

The Hong Kong Polytechnic University

Subject Description Form

Subject Code	LGT3107
Subject Title	Warehousing and Materials Management
Credit Value	3
Level	3
Normal Duration	1-semester
Pre-requisite/ Co-requisite/ Exclusion	Nil
Role and Purposes	To provide students with the methods and tools necessary for the design and management of warehousing, materials handling systems, and inventory control. In particular, this subject emphasizes the importance of information and system integration with supply chain members (Outcome 6), value creation through user participation (Outcome 8), and the use of a process perspective to improve warehouses and inventory systems quantitatively. On completion students will be able to both analyse existing systems and recommend improvement solutions (Outcome 11).
Subject Learning Outcomes	Upon completion of the subject, students will be able to: <ul style="list-style-type: none"> a. Design and manage warehousing, material handling and inventory control systems. b. Improve existing warehousing, material handling and inventory control systems.
Subject Synopsis/ Indicative Syllabus	Materials handling systems and their objectives: cost reduction, increased productive capacity and better working conditions. Types of handling equipment in manufacturing and warehousing: conveyors, cranes, hoists, and trucks. Their advantages and limitations. Automatic guided vehicles (AGV), Automatic storage and retrieval systems (AS/RS); Critical analysis and measuring the efficiency of existing systems. The unit load concept. Equipment election in different situations. Integrated warehousing systems. Economic analysis of different systems. Planning, layout and design of different types of warehouses. Automation and IT systems in warehouses and materials handling computer systems. Inventory planning and control. Advanced EOQ models and safety stock. Fixed order quantity inventory control. Fixed order cycle inventory control. Just-in-time operations.
Teaching/Learning Methodology	Concepts, theories and key issues will be introduced to students in lectures. Case studies will be used to illustrate some application aspects and to stimulate discussions leading to context-specific knowledge. Students are required to apply the knowledge to analyse some contemporary issues.

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			
	Continuous Assessment	40%	✓	✓			
	Examination	60%	✓	✓			
Total	100 %						
<p>Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:</p> <p>The achievement of the two learning outcomes will be dependent on students' knowledge in conceptual theories and ability to apply certain quantitative techniques.</p> <p>Since examination is effective in assessing the knowledge level in conceptual theories and continuous assessment (including assignments and projects) is effective in assessing the ability in applying techniques, both methods will be needed to assess the two outcomes of this subject.</p> <p><i>To pass this subject, students are required to obtain Grade D or above in BOTH the Continuous Assessment and Exam components.</i></p>							
Student Study Effort Expected	Class contact:						
	▪ Lectures		26 Hrs.				
	▪ Seminars		13 Hrs.				
	Other student study effort:						
	▪ Preparation for lectures and seminars		45 Hrs.				
	▪ Preparation for assignments/projects		42 Hrs.				
	Total student study effort		126 Hrs.				
Reading List and References	<p>Wood, D.F., Wardlow, D.L., Murphy, P.R., Johnson, J.C. (the latest edition) <i>Contemporary Logistics</i>, Prentice Hall, Upper Saddle River, N.J.</p> <p>Frazelle, E. (the latest edition) <i>World-Class Warehousing and Material Handling</i>, McGraw-Hill, Boston.</p> <p>Render, B., Stair, R.M. Jr. (the latest edition) <i>Quantitative Analysis for Management</i>, Prentice-Hall.</p> <p>Francis, R.L., McGinnis, L., and White, J.A. (the latest edition) <i>Facility Layout and Location: An Analytical Approach</i>, Prentice-Hall, Englewood Cliffs, NJ.</p> <p>Ackerman, K.B., (the latest edition) <i>Practical Handbook of Warehousing</i>, Chapman & Hall, New York</p>						