



UNIVERSITY
of
TECHNOLOGY,
MAURITIUS

School of Innovative Technologies and Engineering

Department of Business Informatics and Software Engineering

BSc (Hons) Business Information Systems

PROGRAMME DOCUMENT

VERSION 6.3

BISv6.3

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University of Technology, Mauritius

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A. Programme Information

This programme of study aims at producing graduates who can exploit Information Technology in various business situations. It is concerned with the analysis, design and implementation of computer and communications applications and with broader issues of the strategic use of Information Technology in organizations. This unique combination of technical, business and management skills learnt in this programme would answer to the employment needs of our graduates. Such graduates would be interested primarily in pursuing careers as managers of Information Technology groups or as management consultants.

B. Programme Aims

There is an increasing demand for professionals who have the business acumen to understand an organization's business systems and information needs and who also have the technical awareness to ensure that the right computer support is available. The programme aims to provide students with an understanding of Information Technology applications in business, within the context of a general grounding in management education. It also aims to prepare students for leadership roles.

C. Programme Objectives

After successful completion of the program, the students are expected to have developed

- A solid understanding of information technology applications in business areas
- Strong analytical skills for requirements elicitation
- Expert knowledge in software applications development

PART I - Regulations

D. General Entry Requirements

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

E. Programme Entry Requirements

As per General Entry requirements.

F. Programme Mode and Duration

Full Time:	Minimum 3 Years, Maximum 6 Years	(Minimum 6 Semesters, Maximum 12 Semesters)
Part Time:	Minimum 4 Years, Maximum 7 Years	(Minimum 8 Semesters, Maximum 14 Semesters)

G. 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;
- Work Placement (full time mode only).
- Mini Project (part time mode only).

H. 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.

I. Attendance Requirements

As per UTM's Regulations and Policy

J. Credit System

For the award of a Certificate, a minimum of 34 credits are required.

For the award of a Diploma, a minimum of 70 credits are required.

For the award of an Ordinary Degree, a minimum of 95 credits are required.

For the award of a Honours Degree, a minimum of 104 credits are required.

K. Student Progress and Assessment

The programme is delivered mainly through lectures, tutorials, and practical laboratory sessions. Students are expected to be as autonomous and research oriented as possible and activities may include reading research papers, delivering presentations, taking part in quizzes, case-studying amongst others.

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, practicals and class tests.
- Seminars are evaluated on continuous assessment only. Each seminar must consist of a **minimum of two** assessments.
- For the mini project in the part-time version of the programme structure, the students are required to work on a project with significant analysis & design content. Upon completion of the project, the students must submit a report.

Module grading structure:

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

L. Evaluation of Performance

1. The % mark at Level 1 contributes a 20% weighting towards the degree classification.
2. The % mark at Level 2 contributes a 30% weighting towards the degree classification.
3. The % mark at Level 3 contributes a 50% weighting towards the degree classification.

M. Award Classification

Overall weighted mark y (%)	Classification
$70 \leq y \leq 100$	1 st Class Honours
$60 \leq y < 70$	2 nd Class 1 st Division Honours
$50 \leq y < 60$	2 nd Class 2 nd Division Honours
$45 \leq y < 50$	3 rd Class Honours
$40 \leq y < 45$	Pass Degree
$y < 40$	No Award

N. Programme Organisation and Management

Programme Director: Mr Ashwin TULSI

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PART II -Programme Structure

O. BSc (Hons) Business Information Systems – Full Time (Version 6.3)

YEAR 1 (Level 1)							
Semester 1				Semester 2			
Code	Modules	Hrs/Wk L+T/P	Credits	Code	Modules	Hrs/Wk L+T/P	Credits
MATH1103C	Decision Mathematics	2+1	3	DBT1101C	Database Management Systems	2+2	4
MGMT1102C	Organisation and Management	2+1	3	PROG1119C	Object Oriented Software Development	2+2	4
ISM1126C	Accounting for Information Systems	2+1	3	WAT1132C	Web Programming Fundamentals	2+2	4
PROG1101C	Programming Concepts	2+2	4	CAN1101C	Networks	2+1	3
ITE1107C	Language & Communication Seminar	2+1	3	STAT1102C	Business Statistics	2+1	3

