

CICT1513 Information Technology & Application

Course Description

This subject on Fundamental Concepts in Information and Communication Technology (ICT) aims to provide learners with a broader knowledge background on ICT and deeper understanding of problems and solutions in developing ICT strategies and systems for business organizations and society. Topics designed aim to assist learners with a concrete knowledge foundation in ICT, state-of-the-art methods and supporting technologies as well as to demonstrate to learners the applicability of ICT in daily activities. Learners will also go in-depth on the examples and issues of using ICT in daily lives which has created significant impacts on the society, organizations, as well as individuals.

Course Objectives

This subject is designed to enable students to:

- Know the concepts of Information and Communication Technology (ICT) and the knowledge era.
- Master the use of ICT daily lives which has affected the society, organizations and individuals in many aspects.
- Explain and elaborate on the components of information and communication technology.
- Understand issues, opportunities and the role of society in ICT and organization.
- Demonstrate knowledge of the fundamentals of computer hardware and software architectures.

Learning Outcome

Upon completion of this subject, students should be able to:

- Apply the concept of Information Communication Technology (ICT) to facilitate the organizations.

- Identify the current ICT trends in industry.
- Help the organization to develop ICT infrastructure that is of high quality and consistent with organizational business goals.

Course content

Chapter	Item	Page
1	Information Communication Technology and You 1.1 The five parts of an information system: people, procedures, software, hardware and data 1.2 Four kinds of computers – microcomputer, minicomputer, mainframe, and supercomputer – and describe hardware devices for input, processing, storage, output and communications 1.3 Computer connectivity, the Internet and the Web	2
2	Application Software 2.1 Common features of most software applications 2.2 Browsers 2.3 Word processors 2.4 Spreadsheets 2.5 Database management systems 2.6 Presentation graphics 2.7 Software suites and integrated software	4
3	System Software 3.1 The three basic functions of any operating system 3.2 The three categories of operating systems 3.3 The purpose of utilities and utility suites 3.4 The five most essential utilities 3.5 Device drivers	2

	3.6 Language translators	
4	System Unit & Input/ Output Devices & Secondary Storage 4.1 How a computer uses binary codes to represent data. 4.2 The major system unit components. 4.3 Types of memory. 4.4 Four principal types of bus lines. 4.5 Four types of ports. 4.6 Latest Input /Output Devices 4.7 Latest Secondary Storage	3
5	Connectivity, the Wireless Revolution and Communications 5.1 Connectivity, the wireless revolution and communications. 5.2 Physical and wireless communications channels. 5.3 Conventional modems, T1, ISDN, DSL, cable modem, and satellite connections. 5.4 Bandwidth, serial versus parallel transmission, direction of data transmission, and protocols. 5.5 Network architecture – configurations and strategies. 5.6 Local area, metropolitan area, and wide area networks.	3
6	The Internet and the World Wide Web 6.1 Internet History 6.2 Concepts of the Internet 6.3 Functions of the Internet 6.4 Hardware and Software of the Internet	2
7	Multimedia 7.1 Definition of Multimedia 7.2 History and Concept of Multimedia 7.3 Multimedia Features 7.4 Types of Media 7.5 Application of Multimedia technology	2

8	Privacy, Security, Ergonomics and the Environment 8.1 Privacy and Issues 8.2 Introduction to Security 8.3 Computer Crime and Measures of Security 8.4 What is Ergonomics? 8.5 Mental and Physical Health 8.6 Basic Green PC 8.7 Personal Responsibility	2
9	Databases 9.1 Database Characteristics 9.2 Features of Database Management Systems 9.3 Evolution of Database Technology 9.4 Architectures of Database Management Systems	2
10	Information Systems (IS) 10.1 History of IS 10.2 Study of IS 10.3 Applications of IS 10.4 Types of IS 10.5 IS Research and Development	2
11	Systems Analysis and Design 11.1 The Systems Development Environment 11.2 The information Systems Development Life Cycle (SDLC). 11.3 Rapid Application Development (RAD), prototyping, Joint Application Development (JAD) and Computer Aided Software Engineering (CASE). 11.4 Agile methodologies and extreme programming. 11.5 Object Oriented Analysis and Design and the Rational Unified Process (RUP).	2
12	Programming Languages	2

	12.1 History of Programming languages 12.2 Why do we need Programming Languages? 12.3 Generations of Programming Languages 12.4 Programming languages categories 12.5 Examples of Programming Languages	
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References:

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4. Brian K. Williams and Stacey Sawyer, Using Information Technology: A Practical Introduction to Computers and Communications, 7th Edition, McGraw-Hill, 2007. ISBN-13 9780072260717.
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