

Liverpool John Moores University

Title: Hazard and Operability (HAZOP) Study
Status: Definitive
Code: **7083RTC** (127351)
Version Start Date: 01-08-2021

Owning School/Faculty: Engineering
Teaching School/Faculty: Engineering

Team	Leader
Ben Matellini	Y

Academic Level: FHEQ7
Credit Value: 10
Total Delivered Hours: 16.5
Total Learning Hours: 100
Private Study: 83.5

Delivery Options

Course typically offered: Semester 2

Component	Contact Hours
Lecture	8
Online	.5
Tutorial	8

Grading Basis: 50 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Essay	AS1	An essay question comprising several component parts, based around a case study, up to 2,500 words long.	95	
Test	AS2	Individual and group activities e. g. quiz, forum.	5	

Aims

To enable students to understand the uses, application and limitations of HAZOP study methodology. To prepare students for participating in HAZOPs.

Learning Outcomes

After completing the module the student should be able to:

- 1 Critically review the HAZOP technique and examples of output
- 2 Analyse how the HAZOP technique can be applied at the different stages of a project's lifecycle such as FEED, detailed design, revalidation and decommissioning
- 3 Prepare for a HAZOP Workshop, determine the skills and actions necessary to lead a HAZOP and how to generate a HAZOP report

Learning Outcomes of Assessments

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

Essay	1	2
Test	3	

Outline Syllabus

Introduction to risk assessment
Basic engineering terminology
Process safety incidents – lessons learnt
HAZOP - what, when, how
HAZOP - guidewords and parameters
HAZOP - nodding
HAZOP - teams, roles and responsibilities
HAZOP - recording methods and software
Overview of the LOPA technique
Major HAZOP studies
Minor modification studies
Common failings in HAZOPs
Limitations of HAZOP technique
Leading HAZOP teams
HAZOP reporting and close-out
Other forms of HAZOP – of procedures, batch operations

Learning Activities

A combination of lectures, exercises and supported self study.

Notes

The purpose of this module is for students to gain an understanding of the technique, application and limitations of the HAZOP study methodology. This module does not provide detailed HAZOP facilitator training but does cover the skills needed and the

work that the facilitator must do as part of the HAZOP Study.

The methodology will be analysed, definitions used within the HAZOP methodology will be discussed and students will have the opportunity to practise the technique. The students will critique example HAZOPS and critically review HAZOP recording methods. Team roles and responsibilities will be analysed, as will the management of HAZOP teams and the facilitation of HAZOP studies.

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