Subject Description Form

Subject Code	COMP4125
Subject Title	Operations Research and Logistics Management
Credit Value	3
Level	4
Pre-requisite / Co-requisite / Exclusion	**Pre-requisite**: COMP1011, COMP2011
Objectives	The objectives of this subject are to: • provide students an overview of the logistics industry and operations research; • let students understand the technical issues in logistics and operations research; and • teach students how to solve various logistics and operation research problems using mathematics techniques and computer algorithms.
Intended Learning Outcomes	Upon completion of the subject, students will be able to: *Professional/academic knowledge and skills* (a) understand the logistics industry and its operation; (b) be aware of the various factors that affect the performance of a supply chain and their tradeoffs; and (c) solve various logistics problems using computer techniques such as programming and algorithms. *Attributes for all-roundedness* (d) identify and develop problem solutions in a logical manner; (e) solve complex problems in groups and develop group work; and (f) improve presentation and communication skills (through group project presentations).

Subject Synopsis/ Indicative Syllabus

Topic
1. Introduction to Logistics and Operations Research (OR) Background of Logistics and OR; Technical Problems in Logistics and OR
2. Transportation Transportation Models; Vehicle Routing; Path Scheduling; Route Maintenance; Bin Packing
3. Inventory Control Inventory Cost Model; Inventory Control
4. Network Flow Maximum Flow; Multi-commodity Flow; Minimum Cost Flow
5. Forecasting Linear Regression Model; Non-linear regression model; Forecasting Error
6. Facility Placement Optimal Location Problem
7. Radio Frequency Identification (RFID) and e-Logistics RFID application; RFID technical specification, Electronic Product Code; Physical Markup Language

Teaching/ Learning Methodology

This subject aims to introduce the field of logistics and operations research to students, and teach the students how to exploit computer technology to solve classic problems in logistics and operations research.

The lectures will be used to deliver course material that will be practiced/reinforced during the tutorials. Group project presentation will train students' presentation skills.

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	e	f
Continuous Assessment	**60%**						
1. Assignments, Tests & Projects (Case Studies)		✓	✓	✓	✓	✓	✓
Examination	**40%**	✓	✓	✓	✓	✓	
Total	100%						

Student Study Effort Expected	Class contact:	
	▪ Lecture	39 Hrs.
	▪ Tutorial/Lab	0 Hrs.
	Other student study effort:	
	▪ Assignments, Quizzes, Projects, Exam	80 Hrs.
	Total student study effort	119 Hrs.
Reading List and References	**Reference Books:** 1. Taha, Hamdy A., *Operations Research: An Introduction*, 9th Edition, 2010. 2. Simchi-Levi, D., Chen, X. and Bramel, J., *The Logic of Logistics: Theory, Algorithms, and Applications for Logistics and Supply Chain Management*, 2005. 3. Ballou, Roland H., *Business Logistics/Supply Chain Management*, 5th Edition, Prentice Hall, 2003.	