The Hong Kong Polytechnic University

<u>Subject Description Form</u>

Subject Offering Department	Department of Logistics and Maritime Studies
Subject Code	LGT2BN02
Subject Title	Principles of Operations Management
GUR Requirements	☑ **Cluster Area Requirement (CAR)** ☐ Human Nature, Relations and Development [CAR(A)] ☐ Science, Technology and Environment [CAR(D)] ☐ Chinese History and Culture [CAR(M)] ☑ Cultures, Organisations, Societies and Globalisation [CAR(N)] ☐ **AI and Data Analytics [GUR-AIDA]** ☐ **Innovation and Entrepreneurship [GUR-IE]** ☐ **Healthy Lifestyle** ☐ **Leadership & Intra-personal Development (LIPD)** ☐ **Languages and Communication Requirement (LCR)** ☐ **Service-Learning**
Reading/Writing Requirements in English/Chinese	☐ **China-Study Requirement** (CSR) 　More than 60% CSR-related content ☐ **Eligible for "English Writing" (EW) designation** 　include an extensive piece of writing (1,500 - 2,500 words) ☐ **Eligible for "Chinese Writing" (CW) designation** 　include an extensive piece of writing (2,000 - 3,000 characters) ☐ **Eligible for "English Reading" (ER) designation** 　include a reading of an extensive text (100,000 words or 200 pages) ☐ **Eligible for "Chinese Reading" (CR) designation** 　include a reading of an extensive text (100,000 characters or 200 pages) ☑ **None**
Medium of Instruction	English
Credit Value	3
Level	2
Normal Duration	1-semester
Exclusion	LGT2106 Principles of Operations Management
Objectives	Operations Management (OM) is a functional field of management encompassing the design, operation and improvement of the processes and systems employed in the creation and delivery of an organization's products and services.
Subject Learning Outcomes	Upon completion of the subject, students will be able to: (a) Distinguish the main principles of operations management.

	(b) Demonstrate how service and manufacturing operations create the value in the processes.
	(c) Apply the various models and approaches of operations management to inform decision making in a real business situation.
	(d) Apply data science techniques in solving operations management problems and evaluate their effectiveness and managerial implications.
Subject Synopsis/ Indicative Syllabus	**Introduction** Defining operations management. Relationship of business operations processes with other functions. Managerial roles and skills in the operations function. Supply chain management. **Managing capacity** Economies and diseconomies of scale. Capacity planning. Aggregate planning. Capacity requirement planning. **Managing Materials** Enterprise Resource Planning (ERP) systems. Master production schedule. Managing dependent demand and materials requirements planning system. **Facility planning** Location of facilities. Location decisions. Location factors. Location evaluation methods. Layout of facilities. Systematic layout planning approach. **Operations scheduling** Scheduling n jobs on one machine and two machines. Scheduling workers in service operations. **Managing Projects** Defining projects and project structures. Project management activities. Critical path scheduling. Time-cost trade-off model. **Managing quality** Quality characteristics. Quality control. Quality assurance. Total quality management. Quality costs. Statistical quality control. **Supply Chain Management** Introduce supply chain and value chain. Supply chain strategy. Bullwhip effect. Future supply chain and blockchain concept. Analytics for operations and supply chain management.
Teaching/Learning Methodology	Lectures are designed to provide a basic grounding in principles, concepts and techniques in operations management, and to provide a basis for further analysis and application of the techniques in organizations. Tutorials provide the environment and means for student-centered learning, in the form of class discussions, case analyses, group and individual work, designed to stimulate original and creative thinking, and the capacity to apply the tools and techniques to the solution of operations problems.

Assessment Methods in Alignment with Intended Learning Outcomes	Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed (Please tick as appropriate)			
			a	b	c	d
	Continuous Assessment	**50%**				
	Class participation	5%		✓	✓	✓
	Quiz	5%	✓	✓		
	Individual project	20%	✓	✓	✓	✓
	Midterm test	20%	✓	✓	✓	✓
	Final exam	**50%**	✓	✓	✓	✓
	Total	100 %				

Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:

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.

Assessment of coursework includes class participation, individual project, quiz and test. The quiz, test and final exam will cover all topics in the syllabus, with a focus of testing students' understanding on the concepts of operations management, key techniques of operations management strategies on achieving the firm's organization goals. The individual project will assess the students' data science and analytical skill when dealing with real-life operations management issues. The class participation is assessed to ensure students actively participate in class discussion for promoting more interactive learning environment.

Student Study Effort Expected	Class contact:	
	Lectures	26 Hrs.
	Tutorials	13 Hrs.
	Other student study effort:	
	Preparation for discussion	45 Hrs.
	Preparation for project/ assignments/ Exams	42 Hrs.
	Total student study effort	126 Hrs.

Reading List and References	**Recommended Textbooks**
	Jacobs, F.R. and Chase, R.B. (2021). *Operations and Supply Chain Management (16th ed.)*, McGraw-Hill.
	Jacobs, F.R., and Chase, R.B. (2020). *Operations and Supply Chain Management: The Core (5th ed.)*, McGraw-Hill.
	Heizer, J., Render, B. and Munson, C. (2020). *Operations Management: Sustainability and Supply Chain Management (13th ed.)*, Pearson/Prentice Hall.
	Useful Reference
	Krajewski, L.J., Malhotra, M.K. and Ritzman, L.P. (2015). *Operations Management: Processes and Supply Chains (11th ed.)*, Pearson/Prentice Hall.
	Schroeder, R.G., Rungtusanatham, M.J. and Goldstein, S.M. (2017). *Operations Management in the Supply Chain: Decisions and Cases (7th ed.)*, McGraw-Hill.
	Casey, M.J. and Wong, P. (2017). Global supply chains are about to get better, thanks to blockchain, *Harvard Business Review* (https://hbr.org/2017/03/global-supply-chains-are-about-to-get-better-thanks-to-blockchain).
	Guar, V. and Gaiha, A. (2020). Building a transparent supply chain: Blockchain can enhance trust, efficiency, and speed, *Harvard Business Review*, May-June, 94-103.