



UNIVERSITY
of
TECHNOLOGY,
MAURITIUS

School of Innovative Technologies and Engineering
Department of Business Informatics and Software Engineering

BSc (Hons) in Computer Applications (Top Up)

PROGRAMME DOCUMENT

Version 4.4
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University of Technology, Mauritius
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BSc (Hons) in Computer Applications

A. PROGRAMME INFORMATION

Information Technology training is ideal for someone interested in pursuing a career in the fast paced world of computers. Information Technology is one of the fastest growing career opportunities today. These skills are in high demand in all industries, not only the technology sectors. This course is meant to cater for diploma holders in Information Technology or any IT related course to upgrade their diploma to a degree level.

The course is conducted in 2 semesters Full-Time mode or 3 semesters Part-Time mode, during which the students are exposed to various areas of Computer Applications including the latest development keeping in pace with the industry.

The curriculum also includes various live projects, seminars to ensure well-rounded moulding of students into IT professionals. BCA course introduces students to the practical aspects of software development keeping in mind the needs and requirements of the clients, thereby these graduates have ample scope in the customer support department in making the software more viable and easier for the client to use.

B. PROGRAMME AIMS & OBJECTIVES

Pursuing information technology training and earning an information technology degree can be an excellent move for someone currently working in the technology field as this will improve his professional skills and also make them more marketable for senior-level positions. Possible careers include: systems administrator, network administrator, programmer or web application developer amongst others.

PART I – REGULATIONS

C. GENERAL ENTRY REQUIREMENTS

As per UTM'S Admission Regulations, and 'Admission to Programmes of Study at First Degree Level' or APL / APEL requirements.

D. PROGRAMME ENTRY REQUIREMENTS

A Diploma in Information Technology or a Diploma in any relevant IT discipline from a recognized institution and as approved by the Selection Committee.

E. PROGRAMME MODE AND DURATION

Full Time: 1 year [2 semester]
Part Time: 1½ years [3 semesters]

F. TEACHING AND LEARNING STRATEGIES

- Lectures, Tutorials and Practical Laboratory Sessions;
- Class Tests and Assignments;
- Structured Discussions and Self-Directed Study;
- Workshops and Seminars;
- Case Study of real world problems.

G. STUDENT SUPPORT AND GUIDANCE

Each cohort of the programme is allocated a Programme Coordinator who acts as a liaison between the students and school management and provides support for academic management of the programme.

H. ATTENDANCE REQUIREMENTS

As per UTM's Regulations and Policy.

I. CREDIT SYSTEM

1 module = 3 or 4 credits
System Development Project = 9 credits.

J. STUDENT PROGRESS AND ASSESSMENT

For the award of an honours degree, all modules must be passed overall with passes in the examinations, coursework and other forms of assessment. To clear a module, students must secure at least 40% overall.

The programme is delivered mainly through lectures, tutorials, and practical laboratory sessions. Each module carries 100 marks and unless otherwise specified will be assessed as follows:

- Written and/or practical examination, and continuous assessment carrying up to 50% of total marks.
- Continuous assessment can be based on a combination of assignments, workshops, practical and class tests.
- Modules which are evaluated on continuous assessment only (100% coursework) must consist of a **minimum of three assessments, inclusive of one class test**. The following list of modules are evaluated by continuous assessment only: Mobile Application Development and Web-based Information Systems.
- The system development project will carry 300 marks (9 credits)

Module grading structure:

Grade	Marks x (%)
A	$70 \leq x \leq 100$
B	$60 \leq x < 70$
C	$50 \leq x < 60$
D	$40 \leq x < 50$
F	$x < 40$
A-D	Pass
F	Fail

K. EVALUATION OF PERFORMANCE

The % mark at Level 3 contribute 100% weighting towards the degree classification.

L. AWARD CLASSIFICATION

Overall weighted mark y (%)

$$70 \leq y \leq 100$$

$$60 \leq y < 70$$

$$50 \leq y < 60$$

$$45 \leq y < 50$$

$$40 \leq y < 45$$

$$y < 40$$

Classification

1st Class Honours

2nd Class 1st Division Honours

2nd Class 2nd Division Honours

3rd Class Honours

Pass Degree

No Award

M. PROGRAMME ORGANISATION AND MANAGEMENT

Programme Director: Mr. P. Kanaksabee

Contact Details:

- Room: G 2.12
- Telephone Number: (230) 207.52.50 (Ext. 155)
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PART II - Programme Structure

