BSc (Hons) Information Technology- CD 301
(Diploma to Degree Upgrade – 1.5 Years Part Time)

1. Context and 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 abreast 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. Learning Outcomes

Students are expected to:

a) Develop IT products and services that are relevant to everyday life.

b) Demonstrate knowledge and understanding of essential facts, concepts, principles and theories relating to computing and computer applications.

c) Deploy appropriate theory, practices, tools and strategy to analyse, specify, design, implement and evaluate a computer-based solution to a given problem.

d) Know how to deal with general issues relating to the management of Information Technology (such as ethical, legal and security of information).

e) Apply the principles and theory of computing to the requirements, design and development of systems with appropriate understanding of trade-offs.

f) Critically evaluate and test systems to ensure the system meets the criteria for its use and future development.

g) Evaluate systems in terms of general quality attributes and possible trade-offs presented within a given problem.

h) Deploy effectively the tools for the construction and documentation of computer applications.

i) Learn independently, be self-aware and self-manage their time and workload.

j) Communicate effectively (including verbal, written, giving and receiving feedback, presenting ideas to an audience).

k) Apply critical thinking to problem solving.

l) Analyse data in multiple forms and justify the appropriate use of technology.

m) Work effectively with others and exhibit social responsibility.

3. Teaching and Learning Methods

The Programme consists of a combination of teaching, self -study and other learning activities which altogether promote independent learning, critical thinking and above all nurtures student-centric learning across both semester and yearly modules. Teaching methods may include face to face lectures, online delivery, tutorials or practical sessions. Other learning activities can be wide-ranging and may include, amongst others, assignments, class tests, group work, presentations, guest lectures and fieldwork.

A typical semester module will carry 6 LCCS Credits which represent 180 notional learning hours broken down as follows: 30 hours of teaching, 60 hours of self-study and 90 hours of other learning activities.

4. Entry Requirements

- ***General Requirements***

  In accordance with General Entry Requirements for admission to the University for Undergraduate Degrees.

- ***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

5. Programme Duration

	Normal	Maximum
Degree	1 1/2 years P/T (3 semesters)	3 years P/T (6 semesters)

6. Minimum LCCS Credits Required:

(i)Degree Award*

Core & Elective Structure	**LCCS Credits**
Core Modules	84
Project(Compulsory)	18
TOTAL	**102**

*For the degree award all core modules prescribed by the department must be completed.

(ii) Completion of each year of the programme

Core&Electives Structure	LCCS Credits to complete Year 1	LCCS Credits to complete Year 2
CORE MODULES	60	24
Project(Compulsory)		18
TOTAL	**60**	**42**

LCCS Credits per Year: Maximum 96 LCCS Credits, Minimum 36 LCCS credits subject to Section 5.

7. Assessment and Deadlines

Each module will be assessed over 100 marks (i.e. expressed as %) with details as follows (unless otherwise specified) :

Each module will carry 100 marks and will be assessed as follows (unless otherwise specified):
Assessment will be based on a written examination of 2-hour (for a semester module) or 3-hour (for a yearly module) duration and continuous assessment carrying a range of 40% to 50% of total marks.

For all modules taught in semester 1, there will be a compulsory class test during the semester unless stated otherwise in the Programme Structure.

For a student to pass a module, an overall total of 40% for combined continuous assessment and written examination components would be required without minimum thresholds within the individual continuous assessment and written examination.

The assessment of semester modules will consist of continuous assessment and an examination of a 2 hours duration at the end of the semester in which the module is run.

Submission Deadline for dissertation:

Final copy: Not later than the last working day (excluding Saturdays, Sundays and Public Holidays) of March of the academic year by **4.00 p.m. at latest.**

In addition a soft copy of the dissertation (main body i.e. Introduction up to the Conclusion or last chapter) should be uploaded on the Turnitin Platform, as a single PDF file in the appropriate class/ assignment (final dissertation) provided by the Project/ Dissertation Supervisor*** by 3.00 p.m. at latest on the last day of submission deadline of the dissertation**.

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.

8. List of Modules - BSc (Hons) Information Technology (Diploma to Degree Upgrade)

CORE MODULES					
CODE	**MODULE NAME**	**Contact Hours**	**Self - Study Hours**	**Other Learning Hrs**	**LCCS CREDITS**
MIBS 42511(5)	Database Technologies	30	60	90	6
MIBS 44711(5)	Java Programming	30	60	90	6
MIBS 44411(5)	Object Oriented Programming	30	60	90	6
MIBS 42211(5)	Web Technologies	30	60	90	6
MIBS41711(5)	Data Transmissions & Networking Technologies	30	60	90	6
MIBS 45112(5)	Software Engineering	30	60	90	6
MIBS 44611(5)	Asp.Net Programming	30	60	90	6
MIBS 45711(5)	Mobile COMPUTING	30	60	90	6
MIBS 43111(5)	Management Information Systems	30	60	90	6
MIBS 45511(5)	Principles Of Software Project Management	30	60	90	6
MIBS 44812(5)	Network Programming	30	60	90	6
MIBS 43712(5)	Information Systems Security	30	60	90	6
MIBS 45822(5)	Cloud Computing	30	60	90	6
MIBS 40412(5)	Current Trends In It & Computing	30	60	90	6
MIBS 47211(5)	Final Year Degree Project	N/A			18

