

MSc Applied and Sustainable Chemistry (P/T and FT) – SC 523 (Under Review)

1. Aims and Objectives

The MSc Applied and Sustainable Chemistry is designed to provide students with the key skills required for the needs of the job market. In addition, this programme encompasses key topics which are relevant to national interests and the needs of industry. As Mauritius moves towards a knowledge-based economy, this programme caters for this initiative in line with the vision of the government and helps in promoting capacity building nationally and regionally.

The postgraduate student will gain both theoretical and practical experience related to Chemistry and its Applications. These include emerging sector areas such as Nanotechnology, ICT, and Ocean Acidification as well as other key sectors which include Forensics, Natural Product Chemistry, Chemical Safety, Industrial Toxicology and Entrepreneurship.

Students will carry out their final year project on either an industrial-based or laboratory-based project.

Training for this programme will include dealing with the application of fundamental chemical principles, key laboratory techniques and instrumentation as well as laboratory safety. Lab visits and demonstrations will be included.

2. Learning outcomes

- To develop innovative ideas/thinking/skills (C)
- To develop critical thinking and problem-solving skills (C)
- To plan, conduct and report a chemical study (C)
- To use and develop various experimental techniques (P)
- To apply statistical and numerical skills to physicochemical data (T)
- To communicate ideas, principles and theories effectively by oral, visual and written means (T)
- To work independently or as part of a team (P)
- To tackle problems in the work place using theories and principles of chemistry (K; T)

C- Cognitive/analytical; K- Subject knowledge; T- Transferable skills; P- Professional/practical skills

3. Teaching and learning methods

- Face to face
- Online teaching

- Self-learning
- Tutorials
- Practicals
- Designing/planning of experiments
- Flip classroom
- Assignments/case studies
- Lab/field visits
- Seminars

4. **Entry Requirements**

- General

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 qualification acceptable to the University of Mauritius.

- Programme Requirements

BSc (Hons) Chemistry, BSc (Hons) Chemistry for Analysis or BSc (Joint Hons) Degree with Chemistry as one of the subjects or any other qualifications acceptable to the University of Mauritius.

5. **Programme Duration**

The MSc Programme is run on a full-time (F/T) or part-time (P/T) basis.

	Normal	Maximum
MSc Applied and Sustainable Chemistry (F/T):	2 Semesters	4 Semesters
MSc Applied and Sustainable Chemistry (P/T):	4 Semesters	8 Semesters

6. **Minimum LCCS Credits Required**

For award of the MSc Applied and Sustainable Chemistry, students must obtain at least 72 LCCS credits

Minimum LCCS Credits Required for Award

	Total LCCS Credits (Core Modules + Project)	No. of Learning Hours
Postgraduate Diploma	50	1500
MSc	72	2160

- For each Academic Year
Minimum 6 LCCS credits; Maximum (including retake modules, but excluding exempt modules): 60 LCCS credits.

7. Assessment and deadlines

Each module will carry 100 marks and will be assessed as follows (unless otherwise specified):

Assessment will be based on a written examination of 3-hour (for 8 LCCS credit modules) or 2-hour duration (for 6 LCCS credit modules) and continuous assessment carrying a range of 30% to 50% of total marks. Continuous assessment may be based on laboratory works, and/or assignments and should include at least 1 class test. Modules will be assessed at the end of the semester that they are being taught.

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.

Submission Deadline for Project Dissertation: As per University regulations.

8. List of Modules

Module Code	Module Name	Contact/ Hrs L + P	Self-Study /Hrs	Other Learning Activities/ Hrs	LCCS credits
CHEM 6020(1)	Natural Product Chemistry	30 + 20	80	110	8
CHEM 6021(1)	Computational Chemistry as Applied to the Industry	30 + 20	80	110	8
CHEM 6022(1)	Ocean and Coastal Geochemistry and Climate Change Adaptation	30 + 20	80	110	8
CHEM	Forensic Chemistry and DNA Profiling	24 + 12	60	84	6

6023(1)					
CHEM 6024(1)	Nanotechnology Applications in Medicine	30 + 20	80	110	8
CHEM 6025(1)	Chemical Safety and Industrial and Environmental Toxicology	30 + 20	80	110	8
CHEM 6026(1)	Analytical Techniques / Project Development and Entrepreneurship	24 + 12	60	84	6
CHEM 6027Y(1)	Project	100	200	300	20

9. Programme Plan

MSc Applied and Sustainable Chemistry (FT)

Module Code	Module Name	Contact /Hrs L + P	Self-Study /Hrs	Other Learning Activities/ Hrs	LCCS credits
SEMESTER 1					
CHEM 6020(1)	Natural Product Chemistry	30 + 20	80	110	8
CHEM 6021(1)	Computational Chemistry as Applied to the Industry	30 + 20	80	110	8
CHEM 6022(1)	Ocean and Coastal Geochemistry and Climate Change Adaptation	30 + 20	80	110	8
CHEM 6023(1)	Forensic Chemistry and DNA Profiling	24 + 12	60	84	6
SEMESTER 2					
CHEM 6024(1)	Nanotechnology Applications in Medicine	30 + 20	80	110	8
CHEM 6025(1)	Chemical Safety and Industrial and Environmental Toxicology	30 + 20	80	110	8
CHEM 6026(1)	Analytical Techniques / Project Development and Entrepreneurship	24 + 12	60	84	6
SEMESTER 1/SEMESTER 2					
CHEM 6027Y(1)	Project	100	200	300	20
Total No. LCCS Credits					72

MSc Applied and Sustainable Chemistry (PT)

Module Code	Module Name	Contact /Hrs L + P	Self-Study /Hrs	Other Learning Activities/ Hrs	LCCS credits
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YEAR 1 SEMESTER 1					
CHEM 6020(1)	Natural Product Chemistry	30 + 20	80	110	8
CHEM 6021(1)	Computational Chemistry as Applied to the Industry	30 + 20	80	110	8
YEAR 1 SEMESTER 2					
CHEM 6022(1)	Ocean and Coastal Geochemistry and Climate Change Adaptation	30 + 20	80	110	8
CHEM 6023(1)	Forensic Chemistry and DNA Profiling	24 + 12	60	84	6
YEAR 2 SEMESTER 1					
CHEM 6024(1)	Nanotechnology Applications in Medicine	30 + 20	80	110	8
CHEM 6025(1)	Chemical Safety and Industrial and Environmental Toxicology	30 + 20	80	110	8
YEAR 2 SEMESTER 2					
CHEM 6026(1)	Analytical Techniques / Project Development and Entrepreneurship	24 + 12	60	84	6
YEAR 2 SEMESTER 1/SEMESTER 2					
CHEM 6027Y(1)	Project	100	200	300	20
Total No. LCCS Credits					72

NOTE:

The Faculty reserves the right to change the order in which the modules are offered.