



UNIVERSITY
of
TECHNOLOGY,
MAURITIUS

School of Innovative Technologies And Engineering

BSc (Hons.) Software Engineering

PROGRAMME DOCUMENT

BSE v8.0
August 2021

A. Programme Information

The BSc (Hons) Software Engineering is designed to satisfy the increasing demand for well-trained graduates to work in the export-oriented software development industry. The curriculum provides a balanced and intellectually stimulating programme which combines together state-of-art techniques and emerging trends to produce skilled software engineers.

The programme introduces students to the necessary foundations in computing and mathematical techniques. Following which, software engineering knowledge and skills are developed with modules focusing on programming, databases, web development, security and systems analysis and design. More specific technical skills and emerging techniques are further introduced with Web Services, Mobile computing, Internet of Things, Blockchain, Artificial Intelligence and Machine Learning. The programme also prepares the students for research, communication and entrepreneurship.

Work placement attached with the software development industry is an integral part of this course and allows students to gain practical work experience during between year 2 and year 3 of the programme.

B. Programme Aims

This programme aims at producing graduates who have a keen interest in software development and who aspire to work as software developers in the export-oriented software development industry.

C. Programme Objectives

After successful completion of the Programme, the graduate will be able to:

- Appreciate the functioning of a computer system and its operating systems
- Understand the principles of data modelling
- Solve problems through optimal modelling and implement solutions by developing applications
- Design and develop network-based solutions
- Communicate both orally and in writing using traditional and electronic media
- Understand how a business is organised and relate to how ICT is ubiquitously applied across the different business functions
- Identify and solve research problems in the software industry
- Define, plan and monitor ICT projects in organisations
- Design and develop interactive multimedia applications
- Define and implement quality management systems in a software engineering environment
- Develop web and mobile applications using a variety of technologies and architectures
- Understand the concepts and applications of emerging technologies

PART I - Regulations

D. General Entry Requirements

As per UTM'S Admissions Regulations, and 'Admission to Programmes of Study at First Degree Level'.

E. Programme Entry Requirements

'A' Level in Mathematics or Computer Science.

F. Programme Mode and Duration

Full Time: Minimum 3 Years, Maximum 6 Years (Minimum 6 Semesters, Maximum 12 Semesters)

G. Teaching and Learning Strategies

The programme can be delivered in different modes, including face-to-face sessions, online and blended modes.

- Lectures, Tutorials and Practical Laboratory Sessions;
- Class tests and Assignments;
- Structured discussions and Self-directed study;
- Research projects;
- Workshops / Seminars / Lab Sessions;
- Case study material & scenario centred on real world problems;
- Work placement (full time mode only).
- Virtual and/or recorded lectures, tutorials, practical exercises.

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.
- Academic tutoring: Individual/group tutoring sessions can be arranged for students upon request
- Student counselling is provided upon request through the UTM Wellness Centre.
- Project Supervision

I. Attendance Requirements

As per UTM's Regulations and Policy.

J. Credit System

This programme is in line with the European Credit Transfer System (ECTS)

1 module: 6 credits

System Development Project: 12 credits

Minimum Credits Required for Award of:

Certificate: 60

Diploma: 120

Ordinary Degree: 168

Honours Degree: 180

K. Student Progress and Assessment

Each module consists of 150 hours of learning, comprising of 45 hours of delivery and 105 hours of self-study. 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 is a list of modules which may be evaluated by continuous assessment only: Object Oriented Software Development, Mobile Application Development, Advanced Mobile Application Development, Web Service Development and Computer Game Development, Software Security, Smart IoT Applications, Research & Innovation, AI & Machine Learning Techniques, Professional Issues in ICT.
- The system development project carries 300 marks (12 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

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 and Coordinator: **Dr. Geerish Suddul**

Contact Details:

- Telephone number: 207 5250 (Fax: 234 1767)
- Email: g.suddul@umail.utm.ac.mu

Programme Review Committee: Dr. G. Suddul, Dr. S. Panchoo, Dr. S. Armoogum, Mr. R. Foogooa, Mr. J. Narsoo, Mr. P. Kanaksabee, Mr. H. Seegobin, Mr. A. Tulsi.

Part II - Programme Structure

O. BSc (Hons) Software Engineering – Full Time (Version 8.0)

This programme is offered on a Full-Time basis only.

YEAR 1 (Level 1)							
<i>Semester 1</i>				<i>Semester 2</i>			
Code	Modules	Hrs/Wk L+T/P+SS	Credits	Code	Modules	Hrs/Wk L+T/P+SS	Credits
HCA1106C	Computer Organisation & Architecture	2+1+7	6	MATH1215C	Computational Methods	2+1+7	6
PROG1101C	Programming Concepts	2+1+7	6	PROG1119C	Object Oriented Software Development	2+1+7	6
MATH1103C	Decision Mathematics	2+1+7	6	WAT1146C	Website Design & Development	2+1+7	6
ITE1108C	Professional Issues in ICT	2+1+7	6	DBT1120C	Database Design Concepts	2+1+7	6
CAN1104C	Networking Essentials	2+1+7	6	OSS1112C	Operating System Concepts	2+1+7	6

YEAR 2 (Level 2)							
<i>Semester 1</i>				<i>Semester 2</i>			
Code	Modules	Hrs/Wk L+T/P+SS	Credits	Code	Modules	Hrs/Wk L+T/P+SS	Credits
PROG2110C	Data Structures & Algorithms	2+1+7	6	MCT2104C	Mobile Application Development	2+1+7	6
WAT2133C	Web Application Development	2+1+7	6	WAT2104C	Web Service Development	2+1+7	6
SDT2120C	UI/UX Design	2+1+7	6	SEM2121C	Agile Project Management	2+1+7	6
DBT2122C	Advanced Database Design & Implementation	2+1+7	6	SECU2130C	Software Security	2+1+7	6
SDT1119C	System Analysis & Design	2+1+7	6	SEM2124C	Research and Innovation	2+1+7	6

PRE – LEVEL 3 ACTIVITY			
Code	Activity	Hrs/Wk	Credits
PROJ2119C	Work Placement	Two-month training in an ICT industry or at UTM which will start immediately after the 15 th week of the 4 th Semester of the programme of study	6 credits Compulsory Submission of a Portfolio upon completion

YEAR 3 (Level 3)

<i>Semester 1</i>				<i>Semester 2</i>			
Code	Modules	Hrs/Wk L+T/P+SS	Credits	Code	Modules	Hrs/Wk L+T/P+SS	Credits
MCT2109C	Advanced Mobile Application Development	2+1+7	6	MGMT2108C	Technopreneurship	2+1+7	6
MUL2120C	Computer Game Programming	2+1+7	6	SCG2136C	Blockchain Systems	2+1+7	6
SCG3126C	AI & Machine Learning Techniques	2+1+7	6	SEM2123C	Software Quality & Testing	2+1+7	6
WAT2124C	Smart IoT Applications	2+1+7	6				
PROJ3105C	System Development Project						12