Subject Description Form

Subject Code	EIE2282
Subject Title	Information Technology
Credit Value	3
Level	2
Pre-requisite/ Co-requisite/ Exclusion	Nil
Objectives	1. To provide the foundation knowledge in computer engineering, computer networking and data processing that is essential to modern information system construction. 2. To appreciate how information technologies may be deployed in solving engineering problems.
Intended Subject Learning Outcomes	**Upon completion of the subject, students will be able to:** Category A: Professional/academic knowledge and skills 1. Identify different components of a computer system and understand their features. 2. Understand the basic functions of a computer operating system. 3. Understand the basic principles underlining a database system and be able to set up a simple database. 4. Develop simple database applications. 5. Have the ability to develop simple Web document. 6. Identify different components and technologies used in the Internet and understand their features. Category B: Attributes for all-roundedness 7. Solve problems using systematic approaches. 8. Learn independently and be able to search for the information required.
Subject Synopsis/ Indicative Syllabus	**Syllabus:** 1. Introduction to Computers Introduction to Internet of Things. Introduction to modern computers including number systems, representations of digital data and evolution of computers. Overview of modern hardware and software components including memory, input/output devices, utilities and operating systems. 2. Introduction to data processing and information systems Database systems - data modelling, relational database concept, structured query language (SQL), database management, Web and database linking, database application development. 3. Networking Essentials and the Internet Introduction to computer network: clients and servers, network devices, addressing, routing, Ethernet, Internet, TCP/IP.

Teaching/ Learning Methodology

Teaching and Learning Method	Intended Subject Learning Outcome	Remarks
Lectures	1,2,3,4,6	fundamental principles and key concepts of the subject are delivered to students
Tutorials	1,2,3,4,5,6,7,8	supplementary to lectures with exercises and discussion questions; students will be able to clarify concepts and to have a deeper understanding of the lecture material; students will be given opportunities to present their ideas and solutions to quizzes and small problems; problems and application examples are given and discussed
Laboratory sessions	3,4,5,6,7	students will use open source website creation tool to develop simple Web document; students will examine and test a real-life network setup (IP address, network mask); students will develop simple database applications; students will demonstrate their works to Lab supervisors or submit Lab report

Assessment Methods in Alignment with Intended Subject Learning Outcomes

Specific Assessment Methods/Tasks	% Weighting	Intended Subject Learning Outcomes to be Assessed (Please tick as appropriate)							
		1	2	3	4	5	6	7	8
1. Continuous Assessment (total 100%)									
• Quizzes	30%	✓	✓	✓			✓		
• Written Test	20%	✓	✓	✓			✓	✓	
• Laboratory sessions	30%			✓	✓	✓	✓	✓	✓
• Case study (report + presentation)	20%	✓	✓	✓			✓	✓	✓
Total	100%								

Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:

Specific Assessment Methods/Tasks	Remark
Quizzes	To measure the students' ability to remember facts and figures as well as their comprehension of subject materials such as related to computer architect concepts, networking, and databases
Written test	End-of chapter type problems used to evaluate students' understanding of concepts and skills learned in the classroom
Laboratory sessions	Demonstrations/Lab report based on laboratory exercises will be assessed to evaluate students' technical knowledge and communication skills
Case study	Students are required to search for the information of how information technologies may be deployed in solving engineering problems. They need to give presentations to the whole class so that students can learn from other students. Also, they need to submit a case study report of the findings.

Student Study Effort Expected		
	Class contact (time-tabled):	
	• Lecture/Tutorial	24 Hours
	• Laboratory	9 Hours
	• Presentation	6 Hours
	Other student study effort:	
	• Self-study	44 Hours
	• Case study	22 Hours
	Total student study effort:	**105 Hours**

Reading List and References

Reference Books:

1. J.F. Kurose & K.W. Ross, *Computer Networking: A Top-Down Approach*, 7th edition, Pearson, 2017.
2. Carlos Coronel & Steven Morris, *Database Systems: Design, Implementation, & Management* 12th Edition, Course Technology, 2016
3. B. Williams and S. Sawyer, *Using Information Technology: A Practical Introduction to Computers and Communications*, 11th ed. McGraw-Hill, 2014.

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