Module Specification

Quality Control Systems

Version: 2025-26, v3.0, 06 May 2025

Contents

Part 1: Information

Module title: Quality Control Systems

Module code: UFMFXA-15-2

Level: Level 5

For implementation from: 2025-26

UWE credit rating: 15

ECTS credit rating: 7.5

College: College of Arts, Technology and Environment

School: CATE School of Engineering

Partner institutions: None

Field: Engineering, Design and Mathematics

Module type: Module

Pre-requisites: None

Excluded combinations: None

Co-requisites: None

Continuing professional development: No

Professional, statutory or regulatory body requirements: None

Part 2: Description

Overview: Quality assurance and improvement processes are an essential element of a modern manufacturing environment, designing and planning and ensuring that projects, goods, and services meet required standards and are fit for purpose.

In this module, students are familiarised with the principles and use of quality control techniques, static methods, quality assurance issues, and quality management

methods such as QA/QC, strategic total quality management (STQM), and Design for Six Sigma (DFSS).

Features: Not applicable

Educational aims: The aim of this module is to equip students with up-to-date methods for implementing quality control, quality assurance and quality management techniques within a modern manufacturing environment.

Outline syllabus: The importance of quality in design and planning, in the completed project, and in the production of goods and services will be covered. Topics are likely to include but not limited to:

Introduction to quality basics, definition of quality and major contributors to quality

Quality management and assurance processes.

Designing Quality Into Products and Services (QFD, DFSS, FMEA and FTA)

Quality Systems and QS Auditing (ISO9000)

Product, Process, and Materials Control

Quality Improvement Tools

Metrology, Inspection, Testing

Statistical Process Control and process capability

Design of experiments and analysis of variance using statistical software

Variable Control Charts and Control Charts for Attributes

Part 3: Teaching and learning methods

Teaching and learning methods: Scheduled learning: material will be delivered in whole cohort sessions and via on-line resources. The majority of the learning activities will take place on a combination of lectorials, discussion groups, case studies and 'hands on' use of tools and techniques that provide the practical knowledge to undertake a manufacturing setup evaluation and present improvement solutions.

Independent learning: includes hours engaged with essential reading, assignment preparation and completion etc.

Module Learning outcomes: On successful completion of this module students will achieve the following learning outcomes.

MO1 Apply the fundamental concepts of statistical process control and process capability to manufacturing setups

MO2 Evaluate the complexities of statistical analysis, software and control-chart interpretation for industrial scenarios.

MO3 Discuss the role of quality management systems and continuous improvement in the context of complex manufacturing problems

Hours to be allocated: 150

Contact hours:

Independent study/self-guided study = 114 hours

Face-to-face learning = 36 hours

Reading list: The reading list for this module can be accessed at readinglists.uwe.ac.uk via the following link https://rl.talis.com/3/uwe/lists/F2A648E2-4DCF-A5E4-8318-4D11F8E0BC71.html?lang=en-GB&login=1

Part 4: Assessment

Assessment strategy: The main sit strategy will be as follows:

An individual presentation and Q&A session are summative and assess the students'

understanding of quality control, statistical methods concepts and techniques, and the rationales they have applied in the industrial scenario.

The resit strategy will be as follows:

The resit will be the same as the first sit (with a different scenario)

Assessment tasks:

Presentation (First Sit)
Description: Presentation and oral examination (12 mins presentation + 8 minutes of questions)
Weighting: 100 %
Final assessment: Yes
Group work: No
Learning outcomes tested: MO1, MO2, MO3

Presentation (Resit)
Description: Presentation and oral examination (12 mins presentation + 8 minutes of questions)
Weighting: 100 %
Final assessment: Yes
Group work: No
Learning outcomes tested: MO1, MO2, MO3

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Mechanical Engineering with Manufacturing {Apprenticeship-UWE} [UCW] BEng (Hons) 2024-25

Mechanical Engineering with Manufacturing {Apprenticeship-UCW} [UCW] BEng (Hons) 2024-25

Mechanical Engineering and Technology (Manufacturing) {Foundation} [GCET] BEng (Hons) 2023-24

Mechanical Engineering and Technology (Manufacturing) {Foundation} [GCET] BEng (Hons) 2023-24

Mechanical Engineering and Technology (Manufacturing) {Foundation} [GCET] DipHE 2023-24