YEAR 2 (Level 2)							
Semester 1				Semester 2			
Code	Modules	Hrs/Wk L+T/P	Credits	Code	Modules	Hrs/Wk L+T/P	Credits
ISM2127C	Information Risk	2+1	3	PROG2107C	Visual Programming	2+2	4
DBT2110C	SQL & PL/SQL Fundamentals	2+2	4	ITE1102C	Legal Issues for IT	2+1	3
PROG2110C	Data Structures & Algorithms	2+2	4	DBT2103C	Advanced Database Management Systems	2+2	4
SDT2102C	Analysis & Design	2+2	4	SEM2116C	Software Project Management	2+1	3
ISM2104C	E-Business	2+1	3	WAT2127C	Advanced Web Programming	2+2	4

YEAR 3 (Level 3)								
Semester 1				Semester 2				
Code	Modules	Hrs/Wk L+T/P	Credits	Code	Modules	Hrs/Wk L+T/P	Credits	
SEM3105C	IT Quality Management	2+1	3	ISM3103C	Enterprise Resource Planning	2+1	3	
SECU2106C	Internet Security	2+2	4	ENTR3115C	Entrepreneurship and Ecommerce	2+1	3	
OSS2105C	OS Administration & Management	2+2	4	PROJ2119C	Work Placement		4	
UTM2101C	Life Skills & Good Practices	2+2	4					
PROJ3105C	System Development Project							9

P. BSc (Hons) Business Information Systems – Part Time (Version 6.3)

YEAR 1 (Level 1)							
→Start of Level 1							
Semester 1				Semester 2			
Code	Modules	Hrs/Wk L+T/P	Credits	Code	Modules	Hrs/Wk L+T/P	Credits
MATH1103C	Decision Mathematics	2+1	3	ISM1126C	Accounting for Information Systems	2+1	3
MGMT1102C	Organisation and Management	2+1	3	DBT1101C	Database Management Systems	2+2	4
PROG1101C	Programming Concepts	2+2	4	PROG1119C	Object Oriented Software Development	2+2	4
ITE1107C	Language & Communication Seminar	2+1	3				

YEAR 2 (Level 2)							
				→Start of Level 2			
Semester 1				Semester 2			
Code	Modules	Hrs/Wk L+T/P	Credits	Code	Modules	Hrs/Wk L+T/P	Credits
WAT1132C	Web Programming Fundamentals	2+2	4	ISM2127C	Information Risk	2+1	3
CAN1101C	Networks	2+1	3	DBT2110C	SQL & PL/SQL Fundamentals	2+2	4
STAT1102C	Business Statistics	2+1	3	PROG2106C	Visual Programming	2+2	4
				ISM2104C	E-Business	2+1	3
End of Level 1 →							

YEAR 3 (Level 3)							
Semester 1				Semester 2			
Code	Modules	Hrs/Wk L+T/P	Credits	Code	Modules	Hrs/Wk L+T/P	Credits
SDT2102C	Analysis & Design	2+2	4	ITE1102C	Legal Issues for IT	2+1	3
PROG2110C	Data Structures & Algorithms	2+2	4	DBT2103C	Advanced Database Management Systems	2+2	4
WAT2127C	Advanced Web Programming	2+2	4	SEM2116C	Software Project Management	2+1	3
				SECU2106C	Internet Security	2+2	4
				End of Level 2 →			

YEAR 4 (Level 4)								
→Start of Level 3								
Semester 1				Semester 2				
Code	Modules	Hrs/Wk L+T/P	Credits	Code	Modules	Hrs/Wk L+T/P	Credits	
SEM3105C	IT Quality Management	2+1	3	ENTR3115C	Entrepreneurship and Ecommerce	2+1	3	
OSS2105C	OS Administration and Management	2+2	4	ISM3103C	Enterprise Resource Planning	2+1	3	
UTM2101C	Life Skills & Good Practices	2+2	4	PROJ2118C	Mini Project		4	
PROJ3105C	System Development Project							9
<i>End of Level 3→</i>								

Q. MODULE OUTLINE

MATH1103C: DECISION MATHEMATICS

Digital Systems: number systems and codes, digital arithmetic operations, boolean algebra & logic gates and combinational logic circuits. Linear Programming Involving Two Variables: formulation, graphical solution, feasible and optimal solutions and integer-valued problems. Sets: set operations & identities and computer representation of sets. Functions. Probability: axioms of probability, discrete & continuous random variables, probability density function & cumulative distribution function and expectation & variance.

MGMT1102C: ORGANISATION AND MANAGEMENT

Introduction to Management, behavioural, classical and scientific approach to management. Organizational environments and culture. Ethics and social responsibility. Planning. Managing information. Decision making. Control. Innovation and change. Managing teams. Organizational structures. Motivation and leadership.

