1. Introduction

Quality Management is increasingly recognised as an important discipline within a wide range of sectors. Opportunities exist for those who wish to develop their quality management and process improvement skills within their current professional discipline, as well as opportunities for those who seek a specialist quality management role.

2. Aims & Objectives

The aim of the programme is to enable those employed in a specific quality management role or other technical discipline to make a more effective contribution to their organisation, particularly in the field of continuous improvement of processes.

The main objective of the programme is to provide students with quality, organizational and people management skills and techniques to enable them to make a significant contribution to an organization’s quality policy.

3. 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.

4. Programme Requirements

Preference will be given to candidates with relevant work experience.

5. Programme Duration

The duration of the Graduate Programme should normally not exceed 4 years (8 semesters).

<table>
<thead>
<tr>
<th>Programme</th>
<th>Normal</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Master's:</td>
<td>4 Semesters</td>
<td>8 Semesters</td>
</tr>
<tr>
<td>Postgraduate Diploma:</td>
<td>4 Semesters</td>
<td>8 Semesters</td>
</tr>
<tr>
<td>Postgraduate Certificate</td>
<td>2 Semesters</td>
<td>8 Semesters</td>
</tr>
</tbody>
</table>

6. Credits per Semester – Minimum 3 Credits subject to Regulation 5.

7. Minimum Credits for Award of:

- Master’s Degree: 36
- Postgraduate Diploma: 24
- Postgraduate Certificate: 12
Breakdown as Follows

<table>
<thead>
<tr>
<th></th>
<th>(Minimum)</th>
<th></th>
<th>Electives/</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Core Taught</td>
<td>Dissertation</td>
<td>Optional Modules*</td>
</tr>
<tr>
<td>Core Taught Modules</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dissertation</td>
<td>9 Credits</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Optional Modules*</td>
<td>9 Credits</td>
<td>6 Credits</td>
<td>6 Credits</td>
</tr>
</tbody>
</table>

Master’s Award: 18 Credits
Postgraduate Diploma: 18 Credits (where applicable)
Postgraduate Certificate: 12 Credits

8. Assessment

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

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

Written examination of 3-hour duration and continuous assessment of 10% to 40% of total marks.

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

For a student to pass a module, a minimum of 30% should be attained in both of Continuous Assessment and Written Examination separately, with an overall total of a minimum of 40% in that module.

All modules carry equal weightage irrespective of levels.

The project is equivalent to 9 credits.

Submission Deadlines for project:

- 1st draft: end July of final year
- Final copy: Last working day of August of final year.

11. Planning

Students are required to submit at the end of Semester I a Plan of Study for their Whole Programme of Studies, indicating the list of Elective Modules and in which Semester each of them will be taken.

The University reserves the right not to offer a given Elective Module (if the critical number of students is not attained and/or for reasons of resource constraints).
### 12. List of Modules

#### CORE MODULES

<table>
<thead>
<tr>
<th>Module</th>
<th>Course Title</th>
<th>Hr/wk</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGG 6001</td>
<td>Foundation Statistics*</td>
<td>3+0</td>
<td>-</td>
</tr>
<tr>
<td>MECH 6101</td>
<td>Managing Quality</td>
<td>3+0</td>
<td>3</td>
</tr>
<tr>
<td>ENGG 6202</td>
<td>Research Methods</td>
<td>3+0</td>
<td>3</td>
</tr>
<tr>
<td>MECH 6201</td>
<td>Quality Systems &amp; Auditing</td>
<td>3+0</td>
<td>3</td>
</tr>
<tr>
<td>MECH 6302</td>
<td>Statistical Process Control (SPC)</td>
<td>3+0</td>
<td>3</td>
</tr>
<tr>
<td>MECH 6301</td>
<td>Quality costing</td>
<td>3+0</td>
<td>3</td>
</tr>
<tr>
<td>MGT 5212</td>
<td>Human Resources and Quality Management</td>
<td>3+0</td>
<td>3</td>
</tr>
<tr>
<td>ENGG 6000</td>
<td>Project</td>
<td></td>
<td>9</td>
</tr>
</tbody>
</table>

