

The Hong Kong Polytechnic University

Subject Description Form

Subject Code	LGT5105
Subject Title	Managing Operations Systems
Credit Value	3
Level	5
Normal Duration	1-semester
Pre-requisite / Co-requisite/ Exclusion	Nil
Role and Purposes	<p>This module introduces students to both the philosophy and the techniques of operations management. Students will understand the basic concepts and basic tools in operations management, and become familiar with the scientific methods used in daily management.</p> <p>This subject contributes to the following Intended Learning Outcomes for the following programme(s):</p> <p>MSc in Global Supply Chain Management #2 Build up operations and logistics concepts #5 Practise business ethics</p> <p>MSc in Management (Operations Management) #1: Solve business problems #3 Practise business ethics</p>
Subject Learning Outcomes	<p>Upon completion of the subject, students will be able to:</p> <ul style="list-style-type: none">(a) Understand the terminology of operations management.(b) Understand basic concepts of various areas of operations management.(c) Build up basic quantitative models that are used for decision-making in operations management, including assumptions and limitations of the models.(d) Apply these models practically in management issues with critical thinking and creative manner to solve real life problems.(e) Beware of ethical issues in business.

**Subject Synopsis/
Indicative Syllabus**

Introduction to Operations System

The concepts, the operations functions and its relation with other business functions, particularly, strategic aspects of operations management and its relationship to major elements of business models.

Business Process Design and Reengineering

Process concept; process design method; process effectiveness and efficiency; business process reengineering.

Forecasting

Objective of forecasting; logic of forecasting; qualitative and quantitative methods for forecasting; measurement and monitoring of forecasting systems; machine learning techniques.

Capacity Planning

Strategic capacity planning; equipment management; concept of total cost of ownership; volume analysis; breakeven models; decision tree analysis.

Facility Location and Layout

Factors affecting location decisions; methods for analysing location problems; facility layout problems and decision analysis in manufacturing and service sectors.

Inventory Management

Functions and costs of inventory management; ABC analysis; economic ordering quantity model; vendor managed inventory system; inventory replenishment systems.

Quality Management, Quality Control, Just-in-Time and Lean Operations

Total quality management; quality measurement; quality cost; quality inspection; statistical quality control; Philosophy and concept of JIT systems; pulling versus pushing production system; lean operations.

Supply Chain Management

Concept of supply chain management; information coordination; cost and benefit of postponement; quick response; worldwide sourcing.

Project Management

Project and its working team; project break down; Gantt charts; project time and cost; critical tasks in projects.

Sustainable and Socially Responsible Operations

Ethical issues in operation management; codes of ethics; worker safety; product safety; the environment and quality; employees' right; closing facilities; socially responsible operations.

	<p>Data-driven Operations Management Extract useful information out of a (large) database, and hence making appropriate operations decisions.</p> <p>Industry 4.0 and Sharing Economy Industry 4.0; new technologies in operations; the distinguishing features of sharing business models; the opportunities and challenges.</p>																																															
<p>Teaching/Learning Methodology</p>	<p>Concepts and techniques will be introduced through lectures. Students are required to apply the knowledge and skills to analyse and solve various realistic operations management problems in the form of case studies.</p>																																															
<p>Assessment Methods in Alignment with Intended Learning Outcomes</p>	<table border="1" data-bbox="528 752 1477 1196"> <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>1. Coursework</td> <td>50 %</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td></td> </tr> <tr> <td>2. Examination</td> <td>50 %</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 colspan="6"></td> </tr> </tbody> </table> <p>Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes: Students need to do a group case study, testing whether they know how to apply the theories learnt to some real life situations. Mid-term test and examination are also required to test their understanding and familiarity with the knowledge. <i>To pass this subject, students are required to obtain Grade D or above in BOTH the Continuous Assessment and Exam components.</i></p>		Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed (Please tick as appropriate)						a	b	c	d	e		1. Coursework	50 %	✓	✓	✓	✓	✓		2. Examination	50 %	✓	✓	✓	✓	✓										Total	100 %						
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**Reading List and
References**

Books

Anupindi, R., et. al. *Managing Business Process Flows – Principle of Operations Management*, latest ed, Prentice Hall

Jacobs F.R., Chase, R.B. and Aquilano, N.J., *Operations & Supply Chain*, latest ed., McGraw Hill.

Cheng, T.C.E. and Podolsky, S. (1996), *Just-in-time Manufacturing: An Introduction*, Chapman & Hall.

Klassen, R. D., Menor, L. J. (2006), *Cases in Operations Management*, Sage publication,

Johnston, R. (2003), *Cases in Operations Management*, Finance Times Prentice Hall.

Russell R.S. and Taylor B.W., *Operations Management*, latest ed., Prentice Hall.

Stevenson W.J., *Operations Management*, latest ed., McGraw Hill.

Journals

International Journal of Operations and Production Management

Journal of Operations Management

Management Science