MINOR IN INFORMATION-COMMUNICATION TECHNOLOGY (ICT)

CURRICULUM

The minor comprises 6 courses and is structured into two series of 3 courses of 3 AU each as follows:

IC0101  Internet Fundamentals
IC0102  Web-Based Information Systems
IC0103  E-Commerce Technology
IC0204  Introduction To Software Engineering
IC0205  Database Systems
IC0206  Wireless Networks

The IC01 series comprises of courses aimed at providing students with the basic background in e-business applications, systems, and technologies. The courses in the IC02 series provide students with deeper appreciation of the technologies pertaining to software engineering and supporting systems and networks in ICT. Students generally take the courses in the IC01 series before progressing to take the IC02 courses. Students may select any 5 of the 6 courses to accumulate 15 AUs and qualify for the award of the Minor in Information-Communication Technology.
SYLLABUS

IC0101  INTERNET FUNDAMENTALS

Acad Unit:  3.0
Prerequisite:  Nil
Effective:  2004-2005

OBJECTIVE

This course is targeted towards students from a general background who would like to know more about modern computer networks like the Internet. It intends to provide:

1. A basic understanding of how computer networks like the Internet operate and how the network is used to support the important applications that we see today;
2. An insight into the basics of TCP/IP, the transport and network protocols which underlie the operation of such networks, and the way these are used to provide user applications;
3. A brief exposure to the important network components that are used in today’s networks; and
4. A basic knowledge of network security.

DESIRED OUTCOME

Students attending this course are expected to develop a basic understanding of how computer networks like the Internet operate, how they transport data from one computer to another and how these networks are used to implement the common networked applications (e.g. electronic mail, web browsing, file transfers and e-commerce) that we see today. The focus of the course would be towards making networks and their operation more understandable from a layman’s point of view so that students from all disciplines can develop a better appreciation of the strengths (and even some of the weaknesses) of modern network infrastructures.

OTHER RELEVANT INFORMATION

This course has no pre-requisites. No sophisticated mathematics is needed.

CONTENT

OBJECTIVE

The objective of this course is to provide the foundation knowledge of web-based information systems, the enabling technologies and development techniques.

DESIRED OUTCOME

Through this course, students are expected to:

1. Understand the architecture of web-based information systems;
2. Know the underlying enabling technologies;
3. Acquire the basic development techniques.

OTHER RELEVANT INFORMATION

Nil

CONTENT

OBJECTIVES

The objective of this course is to provide students with basic appreciation and understanding of the underlying technologies of electronic commerce, such as electronic commerce infrastructure, information security technology, electronic payment technology and technology trends.

DESIRED OUTCOMES

Through this course, students are expected to:

1. Understand electronic commerce (e-commerce) models and infrastructure;
2. Appreciate basic information security techniques for conducting secure electronic commerce transactions and related activities;
3. Know basic electronic payment methods;
4. Comprehend common e-commerce applications and be aware of technology trends in e-commerce.

OTHER RELEVANT INFORMATION

This course is intended for undergraduates who wish to work with or understand Infocomm and electronic commerce technologies.

CONTENT

IC0204 INTRODUCTION TO SOFTWARE ENGINEERING

Academic Unit : 3.0
Prerequisite / Co-requisite : Nil
Effective : AY 2005-2006

OBJECTIVES

The objective of this course is to provide students with the foundation knowledge in software engineering.

DESIRED OUTCOMES

Through this course, students are expected to acquire the basic knowledge of both technical and management aspects on software engineering.

OTHER RELEVANT INFORMATION

Students will benefit more if they have some exposure to a programming language.

CONTENT

IC0205 DATABASE SYSTEMS

Acad Unit: 3.0
Prerequisite: Nil
Effective: Academic Year 2005-2006

OBJECTIVE

The objective of the course is to provide a good fundamental understanding of the theories and practices of database systems for various application domains such as business, engineering, and manufacturing. It examines the full spectrum of database management: data modelling, logical and physical database design, query language, database administration, and offers an appreciation of more advanced database technologies such as web databases, and data warehousing.

DESIRED OUTCOME

Upon completion of this course, the students will understand: how a database system is used and managed; how to perform data modeling; how to design the logical and physical structures of a database; and why more complex databases are needed for special applications.

OTHER RELEVANT INFORMATION

There is no pre-requisite for the course.

CONTENT

OBJECTIVE

The objective of this course is to provide an overview and basic understanding of today’s wireless communication networks with emphasis on new generation of digital networks. Network architectures and protocols of various wireless communication networks will be covered.

This course is intended to introduce to students the followings:

1. Basic of wireless communications – fundamental concepts of wireless communications including frequency spectrum, modulation, and error detection, etc.
3. The basics of wireless networks – introduction of wireless local area networks (IEEE 802.11a/b), and various wireless network protocols, e.g., wireless application protocols.

DESIRED OUTCOME

The students will be able to understand the architectures, specifications, and operation of various today’s commonly used wireless communication networks.

OTHER RELEVANT INFORMATION

This course has no pre-requisites. A basic understanding of mathematics, physics and some idea of communication systems would be useful to the understanding of the course. The level of difficulty is moderate.

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