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Module Code: 2MSE0031

Title of Module

Full Title: Quality Engineering

Short Title: Quality Engineering

MODULE

2MSE0031 (A 05/6)

Quality Engineering...

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Version: 1

Credit Points: 15

Level / ECTS Level: 2

First Offered: 1/9/2002 00-00-00

6. Home Department:

AAD

7. Departments(s) contributing to teaching:

9. Module Aims:

- * develop an understanding of a range of quality assurance procedures relating to manufacture
- * develop an understanding of a range of quality control procedure relating to manufacture

10a. Learning Outcomes: Knowledge and Understanding:

- * explain and illustrate the process of using quality techniques
- * select quality techniques for solving manufacturing problems

10b. Learning Outcomes: Skills and Attributes:

- * identify how continuous improvement can occur
- * use statistical process control techniques in the context of manufacturing
- * explain the need for quality in design to the manufacturing process
- * NB. In this context, a successful student is considered to be one who has achieved a grade B3 or above.

11. Module Content

11a Module Content:

This module covers the core principle of quality and its role in engineering. Traditional concepts of Right First Time and Quality costs are used as the foundation of the subject. Statistical Process Control, Failure Mode Effects Analysis and Quality Function Deployment are covered as principal subjects. These are supported with Quality

Management Systems and practices that combine with Total Quality management.

11b. Further details on how the learning outcomes of the module will be achieved:

This subject is taught with a variety of teaching methods. Lectures are used to introduce core material. This is further explored with tutorials, seminars and case studies and in-class exercises to highlight overlapping material.

Quality (10%)

Quality (Customer, user, product and manufacturing)

Quality Control

Quality Assurance

Quality Costs (PAF, BSI, Oakland)

British Standards Institute

Right First Time (Input, Converter, Output) (10%)

Statistical Process Control (SPC) (20%)

Overview relating statistics to manufacturing variability, X Bar R Charts, Attribute charts, R & R Studies, SPC as an important process

Failure Mode Effects Analysis (10%)

Procedures and implementation

Quality Function Deployment (10%)

Customer needs to process selection

Target setting

Quality Management Systems (10%)

BS EN ISO 9000

QS 9000/TS 16949

Quality Programme Practices (10%)

Implementation procedures

Supply Quality Assurance

Total Quality Management (20%)

TQM and QMS

Philosophies of Gurus (Deming, Juran & Crosby)

Total Quality Planning and Implementation

12. Language of Delivery:

English

13. Language of Assessment:

English

14. Assessment Details (Academic):

Coursework: 50

Exam: 50

Other: The assessment will typically include-

- Individual assignment
- One unseen examination

Both in-course assessment and unseen examination must be passed

Each assessment satisfies a selection of the learning outcomes

Assessment Notes:

15. Locations(s):

UH HATFIELD

16. Pre and Co-Requisite:

Pre-Requisite

Co-Req

Prohibited

17. Subject Board of Examiner/s:
BUS/MGMT/QUAL COURSES (AADE)

18. Comments

Recommended reading 19/03/2004

Price, F. Right first time, Gower, (1992)

Ledolter, J. and Burrill, C. Statistical quality control, Wiley, (1999)

Juran J., Juran's quality control handbook, 4th Ed., McGraw Hill, (1994)

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