td></tr>
<tr><td>Individual Assignment(s)</td><td>10%</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td><td></td><td></td></tr>
<tr><td>Group Assignment(s)</td><td>40%</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td><td></td><td></td></tr>
<tr><td>2. Examination</td><td>40%</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>
Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:
1. Coursework may consist of case study, simulation report, course final project and presentation, which can assess students' understanding in the subject and evaluate their ability to analyze problems in real business environment.
2. Examination assesses student's in-depth understanding on the theoretical principles of the subject and the ability to apply conceptual framework in real business case analysis.
3. To reflect the significant technology content in this subject, 10% (or more) of the overall weighting of this subject is based on individual assessment concerning technology-related knowledge.
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Student Study Effort Expected	Class contact:	
	▪ Lectures	26 Hrs.
	▪ Tutorials	13 Hrs.
	Other student study effort:	
	▪ Group discussions	12 Hrs.
	▪ Projects	42 Hrs.
	▪ Reading and homework	33 Hrs.
	Total student study effort	126 Hrs.
Reading List and References	Instructor's lecture notes, handouts, and reading materials Karl Ulrich, Christian Terwiesch, Innovation Tournaments: Creating and Selecting Exceptional Opportunities, Harvard Business Review Press, 2009 Joe Tidd, John Bessant, Managing Innovation: Integrating Technological, Market and Organizational Change (7th edition), Wiley, 2020 Henk Zijm, Matthias Klumpp, Uwe Clausen, Michael ten Hompel, Logistics and Supply Chain Innovation: Bridging the Gap between Theory and Practice, Springer International Publishing, 2016 Karan Girotra, Serguei Netessine, The Risk-Driven Business Model: Four Questions That Will Define Your Company, Harvard Business Review Press, 2014 ***Journals*** Management Science Manufacturing and Operations Management Production and Operations Management Journal of Operations Management	