#### SPECIALISED ELECTIVES

<table>
<thead>
<tr>
<th>Module</th>
<th>Course Title</th>
<th>Hr/wk</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MECH 6409</td>
<td>Maintenance Management</td>
<td>3+0</td>
<td>3</td>
</tr>
<tr>
<td>ACT 5112</td>
<td>Project Economics and Finance</td>
<td>3+0</td>
<td>3</td>
</tr>
<tr>
<td>MECH 6306</td>
<td>Production and Operation</td>
<td>3+0</td>
<td>3</td>
</tr>
<tr>
<td>ENGG 6305</td>
<td>Procurement Management</td>
<td>3+0</td>
<td>3</td>
</tr>
<tr>
<td>MECH 6402</td>
<td>Advanced Manufacturing &amp; Measurement systems</td>
<td>3+0</td>
<td>3</td>
</tr>
</tbody>
</table>

#### GENERAL ELECTIVES

<table>
<thead>
<tr>
<th>Module</th>
<th>Course Title</th>
<th>Hr/wk</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSE 6005</td>
<td>Management Information Systems</td>
<td>3+0</td>
<td>3</td>
</tr>
<tr>
<td>CIVE 6102</td>
<td>Environmental Management I</td>
<td>3+0</td>
<td>3</td>
</tr>
<tr>
<td>MGT 6180</td>
<td>Managing Human Resources</td>
<td>3+0</td>
<td>3</td>
</tr>
<tr>
<td>ENGG 6410</td>
<td>Asset Management</td>
<td>3+0</td>
<td>3</td>
</tr>
<tr>
<td>MGT 5116</td>
<td>Business-to- Business Marketing</td>
<td>3+0</td>
<td>3</td>
</tr>
<tr>
<td>MGT 6211</td>
<td>Business Ethics and Corporate Governance</td>
<td>3+0</td>
<td>3</td>
</tr>
</tbody>
</table>

* The module ENGG 6001 Foundation Statistics must be satisfactorily completed for the award of the MSc Degree.
13. **Programme Plan - MSc Quality Management**

A proposed programme plan is shown below. The Faculty reserves the right to change the order in which the modules are offered.

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Core Modules</th>
<th>Semester 1</th>
<th>Semester 2</th>
<th>Semester 3</th>
<th>Semester 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Level 1)</td>
<td></td>
<td>ENGG 6001 Foundation Statistics*</td>
<td>MECH 6201 Quality Systems &amp; Auditing</td>
<td></td>
<td>Elective module (Specialised)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MECH 6101 Managing Quality</td>
<td>ENGG 6202 Research Methods</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>MGT 5212 Human Resources and Quality Management</td>
<td>MECH 6302 Statistical Process Control (SPC)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Each module will consist of 45 contact hours (this includes lectures, tutorials, seminars, workshops, external visits, etc.). The total contact (taught) hours of the programme therefore will be 405 hours. The Project will involve direct supervision by a member of academic staff and/or an external supervisor.

A minimum of 6 contact hours is scheduled per week (3 hours on weekdays and 3 hours on Saturday). However, candidates are expected to attend on a full-time basis (after 4.00 p.m. on a daily basis) for intensive modules taught in a period of two weeks by visiting lecturers.

*The module ENGG 6001 Foundation Statistics must be satisfactorily completed for the award of the MSc Degree.*
14. Outline Syllabus

**ACT 5112 - PROJECT ECONOMICS AND FINANCE**

**CIVE 6102 - ENVIRONMENTAL MANAGEMENT I**
Concept of sustainable development; Environmental management tools; EIA; EMS; Environmental legislation; Environmental audits; Waste audits; Risk assessment; Case-studies; Environmental problems in Mauritius; Economic Tools to encourage pollution control

**CSE 6005 - MANAGEMENT INFORMATION SYSTEMS**

**ENGG 6000 - PROJECT**
The candidate, in undertaking a project, is expected to demonstrate a strong ability to apply skills and techniques acquired during the programme to solve quality-related problems.

