

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 and templates in C++. Interfaces in Java.
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 practiced/reinforced during the tutorials/labs. Group projects will be given to give students hand-on development experience.</p>					
<p>Assessment Methods in Alignment with Intended Learning Outcomes</p>	<p>Specific Assessment Methods/Tasks</p>	<p>% weighting</p>	<p>Intended subject learning outcomes to be assessed</p>			
			<p>a</p>	<p>b</p>	<p>c</p>	<p>d</p>
	<p>Assignments, Tests & Projects</p>	<p>60%</p>	<p>✓</p>	<p>✓</p>	<p>✓</p>	<p>✓</p>
	<p>Final Examination</p>	<p>40%</p>	<p>✓</p>	<p>✓</p>		
	<p>Total</p>	<p>100%</p>				
<p>Student study effort expected</p>	<p>Class Contact:</p>					
	<p>Lecture</p>	<p>35 hours</p>				
	<p>Tutorial/Lab</p>	<p>21 hours</p>				
	<p>Other student study effort:</p>					
	<p>Assignments, Quizzes, Projects, Exams</p>	<p>64 hours</p>				
	<p>Total student study effort</p>	<p>120 hours</p>				
<p>Reading list and references</p>	<p>(1) C. Thomas Wu, An Introduction to Object-Oriented Programming with Java, McGraw-Hill, 3rd Edition Update, 2004. (2) Deitel & Deitel, Java: How to Program, Prentice-Hall, 6th Edition, 2005. (3) Deitel & Deitel, C++: How to Program, Prentice-Hall, 6th Edition, 2007.</p>					