

Hazard and Operability (HAZOP) Study

Module Information

2022.01, Approved

Summary Information

Module Code	7083RTC
Formal Module Title	Hazard and Operability (HAZOP) Study
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
JAN-PAR	PAR	January	12 Weeks

Aims and Outcomes

Aims	To enable students to understand the uses, application and limitations of HAZOP study methodology. To prepare students for participating in HAZOPs.
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After completing the module the student should be able to:

Learning Outcomes

Code	Number	Description
MLO1	1	Critically review the HAZOP technique and examples of output
MLO2	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
MLO3	3	Prepare for a HAZOP Workshop, determine the skills and actions necessary to lead a HAZOP and how to generate a HAZOP report

Module Content

Outline Syllabus	Introduction to risk assessment Basic engineering terminology Process safety incidents – lessons learnt HAZOP - what, when, how HAZOP - guidewords and parameters HAZOP - noding 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
Module Overview	
Additional Information	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. In this module, the knowledge learning outcomes are K1, K2, the skills learning outcomes are S1, S2, S5 and the behaviours learning outcomes are B1, B2, B3 and B4.

Assessments

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

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
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