4.1 CD 301 - BSc (Hons) Information Technology

(Diploma to Degree Upgrade – 1.5 Years Part Time)

1. OBJECTIVES

This 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 level 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

At least 2 G.C.E. 'A' Level passes, and
A Diploma in IT or related disciplines acceptable to the University of Mauritius.

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.

Mature Students

'Mature Students' shall be those candidates having full School Certificate, and

(i) who do not satisfy the General Entry Requirement and who are (preferably) at least 25 years of age and who have at least 5 years relevant work experience, or
(ii) who satisfy the General Entry Requirement and who are (preferably) at least 25 years of age, but are lower in terms of their computer list ranking at the UoM; and who have at least 5 years relevant work experience.

4. PROGRAMME DURATION

	Normal	Maximum
Degree	11/2 years P/T (3 semesters)	3 years P/T (6 semesters)

SEMESTER: 15 weeks (Excluding Examination Period)

5. CREDITS PER SEMESTER

Maximum 24 credits, Minimum 9 credits

6. MINIMUM CREDITS REQUIRED FOR AWARD OF DEGREE:

MODULES	CREDITS
Core	42
Project(Compulsory)	9
Total	**51**

7. ASSESSMENT

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

i) 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.

ii) Written examination of 2-hour duration carrying a range of 70% to 80%.

iii) 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

CODE	MODULE	Hrs/Wk L	Hrs/Wk P	CREDITS
MIBS 42511(3)	DATABASE TECHNOLOGIES	2	2	3
MIBS 43611(3)	OPERATING SYSTEMS	3	0	3
MIBS 44411(5)	OBJECT ORIENTED PROGRAMMING	2	2	3
MIBS 44511(3)	VB.NET PROGRAMMING	2	2	3
MIBS 41711(5)	DATA TRANSMISSIONS & NETWORKING TECHNOLOGIES	3	0	3

SEMESTER 2

CODE	MODULE	Hrs/Wk L	Hrs/Wk P	CREDITS
MIBS 45112(5)	SOFTWARE ENGINEERING	3	0	3
MIBS 44611(5)	ASP.NET PROGRAMMING	2	2	3
MIBS 44711(5)	JAVA PROGRAMMING	2	2	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 3

SEMESTER 3

CODE	MODULE	Hrs/Wk L	Hrs/Wk P	CREDITS
MIBS 44812(5)	NETWORK PROGRAMMING	2	2	3
MIBS 43712(5)	INFORMATION SYSTEMS SECURITY	3	0	3
MIBS 54112(5)	CYBER LAWS	3	0	3

MIBS 40412(5)	CURRENT TRENDS IN IT & COMPUTING	3	0	3
MIBS 47211(5)	FINALYEAR DEGREE PROJECT		6	9

10. OUTLINE SYLLABUS

SEMESTER 1

MIBS 42511(5) DATABASE TECHNOLOGIES

Database Concepts, Client/Server Computing, RDBMS Technologies, Codd's Rules, ER Diagrams, Data Flow Diagrams, Concurrency control, Overview of Oracle, SQL*Plus, DDL,DML and DCL, Tables, Indexes and Views, Clusters, sequences and Snapshots, PL/SQL, Cursors, Stored Procedures, Triggers.

MIBS 43611(5) OPERATING SYSTEMS

Introduction to Operating System, Processes, Memory Management, File Systems. Network and Distributed OS, General OS Architecture, Scheduling and Synchronization, Virtual Memory and Paging, OS Security, Common OS, Windows, Linux. Preparation for Certified Linux Administrator.

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 44511(5) VB.NET PROGRAMMING

Introduction to the visual programming paradigm and OOP paradigm; Introduction to Visual Programming Language and Environment – The .NET Framework; The Visual Basic.NET Language Fundamentals–Statements, functions, operators, the IF statement and CASE, Looping and Counting, The controls, the Menu Design, MDI applications, MDI Child and MDI Parent forms, Modules and class, Error-Handling, Debugging, Sequential Files and Filestream class, Databases concepts, ADO.NET Architecture, Data Adaptor, Data Reader, Connection, Command, Dataset Concepts, Binding Context objects, Database Application with ADO.NET using Wizard and Programmatically, Database Queries with SQL, Database Reports Development

MIBS 41711(5) DATA TRANSMISSION AND 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

SEMESTER 2

MIBS 45112(5) SOFTWARE ENGINEERING

Software Terminology, Software process; Software requirements and specification; Process Models; Software Architectures; Object Oriented System Design; Reliability; Software metrics; IEEE Standards for Software Engineering

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 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.

MIBS 47211(5) FINAL YEAR DEGREE PROJECT

SEMESTER 3

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 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 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 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.