International Advanced Diploma in Computing

Awarded by Informatics Academy and validated by NCC Education (UK)

Programme Objective

The programme aims to

- To provide students with a level of knowledge and skills appropriate to the application of information technology.
- To understand aspects of computer architecture (hardware and software) which affect the design of computer-based systems.
- To ensure that students can describe the personnel issues involved with the design, implementation and operation of computer-based systems.
- To ensure that students are able to identify the activities of systems development and operation in terms of effectiveness and efficiency.
- To create awareness in students on the codes of conduct and good practices of professional bodies as well as the practical and professional implications in their work environment.
- To develop communication skills.
- To cultivate teamwork amongst students.

Course Modules

Code	Module Name
C2001	Systems Analysis & Design
C2002	Software Engineering
C2004	Discrete Mathematics
C2005	Object Oriented Programming in Java
C2006	Project: Systems Development
C2020	Computer Architecture & Data Communication
C2027	Information Management
C2028	Database Management Systems

Entry Requirements

International Diploma in Computing

Minimum 16 years old:

- Minimum 5 'N' Levels or 3 GCE 'O' Levels or equivalent with English (Must do critical thinking and learning skills as enrichment modules) OR
- Minimum 5 'N' Levels or 3 GCE 'O' Levels or equivalent without English (Must do English Communication, then Critical Thinking and Learning Skills as enrichment modules) OR
- 'A' Levels or equivalent conducted in English OR
- 'A' Levels or equivalent conducted in non-English (Must do English Communication)
- Other qualifications deemed suitable by Informatics Academy

Mature Entry:

- Minimum 21 years old with 4 years of secondary education or equivalent
- No exemption will be granted for prior work experience
- Exemptions may be granted for professional certifications attained at the discretion of Informatics Academy

International Advanced Diploma in Computing

- International Diploma in Computing OR
- Other qualifications deemed suitable by Informatics Academy

Programme Duration

International Diploma / International Advanced Diploma
Full Time: minimum 8 months
Part Time: minimum 12 months

Intake

International Diploma

- February / April / June / August / October / December

International Advanced Diploma

- April / August / December

Programme Delivery

- Day / evening classes tought by lecturers with industry-experience

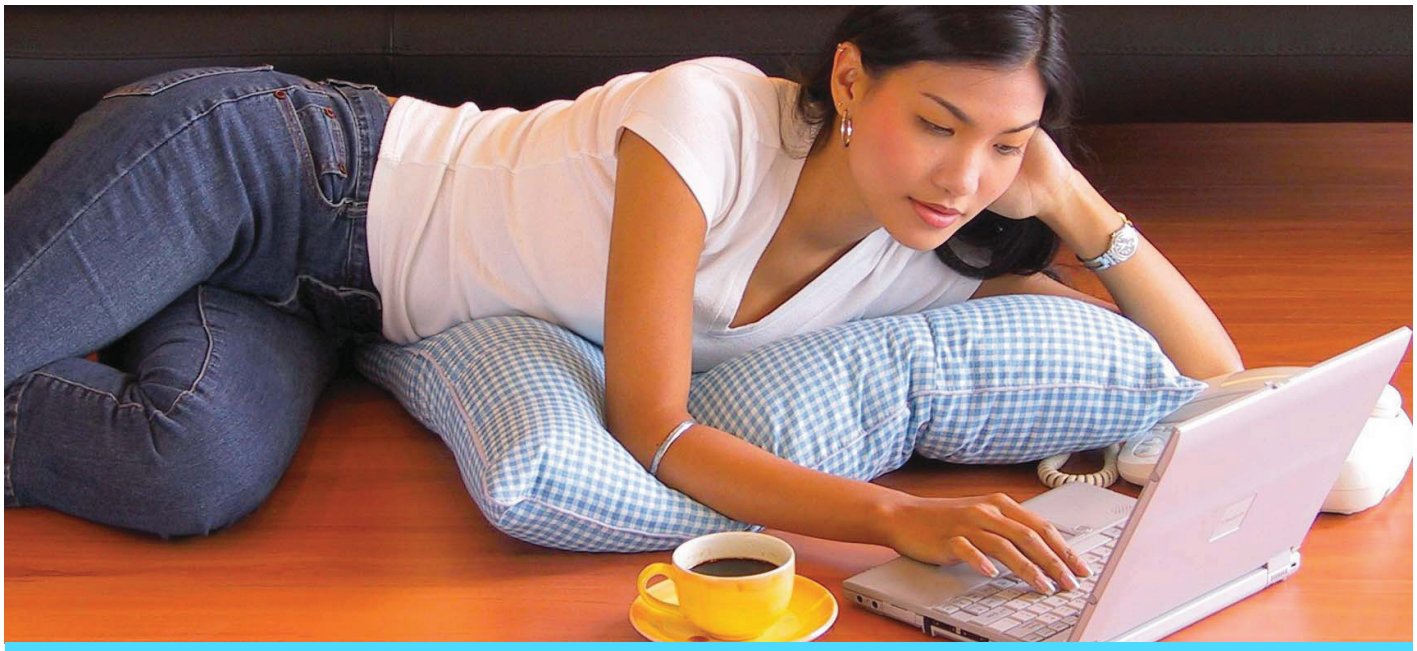
Method of Assessment

- For theory modules, students are assessed based on coursework / projects / examinations.
- For practical modules, students are assessed based on presentation & dissertation / project components.
- Examinations are typically conducted in the months of April, August and December for Term 1, Term 2 and Term 3 respectively.

