

Liverpool John Moores University

Title: Environmental Risk Assessment
Status: Definitive
Code: **7532RSKDL** (118800)
Version Start Date: 01-08-2019

Owning School/Faculty: Maritime and Mechanical Engineering
Teaching School/Faculty: Maritime and Mechanical Engineering

Team	Leader
Alan Wall	Y

Academic Level: FHEQ7
Credit Value: 10
Total Delivered Hours: 16
Total Learning Hours: 100
Private Study: 84

Delivery Options

Course typically offered: Runs Twice - S1 & S2

Component	Contact Hours
Lecture	10
Tutorial	6

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Essay	Essay		100	

Aims

To give students an awareness and understanding of approaches to environmental risk assessment

Learning Outcomes

After completing the module the student should be able to:

- 1 Critique environmental regulatory styles
- 2 Discuss and illustrate the similarities and differences between environmental and safety risk assessments
- 3 Evaluate methods and models available for environmental consequence modelling

Learning Outcomes of Assessments

The assessment item list is assessed via the learning outcomes listed:

Essay	1	2	3
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Outline Syllabus

Introduction and Background

- How environmental risk assessments lagged behind (and somewhat independently) of safety assessments*
 - o Key players (individuals and organisations)*
 - o Key milestones (political and social)*
 - o Key UK legislative drivers*
- Risk (definitions, consequences, probabilities, criteria, F-N)*
 - o With emphasis on environmental risks but comparing with safety approaches*
- Risk assessment process (why things go wrong? how badly? when? what next?)*
 - o Generic approaches (common with safety hazard identification)*
 - o Extension of generic approaches to the assessment of environmental risks*

Environmental Risk Assessments

- Hazard identification*
- Environmental data , targets and criteria (what should / could be used, where can the information be found)*
- Environmental Consequence Models*
 - o Air dispersion*
 - o Water dispersion*
 - o Ground / groundwater modelling*

Role of Environmental Risk Assessment in Decision making process

- Areas of application ... EIA, BAT, BPEO, BPM, land-use planning etc.*
- Discussion of problematic technical areas (data, models, criteria)*
- Role of technical information in the decision making process (dealing with uncertainty, various stakeholders, role of value judgements in our understanding / perception of risk)*

Module conclusions and close out

Exercises will address:

- Environmental hazard identification*
- Qualitative environmental risk assessment (hazard identification, assessment of likelihood, selection of criteria, assessment of risk)*
- Use of simplistic consequence models (NRPB-R91, PRAIRIE, groundwater model)*
- Selection of likelihood data*

Emphasis will be on UK approaches and applications but comparison will be drawn with international approaches and best practice.

Learning Activities

A combination of slides and notes, exercises, discussions, interactive web activities and supported self study. Formative assessment by online test.

Notes

The main aim of this module is to give students an awareness and understanding of environmental risk assessment, including some of the main areas where students might encounter the need to undertake an environmental risk assessment and how approaches to undertaking an environmental risk assessment compare with safety risk assessments.

Some of the ways in which environmental consequences are assessed will be considered, allowing students to judge the appropriateness or otherwise of some commonly encountered models.

The assessment for this module is an essay.