MSc in Quality

Value Stream Optimisation

Integrated Quality
This module facilitates a deep appreciation of quality from its metaphysical level to its day to day practise. It draws from the conventional sources of Standards, Gurus and Models as well as the broader emerging fields of appreciative systems and meaning making. The world is complex, quality is complex, and people are complex. We need an integrated approach, and balanced view to successfully navigate through this complexity.

Applied Project Management
Understand project management from a holistic balanced perspective. Appreciate the linkage between projects and organisational strategy. Appreciate both the technical and behavioural aspects of project management. Master practical skills of project implementation and understand why an approach will/will not work in a particular situational environment. Learn tools and techniques spanning the steps from defining the projects through to controlling the project using earned value. Theory of Constraints

Strategic Management
Provides comprehensive knowledge of strategy making, strategy transformation and implementation. Understand the relevance of strengthening a company’s resource complement and upgrading its competencies and competitive capabilities to match market realities and create competitive advantage. Assessing the readiness of an organisation to affect a transformation. Understand the infra-structural and implementation requirements in order to successfully steer the organisation towards the crafted strategy.

Transformational Change
Addresses the theory and practice of change in organisations. It is based on the strong linkage between quality methods and the implications for change both at an individual and organisational level. The subject matter embraces the theory and practice with emphasis on activity based learning and the required competencies for change agents in modern organisations.
Advanced Experimental Design

Apply the use of statistical techniques for optimising processes. Conduct two and three level fractional factorial experiments and analyse the resulting data. Plan, conduct and analyse experiments using Taguchi (static and dynamic responses) and Response Surface Methodology (RSM). Analyse multiple response experiments and interpret the results. Analyse and interpret data from experiments involving random effects models and nested designs. Use Minitab statistical software to plan, design experiments, analyse and interpret the resulting experimental data.

Research Methods

The Research Methods module is a pre-requisite course designed to assist you in completing your Research Thesis. Your major assignment on this module will be a research proposal which you will be required to complete during the semester. Your research proposal should demonstrate your ability to design a relevant programme of investigation, use advanced scientific skills to critically interpret existing knowledge and apply in new situations to solve problems within your field of study.

Some of the key topics addressed on this module are as follows: Critically apply appropriate research strategies. Review the current literature on your chosen topic and critically analyse research reports and data. Understand various research methods available and select an appropriate methodology for your research. Design a survey/questionnaire. Analyse qualitative and quantitative research data. Demonstrate the effective communication of research outcomes.

Research Thesis

Survey, summarise, present, explain and critically discuss current issues, knowledge and theory relating to an area of Quality Management & Technology using suitable referencing skills. Demonstrate the ability to plan, execute and monitor an individual research investigation with appropriate attention to the theoretical and practical aspects of the topic. Analyse, critically evaluate, present and discuss research outcomes in a logical and systematic manner, setting them in the context of previous research. Present a critical comparison of the strengths and failings of the research undertaken with respect to the strengths and failings of previous research. Produce a written report of their research and its conclusions that is appropriate to a Master degree level.

System Simulation Modelling & Analysis

Understand the fundamentals of simulation and the techniques for developing simulation models suitable for solving business, process and service problems. The use of simulation as a decision support tool. Translate a business or process problem into a simulation model. Formulate an appropriate and correct discrete event simulation model of a system at an appropriate levels of detail. Use of an Excel spreadsheet with add-ins, e.g. @Risk, to build and test simulation models. Use SIMUL8 to model and solve discrete event system simulation problems. Analyse and interpret the results of a simulation model.