

## MODULE DESCRIPTOR

### Module Title

Quality Improvement and Statistical Process Control

Reference	ENM619	Version	3
Created	February 2023	SCQF Level	SCQF 11
Approved	March 2018	SCQF Points	15
Amended	August 2023	ECTS Points	7.5

### Aims of Module

To enable the student to use statistical techniques for improving the quality of products and processes, and to provide the student with the ability to critically apply quality management principles.

### Learning Outcomes for Module

On completion of this module, students are expected to be able to:

- 1 Evaluate results obtained using statistical sampling and process control techniques.
- 2 Analyse data using experimental design and analysis techniques in the context of quality improvement.
- 3 Critically apply appropriate quality management concepts to organisational development and performance excellence.

### Indicative Module Content

Study of statistical techniques: design and analysis of experiments (including Taguchi methods), acceptance sampling regimes, control charts for variables and attributes, process capability and other statistical process control techniques. Use of relevant statistical software. Identification of process improvement strategies. The use of quality management methodologies for implementing continuous improvement, the context of ISO Standards, Lean quality management systems; building and sustaining quality and performance excellence.

### Module Delivery

This is a lecture-based course supplemented with tutorials, computer labs and student-centred learning.

### Indicative Student Workload

	Full Time	Part Time
Contact Hours	35	35
Non-Contact Hours	115	115
Placement/Work-Based Learning Experience [Notional] Hours	N/A	N/A
TOTAL	150	150
<i>Actual Placement hours for professional, statutory or regulatory body</i>		

**ASSESSMENT PLAN**

If a major/minor model is used and box is ticked, % weightings below are indicative only.

**Component 1**

Type: Examination Weighting: 100% Outcomes Assessed: 1, 2, 3  
 Description: Closed book examination.

**MODULE PERFORMANCE DESCRIPTOR****Explanatory Text**

Component 1 comprises 100% of the module grade. A minimum of Grade D is required to pass the module.

Module Grade	Minimum Requirements to achieve Module Grade:
<b>A</b>	A
<b>B</b>	B
<b>C</b>	C
<b>D</b>	D
<b>E</b>	E
<b>F</b>	F
<b>NS</b>	Non-submission of work by published deadline or non-attendance for examination

**Module Requirements**

Prerequisites for Module None.  
 Corequisites for module None.  
 Precluded Modules None.

**INDICATIVE BIBLIOGRAPHY**

- 1 MONTGOMERY, D.C.,. 2019. Introduction to Statistical Quality Control. 8th ed. Wiley.
- 2 KIRAN, D. R., 2016. Total Quality Management: Key Concepts and Case Studies. Elsevier.