

## Module Information

2022.01, Approved

### Summary Information

Module Code	7589RTC
Formal Module Title	Oil and Gas and Process Industry Quantitative Risk Assessment (QRA)
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 enable students to understand and apply QRA techniques with particular relevance to the oil & gas and process industries.
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**After completing the module the student should be able to:**

### Learning Outcomes

Code	Number	Description
MLO1	1	Design QRA models incorporating appropriate input data and assumptions
MLO2	2	Use QRA to analyse the risk to personnel
MLO3	3	Compare QRA results with criteria and use to devise and evaluate potential risk reduction measures

### Module Content

Outline Syllabus	Introduction to the module Introduction to QRA Identify Release Scenarios and Hazards Frequency Assessment Event Trees Consequence Modelling I – Immediate Fatalities Consequence Modelling II – Time Dependent Effects Risk Analysis Non-Process Hazards Risk Criteria Sensitivity Studies Software for QRA Conclusions and Close Out
Module Overview	
Additional Information	The purpose of this module is to enable students to understand and apply QRA techniques with particular relevance to the oil & gas and process industries. Students will be given an opportunity to conduct QRA for example oil & gas / process facilities. The module also covers risk criteria, application of the ALARP principle, sensitivity analysis and cost benefit analysis. 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-study Tutorial/Activities (Exercises and reviews): Online activities with teacher feedback, and virtual classrooms Tutor-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	MLO1, MLO3
Test	Test	5	0	MLO2

### 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