N. **BSc (Hons) in Computer Applications – FULL TIME** (*Version 4.4*)

YEAR 3 (Level 3)							
<i>Semester 1</i>				<i>Semester 2</i>			
Code	Module	Hrs/Wk L + T/P	Credits	Code	Module	Hrs/Wk L + T/ P	Credits
SDT2111C	Software Design Techniques and Implementation	2+2	4	SDT3104C	Enterprise Software Development	2+2	4
DBT2103C	Advanced Database Management Systems	2+2	4	CAN3102C	Communication & Networking Design & Management	2+2	4
WAT3115C	Web-Based Information Systems	2+2	4	MCT2104C	Mobile Application Development	2+2	4
SECU2101C	Security Concepts	2+1	3				
PROJ3105C	System Development Project						9

O. BSc (Hons) in Computer Applications – PART TIME (Version 4.4)

YEAR 3 (Level 3)							
Semester 1				Semester 2			
Code	Module Title	Hrs/Wk L + T/P	Credits	Code	Module Title	Hrs/Wk L + T/ P	Credits
SDT2111C	Software Design Techniques and Implementation	2+2	4	WAT3115C	Web-Based Information Systems	2+2	4
DBT2103C	Advanced Database Management Systems	2+2	4	SDT3104C	Enterprise Software Development	2+2	4
SECU2101C	Security Concepts	2+1	3	CAN3102C	Communication & Network Design & Management	2+2	4
				PROJ3105C	System Development Project		

YEAR 3 (Level 3)			
Semester 3			
Code	Module Title	Hrs/Wk L + T/P	Credits
MCT2104C	Mobile Application Development	2+2	4
PROJ3105C	System Development Project		9

PART III

Module Outline

SDT2111C: Software Design Techniques and Implementation

Software Project Management, Software Process Technology, Principles of Software Requirements Analysis, Modeling and Design, Methods of Systems Analysis, Software Design Principles, Software Testing Object Oriented Software Engineering, Managing an Object Oriented Software Project, Analysis of Object Oriented Systems, Components of Object Oriented Analysis & Design, Object Relationship Model, Object Behavioral Model, Design of Object Oriented System, Object Oriented Programming, Testing of Object Oriented Systems, Reusability, CASE environment & tools.

DBT2103C: Advanced Database Management Systems

Security; Recovery; Concurrency; Query Optimization; Distributed Databases; Object Oriented Databases; Business Intelligence; (The Practical component includes Oracle 9i Forms Developer, Oracle 9i Report Builder and PL/SQL using SQL* Plus).

WAT3115C: Web-Based Information Systems

Overview of .NET framework, Comparing relationship with XML and databases and how this technology can be consumed in computerised information systems, XML, DTD, XSL, DOM. Validations, Authentications, ADO.NET: setting up of an online database on a server; rendering database for display to the client through dynamic scripting.

SECU2101C: Security Concepts

Survey of all aspects of security of ICT systems: ~Vulnerabilities, threats, and popular attacks such as denial of service, sniffing, spoofing; Physical security, disaster planning & recovery; Authentication: passwords, tokens (cards), biometrics; Authorisation - DAC, MAC, Non-DAC (RBAC), Auditing; Cryptography, cryptanalysis, symmetric encryption (DES, AES), steganography, Public key (Diffie-Hellman, RSA), PKI, Digital certificates, Digital signatures; Key management – kerberos; Web security - PGP, SSL, SET; IPSec, Firewalls, DMZ, malicious codes.

SDT3104C: Enterprise Software Development

SAP Enterprise Portals Fundamentals; Implementation; SAP Enterprise Portal System Administration; Portal API, HTMLB, JSP Portal Components; ABAP- BASIS; Eventing Framework (EPCF), Connector Framework, Custom Portal Services, User Management API, Localization of Components; Web Services, Web Application Server Integration, WebDynpro, Customization of the Portal, Performance Considerations , Visual Composer.

CAN3102C: Communication & Network - Design & Management

Introduction to enterprise networking. Network Planning. Network Design. Network Management: Configuration, Fault, Performance and Cost Management, End-user Support, Network Management Tools, Simple Network Management Protocol, ASN1.0, Basic Encoding Rules. Network Security: Firewalling, DMZ, subnetting, Gateways. Computer malware. LAN Technologies, Gigabit Ethernet, Mobile LAN (IEEE 802.11X), Bluetooth, Ad-Hoc networks. WAN Technologies: xDSL, Frame Relay, ATM, Wireless. Implementation: NAT, Proxy, Firewall, popular services (FTP, HTTP, SMTP, DNS).

MCT2104C: Mobile Application Development

Introduction to mobile computing; Wireless Networks: 2G & 3G; Short Message Service: Gateways; WAP (Wireless Mark-up Language): Introduction to WAP; Syntax and Semantics; Developing WAP contents; Java Mobile Programming: Introduction to J2ME; KVM, CDC and MIDP Profiles; MIDP and CLDC API; Mobile HCI Design.

PROJ3105C: System Development Project

Run a full-fledged software development project: from concept, through logical modelling and up to physical implementation. Demonstration of core competencies acquired during the degree.