ISM1126C: ACCOUNTING FOR INFORMATION SYSTEMS

Financial accounting concepts. Recording business transactions. Company accounts – preparation & interpretation. Costing techniques. Budgeting. Use of accounting in decision making. Overview of accounting information systems. Emerging issues.

PROG1101C: PROGRAMMING CONCEPTS

This module introduces the basic programming concepts using a problem solving approach. Writing Algorithms. Definition of Source Code & Compiler. Integrated Development Environments (IDEs). Data types & Variables. Conditional Statements. Arrays. Loops. Basic Input and Output System. Functions/Methods: definition, passing parameters/arguments, return types. Calling Methods. Overview of packages & libraries.

ITE1107C: LANGUAGE & COMMUNICATION SEMINAR

Description of communication process. Barriers to communication. Oral communication. Prepare for job interviews. Carry out presentations on a theme. Organize and participate in meetings. Electronic communication: emails, websites, social media. Review of grammar and punctuation. Prepare curriculum vitae. Write job applications, business letters and reports (in an ICT context). Formal writing using electronic media.

DBT1101C: DATABASE MANAGEMENT SYSTEMS

Introduction to Databases. Database Environment. Database Architecture. The Relational Model. Relational Integrity. Entity Relationship Modelling, Normalisation. SQL, Relational Algebra.

PROG1119C: OBJECT ORIENTED SOFTWARE DEVELOPMENT

Introduction to object programming paradigm. Object & Class Concepts. Inheritance. Interface and Polymorphism. Casting. Collection Classes. Exception Handling. Streams & File Manipulation.

WAT1132C: WEB PROGRAMMING FUNDAMENTALS

Internet History, Basics of web design, HTML5, Site development processes, Design principles, Page Layout with CSS3, Navigation, Responsive Web Design using Bootstrap, Form development, Testing and publishing, Web accessibility, The Document Object Model, Client-side scripting with JavaScript, Using the JQuery library.

CAN1101C: NETWORKS

Overview of Networking. Communications Model, ISO-OSI Reference Model, TCP/IP Suite. Popular application layer protocols such as: HTTP, FTP, SMTP and DNS. Transport Layer protocols: TCP and UDP. Connection Management, Reliable Data Transfer, Flow Control, Error Control, Congestion Control. Network Layer protocols: Ipv4 and IPv6, DHCP, ARP, RARP. Fragmentation. Network Design: Topologies. Networking issues: Subnetting, NAT. Networking Devices and Media.

STAT1102C: BUSINESS STATISTICS

Statistics in Business. Data measurement. Frequency distributions. Descriptive statistics. Quantitative and qualitative data graphs. Scatter plots. Measures of central tendency and variability: Group and ungrouped data. Measures of shape. Probability. Experiments, sample space and events. Probability relationships. Bayes' Theorem Probability Distributions. Random variables. Binomial probability distribution. Poisson probability distribution. Uniform probability distribution. Normal probability distribution. Exponential probability distribution. Sampling and sampling distributions. Statistical inference. Estimation for single populations. Hypothesis testing for single populations. Inferences about two populations. Analysis of variance and design of experiments.

ISM2127C: INFORMATION RISK

Information Risk Management. Context of Risk in Business. Information Security Fundamentals. International Information Risk Management Standards. Information Risk Management Strategy Development. Risk assessment & Treatment. Business Impact Analysis. Threat & Vulnerability Assessment. Risk determination and Controls. Information Risk Management Methodologies. Risk Reporting & Presentation. Decision Making. Information Risk Classification, Process, Schemes and Issues.

DBT 2110C: SQL & PL/SQL FUNDAMENTALS

Using SQL for retrieval, sorting & restrict data. Functions, Subqueries. SQL Reporting. Create PL/SQL Blocks. Stored Procedures. Database triggers. Use of Oracle SQL Developer.

PROG2106C: VISUAL PROGRAMMING

Introduction to the visual programming paradigm. Survey of visual programming tools. Prototyping and software development. Working with IDEs. HCI issues. Quality attributes of visual programming products. Professional programming conventions and protocols.

SDT2102C: ANALYSIS & DESIGN

Large Scale Software Development. Methodologies. The RUP. UML. Requirements Modelling. Design Modelling. Implementation Models. Testing techniques. Importance of Modelling.

