

# MSc Software Development –IC563

## 1. Introduction

Mauritius has emerged as an international and competitive Information and Communication Technologies (ICT) destination and is steadily positioning itself as a regional ICT hub. In recent years, the ICT sector has experienced a rapid and sustained growth and is gradually emerging as a major pillar of the Mauritian economy. As a result, there is a very high demand for ICT professionals including software analyst, software developers and software testers.

The MSc Software Development programme aims to provide non-computing graduates (e.g. Engineering, Science, Mathematics etc), with the necessary skills to apply their knowledge to a wide range of areas in the ICT industry. It is a response to the increasing prominence of digital information in our society. The course is designed to permit a high degree of flexibility in that students may choose from a variety of well-focused streams.

Graduates of this postgraduate programme will be able to maximise their career opportunities through the provision of a solid software development foundation enhancing the skills gained through their first degree. Students of this programme will develop the technical, analytical and professional skills required to take on software development roles within the ICT industry.

## 2. Aims and Objectives

The overall aim of this programme is to train non- IT graduates in Software Development in order to support the software industry.

The objectives of the programme are as follows:

- (i) Provide an in-depth knowledge and understanding of software development principles and techniques;
- (ii) Develop the ability to analyse software problems, create and evaluate software designs and develop and appropriately test software solutions using latest technologies;
- (iii) Foster critical analysis and evaluation skills pertaining to software development and information technologies;
- (iv) Encourage students to uphold professional and ethical standards and actively engage with future technological developments;
- (v) Provide students with a set of skills relevant to potential employers in a range of ICT sectors.

## 3. General Entry Requirements

At least a Second Class Honors undergraduate Degree from a recognized University, GPA not less than 2.50 or alternative qualifications acceptable to the University of Mauritius.

## 4. Programme Requirements

An undergraduate degree in Engineering or Science or Mathematics or any other degree acceptable to the Software and Information Systems Department.

## 5. General and Programme Requirements – Special Cases

The following may be deemed to have satisfied the General Entry and Programme requirements for admission:

- (i) Applicants who do not satisfy any of the requirements as per Regulations 3 and 4 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 Regulations 3 and 4 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 practicing professional qualification obtained by examination.

## 6. Programme Duration

The normal duration of the Programme will be as detailed below:

	Full-Time	Part-Time
Minimum (years)	1	2
Maximum (years)	2	4

However, students wishing to exit before the end of the course may do so as follows:

- (a) After successfully completing **four (4)** modules, for the award of a **Postgraduate Certificate**.
- (b) After successful completion of **eight (8)** modules, for the award of a **Postgraduate Diploma**.

## 7. Credits Per Semester:

Minimum 3 credits per semester and Maximum 24 credits per semester subject to Regulation 6.

## 8. Minimum Credits Required for Award of:

Master's Degree: 36

Postgraduate Diploma: 24

Postgraduate Certificate: 12

Breakdown as follows:

	Minimum Core Modules Taught	Dissertation (SIS6000)	Electives Optional Modules
Master's Award	18 credits	9 credits	9 credits
Postgraduate Diploma	18 credits		6 credits
Postgraduate Certificate	12 credits		

## 9. Assessment

All modules, except for SIS 6000, are of 45 hours duration and carry equal weightage [i.e. of 3 credits]. All modules carry 100 marks and are assessed as follows (unless otherwise specified):

- A written examination of 2 hours and continuous assessment carrying a range of 40% to 50% of total marks.
- Continuous assessment may be based on laboratory work, and/or assignments and should consist of at least two components of which at least one should be a class test.
- An overall total of 40% for combined assessment and written examination components would be required to pass the module, without minimum thresholds within the individual continuous assessment and written examination.

Students are required to register for modules, which they intend to follow in a given semester on date(s) specified by the Faculty.

### Submission Deadlines for Dissertation:

	<b>Full-Time</b>	<b>Part-Time</b>
Start date	January – Level 1	January – Level 2
Submission date	Last working day of August –Post Level 1	Last working day of August – Post Level 2

## 10. List of Modules

Code	Module Name	Hrs/wk L+P	Credits
<b>CORE MODULES</b>			
SIS 6031	Programming Methodology	2+2	3
SIS 6032	Database Concepts	2+2	3
SIS 6033	Software Development Process	3+0	3
SIS 6034	Applied Data Structures and Algorithms	2+2	3
SIS 6035	Application Development	2+2	3
SIS 6036	Software Testing and Quality Assurance	3+0	3
<b>PROJECT</b>			
SIS 6000	MSc Project		9
<b>ELECTIVE MODULES</b>			
The electives are classified in a number of streams aimed at developing skills in specific areas of software development. A student will have to take all modules in a given stream. Each stream consists of 3 electives.			
<b><u>Stream 1: Java Application Development</u></b>			
SIS 6037	Advanced Java Programming	2+2	3
SIS 6038	Mobile Application Development	2+2	3
SIS 6039	Java Enterprise Application Development	2+2	3
<b><u>Stream 2: .Net Application Development</u></b>			
SIS 6040	Event-Driven Programming	2+2	3
SIS 6046	Enterprise Applications Development	2+2	3
SIS 6047	C# Programming	2+2	3
<b><u>Stream 3: Database Systems</u></b>			
SIS 6048	Advanced Databases	2+2	3
SIS 6049	Knowledge Discovery In Databases	2+2	3
SIS 6050	Database Administration	2+2	3
<b><u>Stream 4: Web Technologies</u></b>			
SIS 6057	Web Development	2+2	3
SIS 6058	Web Design And Applications	2+2	3
SIS 6059	Web Application Technologies	2+2	3
<b><u>Stream 5: Enterprise Systems</u></b>			
SIS 6060	Principles of Enterprise Systems	2+2	3
SIS 6061	Business Intelligence	3+0	3
SIS 6062	Enterprise Systems Architecture And Integration	2+2	3

## 11. Programme Plan

### Full-Time

	Module Code	Module	Hrs/WK L+P	Credits
<b>Semester1</b>	SIS 6031	Programming Methodology	2+2	3
	SIS 6032	Database Concepts	2+2	3
	SIS 6033	Software Development Process	3+0	3
	SIS 6034	Applied Data Structures and Algorithms	2+2	3
	SIS 6035	Application Development	2+2	3
	SIS 6036	Software Testing and Quality Assurance	3+0	3
<b>Semester 2 *</b>		Elective 1		3
		Elective 2		3
		Elective 3		3
	SIS 6000	Project		9

### Part-Time

	Module Code	Module	Hrs/WK L+P	Credits
<b>Semester1</b>	SIS 6031	Programming Methodology	2+2	3
	SIS 6032	Database Concepts	2+2	3
	SIS 6033	Software Development Process	3+0	3
<b>Semester 2</b>	SIS 6034	Applied Data Structures and Algorithms	2+2	3
	SIS 6035	Application Development	2+2	3
	SIS 6036	Software Testing and Quality Assurance	3+0	3
<b>Semester 3 *</b>		Elective 1		3
		Elective 2		3
		Elective 3		3
<b>Semester 4</b>	SIS 6000	Project		9

**\* All electives must be from the same stream.**

**Note 1:** Full-time students are expected to opt for a stream at the end of semester one and part-time students at the end of semester two. A student is required to take all the modules from the chosen stream.

**Note 2:** A stream will be offered only if sufficient number of students has opted for it and depending on availability of resources.