

Subject Description Form

Subject Code	COMP 2021
Subject Title	Object-oriented Programming
Credit Value	3
Level	2
Pre-requisite/ Co-requisite/ Exclusion	Pre-requisite COMP 1011
Objectives	<p>The objectives of this subject are to:</p> <ol style="list-style-type: none"> 1. To introduce students the basic elements of object-oriented programming 2. To teach students how to program computer systems using an object-oriented programming language 3. To familiarize students the tools that streamline object-oriented development
Intended Learning Outcomes	<p>Upon completion of the subject, students will be able to:</p> <p><u>Professional/academic knowledge and skills</u></p> <ol style="list-style-type: none"> (a) Use an object-oriented programming language to solve computer problems (b) Use an object-oriented programming language to build computer systems <p><u>Attributes for all-roundedness</u></p> <ol style="list-style-type: none"> (c) build computer systems in groups and develop group work (d) cooperate with team members in problem solving
Subject Synopsis/ Indicative Syllabus	<ol style="list-style-type: none"> 1. Object-based programming. Concept of objects and classes. Correspondence between software objects and real-world objects. Constructors and destructors. 2. “Has-a” relationships and encapsulation. Data hiding and protection. 3. Object-oriented programming. Concept of class hierarchies. “Is-a” relationships and inheritance. Overriding of methods. 4. Polymorphism. Run-time binding. Abstract classes and methods. 5. Multiple inheritance/Interfaces 6. Use of UML to model OO projects.
Teaching/Learning Methodology	<p>This subject emphasizes both the conceptual elements in computer programming and practical experiences. A high-level, object-oriented programming language, such as C++ or Java, will be used for illustration purposes.</p> <p>The lectures will be used to deliver course material that will be</p>

	practiced/reinforced during the tutorials/labs. Individual/Group projects will be given to give students hand-on development experience.					
Assessment Methods in Alignment with Intended Learning Outcomes	Specific Assessment Methods/Tasks	% weighting	Intended subject learning outcomes to be assessed			
			a	b	c	d
	Assignments, Tests & Projects	60%	✓	✓	✓	✓
	Final Examination	40%	✓	✓		
	Total	100%				
	A pass in both the continuous assessment and final examination portions are required to pass this subject.					
Student study effort expected	Class Contact:					
	Lecture				39 hours	
	Tutorial/Lab				13 hours	
	Other student study effort:					
	Assignments, Quizzes, Projects, Exams				68 hours	
Total student study effort					120 hours	
Reading list and references	(1) (1) Craig Larman, 2004, Applying UML and Patterns: An Introduction to Object-Oriented Analysis and Design and Iterative Development, Prentice Hall (2) Deitel & Deitel, Java: How to Program, Prentice-Hall, 6th Edition, 2005. (3) Deitel & Deitel, C++: How to Program, Prentice-Hall, 6th Edition, 2007.					