

## MODULE SPECIFICATION FORM

|               |                          |        |          |              |           |
|---------------|--------------------------|--------|----------|--------------|-----------|
| Module Title: | <b>Quality Assurance</b> | Level: | <b>5</b> | Cedit Value: | <b>10</b> |
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| Module code:<br>(if known) | <b>ENG511</b> | Cost Centre: | <b>GAME</b> | JACS2<br>code: | <b>H150</b> |
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| Semester(s) in which to be offered: | <b>2</b> | With effect<br>from: | <b>July 2015</b> |
|-------------------------------------|----------|----------------------|------------------|

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| <b>Office use only:</b><br>To be completed by AQSU: | Date approved: | July 2015 |
|   | Date revised:  |           |
|   | Version No:    | 1         |

|               |                 |  |     |
|---------------|-----------------|--|-----|
| Existing/New: | <b>Existing</b> | Title of module being replaced (if any): | N/A |
|---------------|-----------------|--|-----|

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| Originating Academic area: | <b>Engineering and Applied Physics</b> | Module Leader: | <b>Martyn Jones</b> |
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| Module duration (total hours)            | 100 | <b>Status:</b><br>Free-standing 10-credit<br>component comprising second<br>half of ENG553 (Computer-based<br>Manufacturing and Quality<br>Assurance). |
| Scheduled learning and<br>teaching hours | 36  |  |
| Independent study hours                  | 64  |  |
| Placement hours                          | 0   |  |

|   |           |
|---|-----------|
| Percentage taught by Subjects other than originating Subject (please<br>name other Subjects): | <b>0%</b> |
|---|-----------|

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| <b>Programme(s) in which to be offered:</b>               | Pre-requisites per<br>programme<br>(between levels): | <b>None</b> |
| <b>Engineering European Programme</b> (Non Award Bearing) |  |             |

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| <b>Module Aims:</b>   |
| To develop an understanding of Quality Management Systems and to consider Quality Management Systems applications and control within an organisation. |

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| <b>Expected Learning Outcomes</b>  |
| <u>Knowledge and Understanding:</u><br>At the completion of this module, the student should be able to:      |
| 1. discuss the concept of quality as a management function.  |
| 2. demonstrate a working knowledge of a quality management system. <span style="float: right;">(KS 5)</span> |
| 3. assess and control the quality function within an organisation. <span style="float: right;">(KS 3)</span> |
| <u>Key skills for employability</u>  |
| 1. Written, oral and media communication skills,   |
| 2. Leadership, team working and networking skills  |
| 3. Opportunity, creativity and problem solving skills  |
| 4. Information technology skills and digital literacy  |
| 5. Information management skills   |
| 6. Research skills   |
| 7. Intercultural and sustainability skills   |
| 8. Career management skills  |
| 9. Learning to learn (managing personal and professional development, self management)                       |
| 10. Numeracy   |

**Assessment:**

Please indicate the type(s) of assessment (eg examination, oral, coursework, project) and the weighting of each (%). **Details of indicative assessment should also be included.**

Assessment is 100% in-course. Assessment is by means of a portfolio of written exercises covering all outcomes. It includes a case study, for example to analyse the quality monitoring process and the tolerance standards on a steel production line using six sigma control.

(This corresponds to 'Assessment 2' of ENG553.)

| Assessment number (use as appropriate) | Learning Outcomes met | Type of assessment | Weighting | Duration (if exam) | Word count (if coursework) |
|--|-----------------------|--------------------|-----------|--------------------|----------------------------|
| Assessment One:                        | 1, 2, 3               | Portfolio          | 100%      |                    | 2000                       |

**Learning and Teaching Strategies:**

The module will be presented to students through a specified series of lectures assisted by notes made available to the student before the start of each lecture (in hard copy format or, increasingly, via electronic media). Relevant video clips will be used to aid the learning process. Demonstrations will also be arranged to show the operation and set up of certain processes. Visits to local industries will demonstrate other processes including super-plastic forming and carbon fibre component manufacture. Investigative case studies will enhance the lectures.

**Syllabus outline:**

Systems approach to quality  
 Legal considerations. - Consumer Protection Act, Sale of Goods Act, etc..  
 Quality auditing - need, management, cost and evaluation  
 Quality function deployment  
 Acceptance sampling techniques and application of standards TSI6949  
 (ref BS 6000, BS 6001, BS 6002).  
 Statistical process control. - Poisson, binomial and normal distributions.  
 The work of UKAS  
 Quality cost models, including the PAF model and the Process model.

**Bibliography:**Essential Reading:

Dale, B. (2003) *Managing Quality*, Blackwell.

Recommended Reading:

British Standards BS EN ISO 9000:2000; BS 6000; BS 6001; BS 6002

European Standards TSI6949.

EHoyle, D. (2005) *ISO 9000 Quality Systems Handbook*, Butterworth-Heinemann Ltd.

Caplen, R. (1988) *A Practical Approach to Quality Control*, 5<sup>th</sup> Edn., Random House Business Books.

Vorley, G. & Tickle, F. (2001) *Principles and techniques of quality management*, 4<sup>th</sup> Edn., Quality Management & Training (Publications) Ltd.