Subject Description Form

Subject Code	COMP111
Subject Title	Information Technology Systems
Credit Value	3
Level	1
Pre-requisite / Co-requisite/ Exclusion	Nil
Objectives	The overall objective is to provide students with the foundations of information technology systems and applications. More specifically, this subject is designed to: • introduce the concepts and applications of IT systems • introduce the history, concepts and principles of computer systems, including hardware and software, algorithm design and programming; • introduce the concepts and principles of computer communications and networks, including Internet and WWW; • train students in developing skills and capabilities for using IT systems, and designing and writing computer programs with programming languages and tools; • provide the knowledge about other aspects of IT, including artificial intelligence and database management systems.
Intended Learning Outcomes	Upon completion of the subject, students will be able to: *Professional / academic knowledge and skills:* (a) have a good understanding of the concepts, aspects, and future trends of information technology; (b) have a good understanding of a computer system, including its components, organization, capabilities and limitations; (c) have a good understanding of computer communications and networks; (d) know how to use a computer to solve simple problems by designing algorithms and programming; *Attributes for all-roundedness:* (e) develop skills in problem solving with logical thinking and using systematic planning and actions; (f) work in groups and collaborate with team members to solve complex problems. **Alignment of Programme Outcomes:**

Programme Outcome 1: Enable students to practice their writing skills with project document and report writing.

Programme Outcome 4: Develop student critical thinking through class discussion, lab exercises on solving problems and programming, and project.

Programme Outcome 5: Train students in problem solving with programming skills through lab exercise and project with proper design and implementation.

Programme Outcome 7: Enable students to engage in team work with group-based project and to practice team spirit.

Subject Synopsis/ Indicative Syllabus	**Topic**	**Duration of Lectures (Hours)**
	1. **Overview of Information Technology** Chapter 1	4
	2. **Computer hardware and organization** Chapters 2, 3, 4, 5	6
	3. **Software development** Chapters 6, 7, 8	6
	4. **Algorithm design and analysis** Chapters 6, 9	4
	5. **Databases and information systems** Chapter 12	4
	6. **Computer communications and networks** Chapters 15, 16	4
	Total	**28**

Teaching/Learning Methodology	The subject includes lectures and labs. During lectures, the fundamental concepts, history and evolution, and principles and techniques of IT will be introduced. Discussion on various topics of computing systems and applications will also be conducted. The labs serve the purpose of training the students to apply the knowledge and skills learnt to develop applications. Students are also encouraged to learn through individual study and team work.

Assessment Methods in Alignment with Intended Learning Outcomes

Specific assessment methods/tasks	% weighting	a	b	c	d	e	f
		— Intended subject learning outcomes to be assessed (Please tick as appropriate)					
1. Assignments					✓	✓	
2. Lab exercises	60%	✓	✓		✓	✓	
3. Project			✓		✓	✓	✓
4. Mid-term		✓	✓	✓			
5. Examination	40%	✓	✓	✓	✓	✓	
Total	100 %						

	Assignments include individual programming work and group project. Together with lab exercises, they will be used to assess the ability and skills of students to develop IT applications in terms of requirement analysis, system design, programming and testing. Through group project, report writing and presentation skills will also be assessed. The mid-term exam and final exam are used to assess the students' understanding and problem solving abilities. Concepts and knowledge of system organization, functional components, and design principles will be tested.

Student Study Effort Required	Class contact:	
	▪ Lecture	28 Hrs.
	▪ Laboratory	28 Hrs.

Reading List and References	**Textbook:**
	1. Nell Dale, John Lewis, "Computer Science Illuminated", 3rd edition. Jones and Bartlett Publishers, 2007.
	2. Brian W. Kernighan and Dennis M. Ritchie, "The C Programming Language", Prentice Hall, 1988.
	Reference Books:
	3. Lawrence Snyder, "Fluency with Information Technology – Skills, Concepts, & Capabilities", 3rd edition, Addison Wesley. 2007.
	4. J. Glenn Brookshear, "Computer Science – An Overview", 9th edition, Addison Wesley, 2007.
	5. Brian K. Williams, Stacey C. Sawyer, "Using Information Technology", 7th edition. McGraw-Hill Companies, Inc. 2007
	6. Evans, Martin, and Poatsy, "Technology in Action", 4th edition. Prentice Hall, 2008.