

MSc Applied Statistics with Specialisation in Actuarial Science – SH544

1. Context and Objectives

The MSc in Applied Statistics with Specialisation in Actuarial Science will serve a growing need for highly trained professionals in the Statistical and Actuarial sciences who possess the skills to analyse data with a view to provide support for informed decision making, and for addressing problems involving uncertainty in government, finance, insurance and business.

The objectives of the MSc Applied Statistics with Specialisation in Actuarial Science are to:

- Provide postgraduate training to students in specialised application areas of statistics and actuarial science.
- Strengthen students' quantitative skills by providing them with a solid foundation and a mastery of advanced statistical and actuarial techniques.
- Enhance students' ability to use software, computer simulations and data-mining techniques to find solutions to problems arising in planning and decision-making.
- Prepare students for research in government, finance, insurance and business sectors.

2. Learning Outcomes

On the completion of the programme, the students should be able to:

- Identify and apply appropriate advanced statistical and actuarial techniques to solve a given decision making problem, coupled with uncertainty, and propose solutions in areas of finance, insurance and other business sectors.
- Use specialized packages for data (risk) modelling and analysis, including performing simulations and data-mining.
- Build predictive univariate or multivariate statistical models for application in a wide range of fields.
- Interpret statistical output and communicate in a simple but clear language.
- Interpret theoretical, empirical and research findings involving statistical methods.

3. Teaching and Learning Methods

As far as possible, a blended approach will be used. These might include among others: face to face lectures, e-learning (moodle), problem based learning, case studies, document analysis, practical lab sessions (where applicable), assignments, seminars, tutorials, open learning materials, textbooks and independent study as well as collaborative learning.

4. **Entry Requirements**

General Entry Requirements

Successful completion of an undergraduate degree with

- at least a Second Class or 50%, whichever is applicable or
- a GPA not less than 2.5 out of 4 or equivalent, from a recognised higher education institution

OR alternative qualifications acceptable to the University of Mauritius

Programme Requirements

A degree in Statistics, Mathematics, Actuarial Science with strong coverage of statistics/econometrics and actuarial studies.

Or equivalent qualifications acceptable to the University of Mauritius.

Consideration can also be given to students having strong quantitative background in relevant field.

General and Programme Requirements - Special Cases

The following may be deemed to have satisfied the general and programme requirements for admission:

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

5. **Programme Duration**

The programme will be offered on a part-time basis.

	Normal (Yrs)	Maximum (Yrs)
Master's Degree	2	4
Postgraduate Diploma	2	4

6. **Minimum LCCS Credits Required for Awards: 78**

	Core Modules	Electives	Dissertation	Total
Master's Degree	36	24	18	78
Postgraduate Diploma	36	12	-	48

7. **Assessment and Deadlines**

Students are required to register for modules, which they intend to follow in a given semester/ year.

Each module will carry 100 marks and will be assessed as follows (unless otherwise specified): written examination of 3- hours duration for modules with 12 credits and 2 hours duration for modules with 6 credits.

The continuous assessment will count for 40 - 50% of the overall percentage mark of the module(s), except for a Programme of Studies where the structure makes for other specific provision(s).

The written examination will count for 50-60 % of the overall percentage marks of the modules.

Continuous assessment may be based on seminars and/or assignments and should include at least one class test.

Written examinations for all modules will be carried out at the end of the semester in which they are taught (unless stated otherwise)

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

Students are required to submit work for continuous assessment by due dates. Failure to do so will normally incur penalties.

All modules carry their own credit value

Submission Deadlines for Dissertation

- First Draft: End of July in the Final Year
- Final Copy: Last working day of August in the final Year by 4 p.m at latest

Three copies of the dissertation (two spiral-bound copies and one soft copy in a single PDF text file on electronic storage media) should be submitted to the Faculty/Centre Registry and in addition, a soft copy of the dissertation in a single PDF text file should be uploaded on the "*Turnitin' Platform*", in the final assignment submission link indicated by the Programme/Project Coordinator.

Choice of Electives

Students will be required to submit their choice of Electives in order of priority by the middle of Semester 1 of Year 1. The University reserves the right not to offer a given elective module if the critical number of students is not attained and/or if there are resource constraints. Additional electives may also be offered, depending on availability of resources.

8. List of Modules

Code	Module Name	Hrs/Wk L+P	LCCS Credits
<u>CORE</u>			
STAT 5124	Modelling Time Series and Longitudinal Data ¹	3 + 0	6
STAT 5125	Survey Methods and Survey Data Analysis ¹	3 + 0	6
STAT 5127	Multivariate Methods ¹	3 + 0	6
STAT 5220	Data Mining ²	3 + 0	6
STAT 5226	Statistical Inference and Computational Methods ²	3 + 0	6
STAT 5227	Stochastic Processes ²	3 + 0	6
STAT 6000	Dissertation	-	18
<u>ELECTIVE</u>			
DFA 6221	Finance and Financial Reporting for Actuarial Science ²	3 + 0	6
STAT 6120	Statistical Methods for Insurance ¹	3 + 0	6
STAT 6020Y	Life Contingencies	3 + 0	12
STAT 6022Y	Statistical Finance	3 + 0	12
ECON 5122	International and Global Affairs ¹	3 + 0	6

NOTE:

¹: Taught and examined in first semester

²: Taught and examined in the second semester

9. Programme Plan

YEAR 1

Code	Module Name	Hrs/Wk L+P	LCCS Credits
CORE			
STAT 5124	Modelling Time Series and Longitudinal Data ¹	3 + 0	6
STAT 5125	Survey Methods and Survey Data Analysis ¹	3 + 0	6
STAT 5127	Multivariate Methods ¹	3 + 0	6
STAT 5220	Data Mining ²	3 + 0	6
STAT 5226	Statistical Inference and Computational Methods ²	3 + 0	6
STAT 5227	Stochastic Processes ²	3 + 0	6
SUB TOTAL			36

YEAR 2

Code	Module Name	Hrs/Wk L+P	LCCS Credits
ELECTIVES	The number of electives must be chosen such that the number of LCCS credits equals to 24 .		24
	<i>The modules can be chosen from the following list :</i>		
DFA 6221	Finance and Financial Reporting for Actuarial	3 + 0	6
STAT 6120	Statistical Methods for Insurance ¹	3 + 0	6
STAT 6020Y	Life Contingencies	3 + 0	12
STAT 6022Y	Statistical Finance	3 + 0	12
ECON 5122	International and Global Affairs ¹	3 + 0	6
Dissertation			
STAT 6000	Dissertation		18
SUB TOTAL			42
TOTAL			78

NOTE:

1: Taught and examined in first semester

2: Taught and examined in the second semester

- (i) Electives will be offered subject to availability of minimum number of students and Faculty resources.
- (ii) Dissertation will be handed in at the end of the second semester