9. Programme Plan - BSc (Hons) Information Technology (Diploma to Degree Upgrade)

LEVEL 3

SEMESTER 1

CODE	MODULE	Hrs/Wk L/T/P	Contact Hours	LCCS Credits
MIBS 42511(5)	Database Technologies	2+1	30	6
MIBS 44711(5)	Java Programming	2+1	30	6
MIBS 44411(5)	Object Oriented Programming	2+1	30	6
MIBS 42211(5)	Web Technologies	2+1	30	6
MIBS 41711(5)	Data Transmissions & Networking Technologies	2+1	30	6

SEMESTER 2

CODE	MODULE	Hrs/Wk L/T/P	Contact Hours	LCCS Credits
MIBS 45112(5)	Software Engineering	2+1	30	6
MIBS 44611(5)	Asp.Net Programming	2+1	30	6
MIBS 45712(5)	Mobile Computing	2+1	30	6
MIBS 43111(5)	Management Information Systems	2+1	30	6
MIBS 45511(5)	Principles of Software Project Management	2+1	30	6
MIBS 47211(5)	Final Year Degree Project * - Dissertation	N/A	-	-

*LCCS Credits to be earned at the end of Semester 3.

SEMESTER 3

CODE	MODULE	HRS/WK L/T/P	CONTACT HOURS	CREDITS
MIBS 44812(5)	Network Programming	2+1	30	6
MIBS 43712(5)	Information Systems Security	2+1	30	6
MIBS 45822(5)	Cloud Computing	2+1	30	6
MIBS 40412(5)	Current Trends in It & Computing	2+1	30	6
MIBS 47211(5)	Final Year Degree Project * - Dissertation	N/A	-	18

Note 1: It is compulsory for students to complete a dissertation. This dissertation should start in Year 3 semester 2, carrying 18 LCCS credits.

Total Number of Core Yearly Modules: 0 (12 LCCS Credits per module)
Total Number of Core Semester Modules: 14 (6 LCCS Credits per module)
Total Number of Elective Semester Modules: 0 (6 LCCS credits per module)

As follows:

	CORE		ELECTIVES	
	Yearly	**Semester**	**Yearly**	**Semester**
Year 3 Semester 1		5	-	-
Year 3 Semester 2		5	-	-
Year 3 Semester 3		4	-	-
TOTAL	**0**	**14**	-	-

Note: Electives are subject to: (i) availability of resources, and (ii) minimum critical mass of students for the elective.

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 44711(5) JAVA PROGRAMMING

Java fundamentals, Data types and variables, Operators, Control statements, Arrays, Classes and objects, Interface and Package, Exception handling, Files and streams, Java Library, Threads/Multithreading, Database Connectivity.

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, OO Methodologies, Creation of Java Deployment Packages, Java Design Patterns, Graphical User Interface; Pre-defined Classes and Packages, JUnit Testing.

MIBS 42211(5) WEB TECHNOLOGIES

Internet protocols, Web servers, Introduction to Web Programming: HTML (tag, layout, forms); DHTML; CSS; VBScript; JavaScript; Introduction to server side Programming: PHP; Mobile Site Concepts.

MIBS 41711(5) DATA TRANSMISSION AND NETWORKING TECHNOLOGIES

Data Transmission: Transmission Media, Access Methods; Networks: Models (OSI and TCP/IP), Protocols, Network Devices, IP Addressing and Sub-netting, Routing, Wireless Networking, Pervasive Network, Sensor Networks.

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. ASP.NET MVC and ASP.NET API.

MIBS 45711(5) MOBILE COMPUTING

Introduction to Mobile Phones, Types and Capabilities of Mobile Phones, Mobile Phone GUI Design, Mobile Phone Events, Multimedia over Mobile Phone, Game Programming on Mobile Phones, Game AI, Bluetooth Programming, Wireless Application Protocol, 3G Programming, Difference in Development Environments and APIs.

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, Business Intelligence and Big Data.

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, Managing Agile Software Projects.

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 Java); Raw Sockets; Data-Link 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, Business continuity and disaster recovery planning, and information security governance and risk management, Laws related to Information and Communication Technologies, Intellectual Property, Regulatory Framework, Copyrights and Patents; Privacy; Cyber-crimes and computer misuse.

MIBS 45822(5) CLOUD COMPUTING

Trends of Computing, Introduction to Distributed Computing, Data-Center-based Services to Provide New Classes of Applications, Cloud Computing Fundamentals, Cloud Computing Technologies and Applications, Cloud Types and Services, Cloud Computing Architectures, Virtualization and Resource Management.

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, IoT, Big Data, Data Mining.

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 8,000–12,000 words.