

Subject Description Form

Subject Code	COMP 1011
Subject Title	Programming Fundamentals
Credit Value	3
Level	1
Pre-requisite/ Co-requisite/ Exclusion	None
Objectives	<p>The objectives of this subject are to:</p> <ol style="list-style-type: none"> 1. To provide students with knowledge on the fundamental elements in computer programming. 2. To introduce advanced computer programming techniques necessary for developing more sophisticated computer application programs.
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) understand the programming elements for solving computing-related problems; (b) possess the ability to design and develop efficient computer programs for solving problems; (c) possess the ability to learn other high level programming languages independently; <p><u>Attributes for all-roundedness</u></p> <ol style="list-style-type: none"> (d) develop skills in problem solving using systematic approaches; (e) identify and develop problem solutions in a logical manner; (f) solve complex problems in groups and develop group work.
Subject Synopsis/ Indicative Syllabus	<ol style="list-style-type: none"> 1. Fundamentals of Computing. Basic concepts of computers and computing, compilation and interpretation, elementary programming constructs. 2. Flow controls. Basic flow control: selection, repetition and functions. 3. Data Collections. Structures, lists, sets and strings 4. Program Design. Problem solving, problem correctness, testing and debugging
Teaching/Learning Methodology	<p>This subject emphasizes both the conceptual elements in computer programming and practical experiences. Teaching includes both lectures and hands-on Lab exercises reinforcing taught concepts. Students should attend both lectures and laboratory sessions. Continuous assessments help to reinforce the programming concepts and skills learned for applications.</p>

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	f
	Assignments	65%	✓	✓			✓	✓
	Quizzes		✓	✓			✓	
	Project(s)		✓	✓	✓	✓	✓	✓
	Final Examination	35%	✓	✓	✓	✓	✓	
Total	100%							
<p>Note: Students must pass both the continuous assessment and examination components to pass the course.</p> <p>The continuous assessment and the final examination will be designed to assess the specified learning outcomes. The formats may include written questions, programming exercises and quizzes.</p>								
Student study effort expected	Class Contact:							
	Lecture	39 hours						
	Lab	13 hours						
	Other student study effort:							
	Assignments, Quizzes, Projects, Exams	68 hours						
	Total student study effort	120 hours						
Reading list and references	(1) Stephen Prata, C Primer Plus, 6th Edition, Addison-Wesley Professional, 2013.							
	(2) K. N. King, C Programming: A Modern Approach, 2nd Edition, W. W. Norton & Company, 2008.							
	(3) B. W. Kernighan and D. M. Ritchie, C Programming Language, 2nd Edition, Prentice Hall, 1988.							
	(4) V. Anton Spraul, Think Like a Programmer: An Introduction to Creative Problem Solving, No Starch Press, 2012. (examples in this book are written in C++, but will improve your ability to think like a programmer in any language)							
	(5) John Zelle, Python Programming: An Introduction to Computer Science, 2nd Edition, Franklin, Beedle & Associates, 2010							