MODULE DESCRIPTOR

Module Title

Safety, Risk and Principles of Engineering Management

Reference	EN4804	Version	1
Created	September 2023	SCQF Level	SCQF 10
Approved	September 2023	SCQF Points	15
Amended		ECTS Points	7.5

Aims of Module

To provide the student with the ability to identify and manage risk, safety, security and environmental issues in industrial contexts, apply quality management strategies, and discuss issues pertaining to equality, inclusion and diversity.

Learning Outcomes for Module

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

1	Critique the management of safety, risk and associated security considerations.
2	Execute methodologies for the evaluation and reduction of risk.
3	Examine systems using methods for identifying possible causes of component/system failure and resultant hazards.
4	Critically discuss the role of quality management and the importance of evaluating environmental impact in industrial contexts.
5	Communicate awareness of the responsibilities and benefits associated with adopting an inclusive approach within the workplace.

Indicative Module Content

Causes and outcomes of industrial accidents. Safety and environmental management, including relevant security issues. Health and safety issues and legislation. Hazard identification, evaluation and control: Bow tie, Fault Tree and FMEA analysis. Risk evaluation and analysis. ALARP principle. Safety integrity levels. Human factors, corporate responsibility, safety culture. Role of quality management, continuous improvement, strategies for process improvement. Responsibilities and importance of supporting equality, inclusion and diversity, including relevant legislation.

Module Delivery

This is a lecture-based course supplemented with tutorials and student-centred learning.

Module Ref:	EN4804 v1

Indicative Student Workload	Full Time	Part Time
Contact Hours	40	40
Non-Contact Hours	110	110
Placement/Work-Based Learning Experience [Notional] Hours	N/A	N/A
TOTAL	150	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:	100%	Outcomes Assessed:	1, 2, 3, 4, 5
Description:	Report.				

MODULE PERFORMANCE DESCRIPTOR

Explanatory Text

Component 1 comprises 100% of the module grade. A minimum Grade D is required to pass the module.

Module Grade	Minimum Requirements to achieve Module Grade:
A	A
B	B
C	C
D	C
E	E
F	F
NS	Non-submission of work by published deadline or non-attendance for examination

Module Requirements

Prerequisites for Module	None.
Corequisites for module	None.
Precluded Modules	None.

INDICATIVE BIBLIOGRAPHY

1. SMITH, D. J., SIMPSON, K. G. L., 2020. The Safety Critical Systems Handbook A Straightforward Guide to Functional Safety: IEC 61508 (2010 Edition), IEC 61511 (2016 Edition) and Related Guidance Including Machinery and Other Industrial Sections. 5th ed. London : Butterworth-Heinemann.
2. THOMSON, J. R., 2015. High integrity systems and safety management in hazardous industries. Oxford : Elsevier.
3. OSTROM, L. T., WILHELMSEN, C. A., 2019. Risk Assessment: Tools, Techniques, and Their Applications. Newark: John Wiley & Sons, Incorporated.
4. KIRAN, D. R., 2016. Total Quality Management: Key Concepts and Case Studies. Elsevier.
5. VELLANI, K. H., 2019. Strategic security management : a risk assessment guide for decision makers. 2ND ED. Boca Raton: CRC Press.
6. TAYLOR, A., ALEXANDER, D., FINCH, A., SUTTON, D., 2020. Information Security Management Principles. 2nd ed. Swindon: BCS.
7. KUMRA, S., MANFREDI, S., 2012. Managing equality and diversity : theory and practice. Oxford : Oxford University Press.