

## **4.1 CD304 - BSc (Hons) Information Technology**

*(Diploma to Degree Top-up – 1 year Full Time)*

### 1. **OBJECTIVES**

The Programme is geared towards producing computer professionals, with a thorough understanding of various components of Information Technology. The programme ensures that our graduates integrate easily into the job market and keep up with emerging technologies.

The programme is designed to upgrade the theoretical concepts as well as application methodologies of the students with a Diploma in Information Technology. With substantial focus on the practical and hands-on component, the programme intends to ensure “learning by doing“. The practical modules and hands-on exercises will reinforce the classroom learning experience. On completing the requirements of the degree programme, students will have acquired adequate skills for the design and development of efficient IT solutions.

### 2. **GENERAL MINIMUM ENTRY REQUIREMENTS**

In accordance with the University’s General Entry Requirements for admission to undergraduate programmes.

### 3. **PROGRAMME REQUIREMENTS**

- (i) At least 2 G.C.E. ‘A’ Level Passes, *and*
- (ii) A Diploma in Information Technology or an equivalent qualification from a recognized institution acceptable to the University of Mauritius.

### 4. **GENERAL AND PROGRAMME REQUIREMENTS - SPECIAL CASES**

The following may be deemed to have satisfied the general and programme requirements for admission:

- (i) Applicants who do not satisfy any of the requirements as per Sections 2 and 3 above but who submit satisfactory evidence of having passed examinations which are deemed by the Senate to be equivalent to any of those listed.
- (ii) Applicants who do not satisfy any of the requirements as per Sections 2 and 3 above but who in the opinion of Senate submit satisfactory evidence of the capacity and attainments requisite to enable them to pursue the programme proposed.
- (iii) Applicants who hold a full practising professional qualification obtained by examination.

5. **PROGRAMME DURATION**

	Normal	Maximum
Degree	1 year	2 years
(Full Time)	( 2 semesters )	(4 semesters )

**SEMESTER**

15 weeks (excluding examination period)

6. **MINIMUM CREDITS REQUIRED FOR AWARD OF:**

<b>MODULES</b>	<b>CREDITS</b>
Core	33
Project(Compulsory)	9
<b>Total</b>	<b>42</b>

**CREDITS PER SEMESTER**

Maximum 24 credits, Minimum 9 credits

7. **ASSESSMENT**

Each module will carry 100 marks and will be assessed as follows (unless otherwise specified):

- Continuous assessment carrying a range of 20% to 30% of total marks except for a programme where the structure makes for other specific provision(s). Continuous assessment may be based on laboratory work and/or assignments and would include at least 1 class test.
- Written examination of 2-hour duration carrying a range of over 70% to 80%.
- An overall total of 40% for combined continuous assessment and written examination components would be required to pass the module, without minimum thresholds with the individual continuous assessment and written examination.

8. **MODE OF DELIVERY**

Modules of the programme will normally consist of 30 contact hours as formal lectures and 15 hours for projects, case studies, firm visits, interviews, site tours etc. Lecturers will be responsible to monitor the progress of students during those 15 hours to ensure that students satisfactorily meet the objectives and experiences set. Also, a report has to be submitted to lecturers for the latter to provide feedback on the work done. The report may be used for continuous assessment.

9. **TERMINATION OF REGISTRATION**

A person shall cease to be a registered student of the University if his/her CPA remains below 40% for two consecutive registered semesters. Any student whose registration has been terminated should not be admitted on:

- a) The same programme until a period of two years after termination of registration.
- b) On a new programme until a period of one year after termination of registration.

10. **PROGRAMME STRUCTURE**

**LEVEL 3**

**SEMESTER 1**

<b>CODE</b>	<b>MODULE</b>	<b>Hrs/Wk</b>		<b>CREDITS</b>
		<b>L</b>	<b>P</b>	
MIBS 44411(5)	Object Oriented Programming	2	2	3
MIBS 44611(5)	ASP.Net Programming	2	2	3
MIBS 44711(5)	Java Programming	2	2	3
MIBS 41711(5)	Data Transmissions & Networking Technologies	3	0	3
MIBS 43111(5)	Management Information Systems	3	0	3
MIBS 45511(5)	Principles of Software Project Management	3	0	3
MIBS 47211(5)	Final Year Degree Project*	-	3	-