How to Apply

To apply, applicants must complete and submit the prescribed application forms. The application must be accompanied by the following:

- A one time non-refundable application processing fee.
- One certified true copy of educational qualifications (degree, diploma, GCE 'A' and 'O' level certificates) and transcripts showing details of results obtained.
- 2 photocopy of NRIC or passport
- A copy of CV/Resume



Programme Synopsis:

Enrichment Programme

English Communication

The English Communication module is designed to assist students to improve their English language skills. Our Qualifying English Test results will show us which level of English that student of English the student needs to undertake.

Critical Thinking

This enrichment course introduces the use of critical thinking skills to enhance their academic and non-academic endeavours. Students will develop the ability to reason clearly and critically, and interpretation of information for effective decision-making. Decision- making involves identification of problem and facts, generating the possible courses of action and selecting the best solution. These are essential skills that students should develop not only for academic purposes but more so for professional and personal growth.

Learning Skills

The course aims to develop in the students the essential skills in learning including time management, goal setting, stress management, effective research and study skills, group learning and techniques in passing assessments.

INTERNATIONAL DIPLOMA IN COMPUTING

C1001 Computer and Information Processing

- Describe the characteristics of computer hardware and explain their functions
- Appreciate the social and economic implications of the use of various ranges of computer systems
- Identify the different types of computer networks and data communication standards

C1002 Program Design

- Describe the principles and activities of systems analysis to the programme specification stage.
- Apply current program design methods
- Understand and use different data structures in program
- Use available techniques and tools for testing

C1003 Mathematics for Computing

- Conversion numbers to various bases and perform simple binary arithmetic operations.
- Use algebraic terminology to solve algebraic equations
- Perform simple statistical calculations
- Use Boolean algebra, Venn diagram and logic networks.

C1004 Project – Web Design with HTML, JavaScript and Java Applets

- Overview of the World Wide Web
- HTML
- Security on the Web-Overview
- JavaScript
- Introduction to Java
- Incorporating Java Applets

C1005 Project – 'C' Programming

- Introduction to C
- Forming and Building a C program
- Theory on Selection Structure
- Iteration Structure
- Arrays
- Files Handling

C1006 Computer Networks

- Understand the need for networking and recognize the importance of networking in current computer areas.
- Appreciate the different types of network: peer to peer and client-server.
- Equip students with basic network administration, theoretical knowledge and practical experience

C1022 Introduction to Java

- Build a stand-alone Java application
- Exploit the object-oriented features of Java
- Write Java code that is efficient and robust
- Build a simple Java applet
- Use multithreading techniques
- Create a simple graphical interface

C1025 Structured Query Language (Access 2003)

- Describe the relational aspects of a database management system
- Input and update data from a database
- Writing basic SQL statements
- Writing queries and sub-queries to retrieve data from a database
- Writing single row and multiple row functions

INTERNATIONAL ADVANCED DIPLOMA IN COMPUTING

C2001 Systems Analysis & Design

This unit provides an in-depth study of the various analysis techniques to build a computer based information system. Practical techniques and appropriate documentation of systems analysis will be taught. It also emphasizes the importance of the human aspects of information systems.

- Information modeling
- Fact-finding techniques
- Structured analysis development strategies
- Prototyping
- Structured design tools and techniques
- User Interface
- Designing systems controls
- CASE

C2002 Software Engineering

This unit aims to build a broad-based foundation of the software aspects of computing environments. It also provides an understanding of software engineering approaches.

- Principles of software engineering
- Software life cycle
- Formal methods
- Software Quality Assurance Techniques

C2004 Discrete Mathematics

This unit aims to provide the students with a core of Mathematical terminology and concepts. Students will be required to apply their cognitive skills in logical problem solving and in making deductions.

- Sets and logic
- Combinatorics
- Vectors and matrices
- Relations and functions
- Statistics

C2005 Object Oriented Programming in Java

This unit aims to provide student a strong foundation in Java programming. Student will learn the concept of object-oriented programming, understand the object-oriented features and apply the concept to programming.

- Features of Object Oriented Programming Languages
- Requirement Analysis Methods
- Programming Constructs of Java.
- Classes and Methods
- Polymorphism
- Arrays
- Strings
- Inheritance
- Overriding

C2006 Project: Systems Development

The project aims to develop individual initiative, critical thinking and creative ability through a detailed study of some aspects of computer-based information systems. Participants will have to take part in all stages of analysis, design, programming, testing and implementation. Each participant must have clearly defined roles and tasks throughout the project life.

C2020 Computer Architecture & Data Communication

This unit gives an overview of computer hardware data communication and networking technology. It attempts to inculcate in students the ability to demonstrate an understanding of computer architecture and data communication.

- Characteristics and performance of contemporary computer equipment
- Principles and implementation of instruction codes
- Representation of storage and transmission data
- Concepts of data communication, networking and their applications

C2027 Information Management

This unit provides students with an interesting blend of both information systems management concepts as well as data centre management concepts:

- EDP auditing
- Charge out concepts
- End user computing
- Security

C2028 Database Management Systems

This unit aims to provide the students with a core of Database terminology and concepts. Students will be required to apply their understanding in designing database systems

- Database development strategies
- Database modeling and design
- Database administration
- Structured Query Language(SQL)