

## **Module Synopsis – Bachelor of Engineering (Honours) Engineering Management (University of the West of Scotland)**

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### **SQA Level 9**

#### **Project Management (20 credits)**

Generic concepts e.g. characteristics of a project and project management, the stakeholder needs, project risks and procurement routes, project planning and control, communications, matrix organization, the management of time, earned value analysis, benchmarking, partnering, leadership and motivation required for a successful project.

#### **Engineering Management 1 (20 credits)**

This module deals in topic areas e.g. Intro Planning & Control, Measurement and SPC and Process System Selection and focuses these topics into a singular TQM approach. It reviews processes, layouts, systems for operations management and people behaviours within groups.

#### **Project Tool Box (20 credits)**

This module has been prepared to enable the student to select a project idea, undertake a feasibility study and prepare project comparisons and rankings. It then continues with the project plan, from initial research of the topic through to the financial justification and the conclusions, discussion and future work.

#### **Design Prototyping and testing (20 credits)**

The various types, applications and principles of prototypes will be introduced. Analytical prototypes and physical prototypes will be explained. Prototyping technologies will be discussed with exemplars. The use of 3D computer modeling, free-form fabrication will be discussed. The need for planning for prototypes will be discussed.

#### **H & S and Risk Assessment (20 credits)**

The module will cover the main reasons for establishing good occupational safety and health standards, including the moral, economic and legal background.

#### **Engineering Applications Project (20 credits)**

In this module students will be given a defined task to plan, complete, and document. It is an opportunity for students to acquire and apply the knowledge and skills required to efficiently undertake their major honours project in the final year. Students will be expected to undertake the project themselves.

## **SQA Level 10**

### **Advanced Project Management (20 credits)**

This module introduces the student to more in depth methods of controlling and managing projects including managing multiple projects with finite resources.

This includes reference to a range of more advanced project management tools and methodologies including spreadsheets, MS Project and in particular 'Prince 2'.

### **Engineering Management 2 (20 credits)**

This module is more in depth to the previous module as discussions and decisions are required at a higher level, far more strategic and more so involving service functions. Where Engineering Management 1 was predominately biased towards an small-medium enterprise, this module is applicable to a wider range of organisations.

### **Manufacturing Operations Management 2 (20 credits)**

Students are introduced to current OM approaches to manufacturing planning and control and the various business processes that orchestrate enterprise resources to fulfil customer/stakeholder demands and requirements.

Analysis and optimisation of these processes, is discussed and illustrated at manufacturing process design level.

### **Renewal Energy & Sustainability (20 credits)**

This module focuses on sustainability and combines a study of the major renewable energy systems. It considers the main scientific principles involved as well as the engineering applications.

Topics include renewable energy systems, pollution processes, energy accounting and recycling and air pollution

### **Final Year Project (40 credits)**

This is a 40 credit module. Individual project topics will normally arise from one of three sources:

- a) industrial or educational research interests of a staff;
- b) a field of practical interest identified by the student;
- c) an area of industrial relevance to the student's vocational training