OSS2105C: OS ADMINISTRATION AND MANAGEMENT

Operating System Structure. Active Directory. Configuring DNS for Active Directory, Implementing users and group policy. File systems.

PROG2107C: DATA STRUCTURES & ALGORITHMS

Implementation of simple and Complex data structures using an object oriented approach. Queues. Nodes. Unordered & ordered Lists. Stacks. Sorting & Searching. Recursion. Tree Algorithms. Graph Algorithms. Complexity Analysis.

ITE1102C: LEGAL ISSUES FOR IT

Introduction to Law and Obligations: Aspects of Contract and Torts. Supply contracts for IT hardware and software: shrink-wrap and click-wrap agreements and their legal validity. Liability for defective software : who faces liability in case a software goes wrong. E-Commerce: E-mail and web-click contracts, encryption, electronic signatures and digital payments, digital cash and escrow systems. Intellectual property rights :copyright in computer software, patenting software applications and business methods patents. Data protection and privacy : control of databases. Cyber harms : computer misuse and cybercrimes, viruses, denial of service attacks, spam, libellous materials.

SECU2106C: INTERNET SECURITY

Basic Security Services (AAA, CIA, Non-deniability). Security landscape and attacks (Phishing, DNS poisoning, DoS, DDoS, click frauds). Risk assessment of security Cryptography (Symmetric and Public key cryptography, digital signatures, digital certificates, Hash and MAC Algorithms). Access control. Role Based Access control Web Security: SSL, Secure payment for e-commerce. Email security and Malware Firewalls and Intrusion Detection Systems. Introduction to computer Forensics.

DBT2103C: ADVANCED DATABASE MANAGEMENT SYSTEMS

Security. Recovery. Concurrency. Query Optimization. Distributed Databases. Object Oriented Databases. Deductive Database. Business Intelligence.

SEM2116C: SOFTWARE PROJECT MANAGEMENT

Project Management Fundamentals. Specificity of software engineering projects. Justifying software projects. Project Planning. Techniques for Project Scheduling. Managing software engineering professionals. Risk management. Communications management. Project Monitoring. Project Evaluation and Termination.

ISM2104C: E-BUSINESS

E-Business applications & enabling technologies. B2 & B2B. Best practices. Virtual supply-chain and virtual business integration models. Business strategy & structure for the e-business revolution.

SEM3105C: IT QUALITY MANAGEMENT

Definitions of quality & their limitations. Quality management framework. Quality Planning, Quality Measurement. Reviews and inspections. Testing techniques and strategies. Process improvement. Quality management systems.

ENTR3115C: ENTREPRENEURSHIP AND ECOMMERCE

Financing a New Venture and the Economics of Start-up Ventures. Valuation and Deal Structure. Marketing, Strategy, and the Entrepreneur. Ecommerce and marketing. Understanding the Nature of Opportunity. Evaluating Opportunity. Ethical Issues and the Entrepreneur. The Nature of Entrepreneurship and its Foundations. The Vital Role of Entrepreneurship in the Economy. Understanding the entrepreneur: "Who" is the Entrepreneur? Innovation, Technology and the Entrepreneur. Expectations About Size, Growth, Returns and Risk.

WAT 2127C: ADVANCED WEB PROGRAMMING

Create dynamic web applications using the .NET framework. Be proficient with visual and code-based data connectivity and database management. Create reusable classes that incorporate business logic. Identify and use classes contained in .NET fundamental class library. Enhancing web applications with Ajax.

ISM3103C: ENTERPRISE RESOURCE PLANNING

Overview: from production/manufacturing management to Enterprise Resource Planning, Production and operations management, Materials requirements planning (MRP), Manufacturing resources planning MRP II, Supply-chain management, ERP. Pre-requisites of ERP: three-tier business applications, business process re-engineering, data warehousing, groupware applications. Components of ERP. Case-studies on best-practices in ERP. Practicals on leading ERP software: SAP, ORACLE ERP.

BFVP3106C: LIFE SKILLS & GOOD PRACTICES

Employability development skills. Good Governance. Prevention of corruption. Personal development skills and role of youth in addressing societal challenges. Coping skills. Addressing Societal Challenges including Substance Abuse, Poverty, Climate Change, Social Media and Family problems.

PROJ2118C: MINI PROJECT

Students will be required to work out the analysis & design of a real-world scenario and come up with appropriate design models using case-tools. The teaching strategy will be 45 hours of face-to-face contact hours over one semester.

PROJ3105C: PROJECT

Project guidelines are given in the Project Handbook.