Engineered Risk Control Systems (Oil and Gas)

Module Information

2022.01, Approved

Summary Information

Module Code	7581RTC
Formal Module Title	Engineered Risk Control Systems (Oil and Gas)
Owning School	Engineering
Career	Postgraduate Taught
Credits	10
Academic level	FHEQ Level 7
Grading Schema	50

Teaching Responsibility

LJMU Schools involved in Delivery
Engineering

Learning Methods

Learning Method Type	Hours
Lecture	8
Online	1
Tutorial	8

Module Offering(s)

Display Name	Location	Start Month	Duration Number Duration Unit
SEP-PAR	PAR	September	12 Weeks

Aims and Outcomes

Aims	To provide an understanding of engineered risk control systems (ERCSs) and the need for Performance Standards and Technical Integrity Verification Schemes.

After completing the module the student should be able to:

Learning Outcomes

Code	Number	Description
MLO1	1	Analyse process plant to logically deduce relevant Engineered Risk Control Systems (ERCSs).
MLO2	2	Devise performance requirements/standards of ERCSs.
MLO3	3	Illustrate how ERCSs contribute to sustaining technical integrity over the lifetime of an asset.

Module Content

Outline Syllabus	Introduction to Engineered Risk Control Systems (ERCSs) -Major accidents due to failure of ERCSs-Examples of ERC systemsIdentification of ERCSs-Choice of approaches-Barrier analysisCriticality Ranking-Criteria and ranking methodsPerformance Standards-FARSI (Functionality, Availability, Reliability, Survivability & Interdependence) requirements-Management of changePerformance Assurance & Verification-Performance assurance during projects and operations-Managing failures and degradation-Verification and written schemesPerformance Monitoring-Leading & lagging KPIsIntegrity Throughout Facility Lifetime-Design, technical and operating integrity Summary and Close-out
Module Overview	
Additional Information	The purpose of this module is to provide an understanding of engineered barriers for controlling risk in the oil, gas and petrochemical sectors, and the need for setting performance requirements, as well as assuring and verifying actual performance throughout an asset's lifecycle.Assessment is in the form of an essay combined with activities (e.g. exercises, discussions, etc.).The module is delivered via distance learning, described as follows:Lecture (using slides and slide notes): Online self-studyTutorial/Activities (Exercises and reviews): Online activities with teacher feedback, and virtual classroomsTutor-supported Online: Tutor feedback for activities, virtual classrooms and email support

Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping
Essay	Essay	95	0	MLO2, MLO3
Test	Test	5	0	MLO1

Module Contacts

Module Leader

Contact Name	Applies to all offerings	Offerings
Ben Matellini	Yes	N/A

Partner Module Team

Contact Name	Applies to all offerings	Offerings