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MODULE DESCRIPTOR

Module Title

Determination of Maintenance and Inspection Requirements for Asset Integrity Management

Reference	ENM310	Version	5
Created	January 2017	SCQF Level	SCQF 11
Approved	March 2015	SCQF Points	15
Amended	January 2017	ECTS Points	7.5

Aims of Module

Enable the student to identify, justify and apply the methodologies and techniques that are used to prioritise and determine maintenance and inspection requirements for the provision of Asset Integrity.

Learning Outcomes for Module

On completion of this module, students are expected to be able to:

- 1 Evaluate Asset Integrity and Reliability Management, and Inspection practises and techniques
- 2 Identify, define and critically review maintenance and inspection strategies.
- 3 Perform optimisation of an asset maintenance and inspection strategy using appropriate methodologies, and relevant records and data.

Indicative Module Content

Data and Information Systems: - Data collection and analysis to support optimisation of equipment maintenance/inspection strategy and equipment integrity. - Asset Performance Management Software Reliability and Integrity: - Identification and Quantification of Risk - Reliability Methodologies: RCM, TPM, FMEA and RCA - Reliability and Integrity Metrics and KPIs - Statistics and Statistical methods for Reliability including Weibull Analysis. Inspection: - Generic business processes of Inspection - Risk Based Inspection - Condition Monitoring techniques and application - Online monitoring - Instrumented System Inspection, SIL Levels Maintenance: - Development of Maintenance Strategy - Financial optimisation of maintenance tasks

Module Delivery

DISTANCE LEARNING: The module is delivered by online lectures, interactive forum discussions and directed self-study.

Indicative Student Workload

	Full Time	Part Time
Contact Hours	N/A	27
Non-Contact Hours	N/A	123
Placement/Work-Based Learning Experience [Notional] Hours	N/A	N/A
TOTAL	N/A	150
Actual Placement hours for professional, statutory or regulatory body		

ASSESSMENT PLAN

If a major/minor model is used and box is ticked, % weightings below are indicative only.

Component 1

Type:	Coursework	Weighting:	50%	Outcomes Assessed:	3
Description:	The coursework consists of a case study for the development of best practice of an equipment's maintenance/inspection strategy using practical application of Risk and Reliability methodologies.				

Component 2

Type:	Examination	Weighting:	50%	Outcomes Assessed:	1, 2
Description:	The examination is closed book.				

MODULE PERFORMANCE DESCRIPTOR**Explanatory Text**

In order to pass the module, students should achieve a mark of at least 40% in each component (which has a weighting of 30% or more) and an overall grade of D or greater.

Module Grade	Minimum Requirements to achieve Module Grade:
A	Greater than or equal to 70%
B	In the range 60% to 69%
C	In the range 55% to 59%
D	In the range 50% to 54%
E	In the range 40% to 49%
F	Less than 40%
NS	Non-submission of work by published deadline or non-attendance for examination

Module Requirements

Prerequisites for Module	Normally a UK honours degree, or equivalent, in Engineering or related discipline at class 2.2 or above and proficiency in English language for academic purposes (IELTS minimum score of 6.5 or equivalent).
Corequisites for module	None.
Precluded Modules	None.

INDICATIVE BIBLIOGRAPHY

- 1 Physical asset management handbook - Mitchell, John Steward, Hickman, John E., Amadi-Echendu, Joe E., 2007
- 2 European Standard EN 13306:2001 'Maintenance Terminology'.
- 3 Making Common Sense Common Practise, Ron Moore, Elsevier Books. (Available as RGU ebook)
- 4 New Faith in Maintenance, Mark Haarman and Guy Delahay, www.mainnovation.com.
- 5 HEALTH AND SAFETY EXECUTIVE, 2014, Safety of Pressure Systems: Pressure Systems Safety Regulations 2000. Approved Code of Practice and Guidelines on Regulations. 2nd Edition. London: HSE. (Available from HSE website)
- 6 Introduction to Probability and Statistics for Engineers and Scientists by Sheldon Ross, 5th Edition. (Available as RGU ebook)