

# Advanced Diploma in Computing and Information Technology

## OVERVIEW

The Advanced Diploma aims to provide students with a solid foundation and analytical problem-solving approach and technical knowledge together with a functional management focus in different aspects of computing and information technology. Students will have valuable opportunities to undertake job placement in IT companies. Through practical training, students will gain firsthand knowledge of the industry and develop the skills and experience required in the workplace.

## PROGRAMME OBJECTIVES:

Students are given in understanding of Applied Finance Management in Services, Further Programming Paradigms, Information Retrieval, Web Applications Development, Artificial Intelligence, Computing Networking, Business Law and Software Engineering Project. It helps students acquire knowledge and skills up to professional level, strengthening their understanding of computing and information technology. Industrial attachment is an integral part of the student's educational development of this course. It is providing opportunities for students to gain a real-world understanding of the complexities and demands of the industry and their career prospects. Through a 6-month internship in an organisation, students will gain valuable work experience to enhance their professional prospects further and applying thinking relating to the complexities and unclear problems to develop innovative solutions in the IT and Computing industry.

## ASSESSMENT METHODS:

Combination of Coursework & Examination

## NUMBER OF MODULES:

9

## PROGRAMME OUTCOMES:

Classroom Training Hours: 30 Hours Per Module

## TOTAL CONTACT HOURS

240

## MODULE SYNOPSIS

### ADHTM501 Applied Financial Management in Services

The module is to equip students with a good and meaningful understanding of finance and accounting in the services industry. Students will acquire the accounting and finance skills needed to achieve sustainable profits for various stakeholders. This module will cover management accounting that includes costing, budgeting and the fundamental principles of corporate finance and investment.

## PROGRAMME OUTCOMES:

Upon completion of the programme, the learners will be able to:

- understand, design and exploit computation and computer technology;
- develop fluency in programming and system development skills
- develop analytic, problem solving and interpersonal skills preparing them for a lifetime of continuing professional development
- appreciate innovation and emerging technologies in theoretical and applied computing;
- develop the skills required to exploit business information systems.
- demonstrate interpersonal, self-study, research and presentation skills through the course
- have adequate work skills and experience through practical training for their careers or further studies in computing and information technology

## KEY FEATURES:

The course has been developed to focus on:

- develop analytic, problem solving and interpersonal skills preparing them for a lifetime of continuing professional development
- develop a range of transferable skills in such areas as problem-solving, communication, project management, working individually and in teams as well as self-management and the ability to gather, synthesise, evaluate and reflect on information from relevant sources for excelling in a supervisory position in the computing and information technology world
- a unique combination of computing, business and technical knowledge, enabling the student to work as a business analyst or consultant.
- prepare students for a range of computing-related careers, either nationally or internationally.

## AWARDING BODIES:

Global School of Technology and Management

### ADCIT503 Web Applications Design and Development

The module focuses on the latest technologies for building interactive web applications. It provides the knowledge and skills necessary to create dynamic web applications.

### ADCIT507 Software Engineering Project

Software Engineering Project aims to focus on software development lifecycle by designing and delivering a software system in a team while providing sufficient evidence of robust processes to demonstrate compliance with the relevant Government and industry standards.

### **ADCIT501 Further Programming Paradigms**

The module focusses on the fundamental concepts of three different programming paradigms, including theoretical and practical aspects of building programs using these paradigms. The module will cover the Object Orientated Design, Functional and Logic Programming

### **ADCIT502 Information Retrieval**

The module provides an overview of information retrieval, including capturing, representing, storing, organising, and retrieving unstructured or loosely structured information. The information retrievals include almost all type of unstructured or semi-structured data including the multimedia data (principally text, but also image, video and audio) stored for, presented on, and consumed from, the web amongst other sources. Students need to learn the fundamental techniques and strategies of information retrieval (e.g. Boolean retrieval model, Vector space model, Latent semantic indexing, XML and Image retrieval model) used in a variety of online applications such as web-search engines, document matching systems, and business storage and analytics.

### **ADCIT504 Artificial Intelligence**

Artificial intelligence (AI) is a broad and general term that refers to any computer software that engages in human-like activities, including learning, planning and problem-solving. It had become one of the most exciting and fast-moving fields in computer science and a huge impact on our lives. Many AI techniques have become mature in the market such as KIBO, Machine Learning, Robot Cleaning Machine, Home Robot etc.

It is an important module for the students to gain an understanding of the basic principles and methods of Artificial Intelligence (AI) and provides the basis for understanding and later choosing the correct tools for building such systems. Applications that motivate the development of Artificial Intelligence technology include intelligent robots, automated navigation for autonomous vehicles, object recognition and tracking, medical diagnosis, language communications and many others. Any application that requires human-like intelligence is an application for AI.

### **ADIA508 Industry Attachment**

Industrial Attachment is an important aspect and a component of a students' development. As part of the course curriculum, students are expected to undertake a 24 weeks/ 6-month industrial attachment in the related industries. Students will take an internship programme with an organisation as about their interest or area of specialisation (e.g. Business Development Trainee, Management Trainer etc.).

### **ADCIT506 Computing Networking**

This course aims to introduce the fundamental concepts of all the computer networking layering levels with an emphasis on the routing algorithms and implementation of network sensing. Examples will be drawn liberally from the Internet to illustrate abstract concepts so that students can understand how a computer network works.

Upon completion of the module, students will be able to identify and describe how network protocols are layered and operate together to perform common communication functions and apply the concepts of layered architecture in assessing the placement of network devices, protocols and services. Additionally, students able to explain the working of error control and medium access control protocols in the data link layer and apply them to both wired and wireless local area networks.

### **ADCIT505 E-Business and Information Technology Law**

The module focuses on the law relating to e-business and information technology law which will help the students to have a good understanding of the latest framework and development within this burgeoning of law. There are more, and more companies and organisations are embracing information technology to add value to their business and remain competitive. In the e-business environment, the existing business law is being applied in a new setting to address specific issues that online business creates. It is crucial for students to understand the interface between business, ethics and technology law environment and the effect of new technological developments on the law. Real-life examples and case studies motivate the students and put theory in perspective to provide students with the legal context of today's businesses and technological developments.

### **ADIA509 Industry Project**

The industrial project applies only when a student is unable to secure an industrial attachment with any organisation. In the absence of an industrial attachment, the student has to complete an individual project lasting for 2 months. The industrial project (5000 words) must be relevant to the computing and information technologies and approved by the school. Students have a maximum of 2 months to complete the project after approval. The Industrial Project provides an opportunity for students to be fully involved in the analysis, design and development of an information technology service or product within the selection of the student's choice of industry.