\* CREDITS TO BE EARNED AT THE END OF SEMESTER 2

**SEMESTER 2**

<b>CODE</b>	<b>MODULE</b>	<b>Hrs/Wk</b>		<b>CREDITS</b>
		<b>L</b>	<b>P</b>	
MIBS 54112(5)	Cyber Laws	3	0	3
MIBS 44812(5)	Network Programming	2	2	3
MIBS 44912(5)	Software Testing	2	2	3
MIBS 43712(5)	Information Systems Security	3	0	3
MIBS 40412(5)	Current Trends in IT & Computing	3	0	3
MIBS 47211(5)	Final Year Degree Project	-	6	9

## 11. **OUTLINE SYLLABUS**

### **SEMESTER 1**

#### **MIBS 44411(5) OBJECT ORIENTED PROGRAMMING**

Fundamentals of OO Programming, Classes and Objects, Attributes and Methods, Interfaces, Abstractions, Encapsulation, Inheritance, Operator and Function Overloading, Polymorphism, Programming in C++; Variables and Constants, Expressions and Statements, Classes, Derived Classes, Virtual Functions Templates, Exception Handling, Streams, Introduction to Java programming.

#### **MIBS 44611(5) ASP.NET PROGRAMMING**

ASP.NET Web application elements and process mode, Changes between ASP and ASP.NET, Creating ASP.NET Web application & its user interface, Implementing event handlers by using code-behind files, Validation controls, Creating and using user controls, How ASP.NET Web forms are processed, Creating an application and a session state, XML Web services and their functions, creating XML Web services, Planning and implementing migration of ASP Web pages to ASP.NET.

#### **MIBS 44711(5) JAVA PROGRAMMING**

Java fundamentals, Data types and variables, Operators, Control statements, Arrays, Classes and objects, Abstraction, Inheritance and polymorphism, Interface and Package, Exception handling, Files and streams, Threads, Java Library, Java Applets.

#### **MIBS 41711(5) DATA TRANSMISSION & NETWORKING TECHNOLOGIES**

Data Transmission: Data Types, Transmission Media, Multiplexing and Multiple Access; Networks: Protocol and Components, LAN, WAN, WPAN, Networking Technologies: Wired- PSTN, ISDN, DSL, ATM, Wireless- WLAN, GSM, CDMA, GPRS, WAP, Bluetooth, ZigBee, UWB

## **MIBS 43111(5) MANAGEMENT INFORMATION SYSTEMS**

Fundamentals of Information systems; Information systems for business operations; Decision Support systems; Information systems for strategic advantage; Managing Information technology; Planning and implementing change; Business process reengineering; Executive Information systems.

## **MIBS 45511(5) PRINCIPLES OF SOFTWARE PROJECT MANAGEMENT**

Strategy; Scope; Planning; Control; scheduling and tracking; Quality issues; Testing; People Management; Costing; Implementation; Documentation; post-implementation issues.

## **SEMESTER 2**

## **MIBS 54112(5) CYBER LAWS**

Laws related to Information and Communication Technologies, Intellectual Property, Regulatory Framework, Copyrights and Patents; Privacy; Cyber crimes and computer misuse.

## **MIBS 44812(5) NETWORK PROGRAMMING**

Client-server model; Internet Protocol; IP Name and Address conventions; Virtual Networks; Transport layer; Basic TCP usage; Socket programming (using C and Java); Raw Sockets; Datalink Access; Routing Sockets; HTTP, MIME, and the URL; Broadcasting and Multicasting.

## **MIBS 44912(5) SOFTWARE TESTING**

Software testing background, Software development process, Reliabilities of software testing, Testing fundamentals, Developing a test plan, Testing methods, Test cases, Requirement phase testing, Design phase testing, Validation, Software testing tools, Software quality assurance, Test security.

## **MIBS 43712(5) INFORMATION SYSTEMS SECURITY**

Basic Concepts such as Authentication; Cryptographic Sealing and Certification; Security Planning; Analysis of Security Threats; Security Controls; Design Issues of Security Systems; Implementation of Security Systems.

### **MIBS 40412(5) CURRENT TRENDS IN IT & COMPUTING**

An overview of the new trends and technologies currently in use: Emerging Mobile and Wireless Technologies, Ubiquitous Computing, Embedded Systems, Bioinformatics, Intelligent Systems and Artificial Life, Virtual Reality, Entertainment Systems and Computer Games, Semantic Web, Parallel Computing and High Performance Computing, Computer Security, Computer Vision and Robots Sensing, Tangible User Interactions.

### **MIBS 47211(5) FINAL YEAR DEGREE PROJECT**

The assessment of final year project will be based on the implementation of a computerised solution to a real-life or research-oriented problem and the submission of a report. The length of the report should be in the range of 10,000–12,000 words.