**ENGG 6001 - FOUNDATION STATISTICS**

**ENGG 6202 - RESEARCH METHODS**

**ENGG 6305 - PROCUREMENT MANAGEMENT**

**ENGG 6410 - ASSET MANAGEMENT**
Defining the position of asset management within the corporate business - Establishing an asset maintenance policy - Role of the asset manager - Selecting appropriate maintenance management strategies - Techniques for predicting and minimising operating costs - Choosing a suitable procurement option - Information management and feedback.
MECH 6101 - MANAGING QUALITY

MECH 6201 - QUALITY SYSTEMS & AUDITING
ISO 9000 QUALITY SYSTEMS – The requirements and guidance sections broken down into detail. The management perspective – the major role of management, the strategic implications, operational implementation. Problems outlined and discussed.

QUALITY SYSTEM PLANNING AND IMPLEMENTATION – documentation structures, breaking down barriers, communication, resource requirements, timescale etc.,

TYPES OF QUALITY AUDIT (INTERNAL/EXTERNAL) Audit Standards, Audit preparation and Planning / Conducting Audits and Review. Techniques for Auditing/Checklist for Auditors, Auditor Responsibilities, Nonconformities, surveillance etc.

The advent of self assessment systems. The development of ISO 9000 beyond the millennium. Its relationship with TQM.

MECH 6302 - STATISTICAL PROCESS CONTROL


THE QUALITY GURUS and their contribution to SPC. E. Deming: 94% rule. W. Shewart. K. Ishikawa : Seven SPC tools. G. Taguchi : Closeness to Target, The Quality Loss function, Concept of Control.

IMPLEMENTING SPC & TQM : Establishing a Control plan. Breakthrough Activities Applying the Deming Cycle. CASE STUDY & WORKSHOP.

MECH 6301 - QUALITY COSTING
MECH 6409 - MAINTENANCE MANAGEMENT

MECH 6306 - PRODUCTION AND OPERATIONS MANAGEMENT

MECH 6402 - ADVANCED MANUFACTURING AND MEASUREMENT SYSTEMS
Introduction to non-conventional machining, CAD system, basics of CNC machining, new tool materials. Precision Machining ( ECM, EDM, Laser cutting, Ultrasonic Machining, Water jet cutting), Introduction to nanotechnology, Introduction to the fundamentals science of measurements, Limits, Fits & Tolerance, Errors, Linear measurements, Angular measurements, Introduction to Surface roughness, roundness measurements, introduction to CMM.

MGT 5116 - BUSINESS-TO-BUSINESS MARKETING
The Industrial Marketing Environment; The nature of Industrial buying; The Interpersonal Dynamics of Industrial Buying behaviour; Industrial Marketing research; Industrial Market Segmentation; Target Marketing and Positioning; Product Development, Management and Strategy; Price Planning and Strategy; Promoting and selling the Industrial Product; Distributing the Industrial Product.

MGT 5212 - HUMAN RESOURCES AND QUALITY MANAGEMENT

MGT 6180 - MANAGING HUMAN RESOURCES
History, Evolution and Developments; Comparison between HRM and Personnel Management; D.Guest, Harvard models, et c. Culture and Change management in HRM; Strategic Human resource management. Tenets of HRM; Human Resource Strategy; Human resource Planning; Recruitment and Selection, Tenet of HRM- Human Resource Development; Training and Development; Performance Management; Management Development; Employee Development and Self development; career Development; Tenets of HRM; Employee Relations (ER); Perspectives in ER; Stakeholders in ER; ER Practices; Reward Management; International HRM; HRM and IT.
MGT 6211 - BUSINESS ETHICS AND CORPORATE GOVERNANCE
The ethical organisation; Corporate governance as a way of life; Teleology; Deontology; Ethical
formalism; Conception of equality; Moral versus relativistic dimensions; Cultural implications; Ethics
in business; Stakeholder theory; Personal v.s. corporate values; Bribery viewed by different ethical
philosophies; Reform strategies; Education and training in ethics; Economic and political reform;
Institutional reform and social empowerment.