Subject Description Form

Subject Code	COMP1011
Subject Title	Programming Fundamentals
Credit Value	3
Level	1
Pre-requisite / Co-requisite / Exclusion	
Objectives	The objectives of this subject are to: 1. provide students with knowledge on the fundamental elements in computer programming; and 2. introduce basic computer programming techniques necessary for developing more sophisticated computer application programs.
Intended Learning Outcomes	Upon completion of the subject, students will be able to: *Professional/academic knowledge and skills* (a) understand the basic components of high-level programming language (e.g., C++); (b) understand the basic routine of writing programs for solving standard computational and logical problems; (c) possess the ability to learn other high-level programming languages independently; *Attributes for all-roundedness* (d) learn and acquire basic skills in problem-solving; and (e) identify and develop problem solutions in a logical manner.
Subject Synopsis/ Indicative Syllabus	**Topic** 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	This subject emphasises 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.

Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed				
		a	b	c	d	e
Continuous Assessment	**45%**					
1. Assignments		✓	✓			✓
2. Quizzes		✓	✓			✓
3. Individual project(s)		✓	✓	✓	✓	✓
Final Examination	**55%**	✓	✓	✓	✓	✓
Total	100%					

Assessment Methods in Alignment with Intended Learning Outcomes

Notes:

If a student fails either the continuous assessment component or fails the final exam component, then his/her overall grade shall not exceed C-.

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.

Student Study Effort Expected

Class contact:

▪ Lecture	39 Hrs.
▪ Lab	13 Hrs.

Other student study effort:

▪ Assignments, Quizzes, Individual projects, Exam	68 Hrs.
Total student study effort	120 Hrs.

Reading List and References

Reference Books:

1. Deitel, H. and Deitel, P., C++ How to Program, 10th ed., Prentice Hall, 2016.

2. Deitel, P. and Deitel, H., C How To Program, 9th ed., Pearson, 2021.

3. Stephen Prata, C Primer Plus, 6th Edition, Addison-Wesley Professional, 2013.

4. V. Anton Spraul, Think Like a Programmer: An Introduction to Creative Problem Solving, No Starch Press, 2012.

5. K. N. King, C Programming: A Modern Approach, 2nd Edition, W. W. Norton & Company, 2008.