

Subject Description Form

Subject Code	COMP5225						
Subject Title	Software Evolution and Maintenance						
Credit Value	3						
Level	5						
Pre-requisite/ Exclusion	Nil						
Objectives	<p>The objectives of this subject are to:</p> <ol style="list-style-type: none"> 1. Study basic concepts of maintenance and how the concept of system evolution fits into maintenance; 2. Examine different technical and managerial problems of maintenance; 3. provide an opportunity for students to learn the formal types of maintenance, and standard maintenance processes. 						
Intended Learning Outcomes	<p>Upon completion of the subject, students will be able to:</p> <ol style="list-style-type: none"> a) understand the maintenance process and system evolution, and apply metrics to manage maintenance; b) apply configuration management; c) know the problem management process; d) know the basic techniques for managing organizational issues; and e) understand software reuse. 						
Subject Synopsis/ Indicative Syllabus	<ul style="list-style-type: none"> • Software Evolution and Maintenance Concepts • Maintenance Support Processes: Maintenance Planning, Evolution and Maintenance Testing, Configuration Management, Problem Management, Maintenance supporting tools. • Maintenance Measurements: Maintenance Metrics, Maintenance Cost Estimation. • Management and Organizational Issues: Organization Aspect of Maintenance, Maintenance Activities and Role, Outsourcing IT Maintenance, Managing the Maintenance Function, Maintenance Teams. • Maintenance Management Problems: Problems of Software Maintenance, Software Reuse, Legacy Systems. 						
Teaching/Learning Methodology	Class activities including - lecture, tutorial, lab, workshop seminar where applicable						
Assessment Methods in Alignment with Intended Learning Outcomes	Specific Assessment Methods/Tasks	% weighting	Intended subject learning outcomes to be assessed				
			a	b	c	d	e
	Assignments, Tests & Projects	55	✓	✓	✓	✓	✓
	Final Examination	45	✓	✓	✓	✓	✓
	Total	100					

Student study effort expected	Class Contact:	
	Class activities (lecture, tutorial, lab)	39 hours
	Other student study effort:	
	Assignments, Quizzes, Projects, Exams	65 hours
	Total student study effort	104 hours
Reading list and references	<p>(1) Mens, T., Demeyer, S., 2010, Software Evolution, 1st Ed, Springer.</p> <p>(2) April, A., Abran, A., 2008, Software Maintenance Management: Evaluation and Continuous Improvement, 1st Ed, Wiley-IEEE Computer Society.</p> <p>(3) IEEE Std 1219-1998, IEEE Standard for Software Maintenance</p> <p>(4) ISO/IEC FDIS 14764:2005(E), Software engineering - Software life cycle processes – Maintenance</p>	