The Hong Kong Polytechnic University

Subject Description Form

Subject Code	LGT4017
Subject Title	Information Systems for Logistics Management
Credit Value	3
Level	4
Normal Duration	1-semester
Pre-requisite	Nil
Objectives	This subject is a high-level subject that seeks to build upon the knowledge students have obtained in an introductory subject of information technology. The role of this subject is to provide, via a case-based teaching and learning approach, a chance for students to develop a deeper understanding of information systems development and application in real business organisations. Students will be challenged to demonstrate their abilities to apply modern information technologies (such as Artificial Intelligence, Big Data, and High-performance Computing) and to improve the business operations, particularly the logistics management. The emphasis is on analysis and overall design of information systems so that optimisation of logistics-related business processes within organisational strategy can be achieved.
Intended Learning Outcomes	Upon completion of the subject, students will be able to: a. Understand the importance of Information System (IS) for logistics and supply chain management, strategies and important considerations in design, implement, and adopt IS for logistics enterprises. b. Understand the current trend and modern technologies in the development and application of IS in the logistics-related operations. c. Apply the software engineering model to design, implement, and manage the information systems in order to improve the efficiency of the logistics-related operations; d. Use existing commercial optimisation, statistical, and simulation software to improve the operation efficiency in logistics. Studying this subject will help develop students' creative thinking, and intrigue their interest in life-long learning to keep abreast of modern information technology.
Subject Synopsis/ Indicative Syllabus	**Introduction to Information Systems in Logistics Management** Basics concepts about information, information systems, logistics management, and their relationships.

	Information Technology Infrastructure
	Nature and definition of Information Technology (IT); Key components, Evolutions and Trends of IT infrastructure; Information system security; Super computing infrastructure.
	Data System and Business Intelligence
	Basic concepts of database and database management system; Types of database; Relational database; Applications of database management; Concepts and applications of business intelligence and big data analytics; the business values of database management system and business intelligence; Internet of Things Applications for logistics management
	Decision Support Systems
	Decision making in logistics management; Operations Research and artificial intelligence foundation of Decision Support Systems (DSS) and its applications in logistics management; opportunities, challenge, and guidelines to manage DSS;
	Enterprise Resource Planning System
	Overview of transaction processing oriented application for product life-cycle management requirement, in particular for ERP and CRM systems.
	E-Commerce Applications
	Information technologies behind E-Commerce; Classifications of E-Commerce; the value of E-Commerce to logistics management; the applications of E-Commerce in logistics management
	System Investigation and Analysis
	Introduction to system development life cycle concept, understanding the system analysis and user requirement specification, and change control procedures. Evaluation of various project development approaches for waterfall model, V-model, Spiral model, prototyping and rapid application development concepts.
	System Design, Implementation and Maintenance
	Introduction to site preparation, test plan and user acceptance test requirement. Evaluation of various data conversion and system migration approaches for parallel run, pilot run, phase-in (piece-meal approach), and direct cut-over (big bang approach). Also to be familiar with the system review, error correction and maintenance procedures.
	Hands-on Topics on Logistics Information Systems
	Basic skills in data analytics, artificial intelligence, database management system, and enterprise resource planning system; basic skills to develop a spreadsheet based decision support system.
Teaching/Learning Methodology	Lectures will be used to introduce to students the concepts, principles, theories, application issues and descriptive cases for the topics. Different teaching materials will be used to cover the most updated development and applications of information technology in the logistics industry. Case studies will be used in lectures to enable students learning context-specific knowledge through discussion. Computer laboratories will be used to provide students with hands-on practice through design and development of information systems.

Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed (Please tick as appropriate)					
		a	b	c	d		
Coursework	50%	✓	✓	✓	✓		
Examination	50%	✓	✓	✓	✓		
Total	100 %						

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

The hand-on experience in software design and development will be evaluated through a term project, which requires student to participate and apply the various information technology project management and system development skills in the project deliverable or its prototypes.

Student Study Effort Expected

Class contact:	
▪ Lecture	26 Hrs.
▪ Tutorial	13 Hrs.
Other student study effort:	
▪ Term project	87 Hrs.
Total student study effort	126 Hrs.

Reading List and References

Recommended Textbook

Management Information Systems: Managing the Digital Firm, 14th Edition, by Laudon, K.C., and Laudon, J.P. (2014), Pearson/Prentice Hall.

Indicative Readings

Principles of Information Systems, 13th Edition, by Stair, R.M. and Reynolds, G. (2016), Cengage Learning.