

Physical Effects Modelling

Module Information

2022.01, Approved

Summary Information

Module Code	7091RTC
Formal Module Title	Physical Effects Modelling
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
APR-PAR	PAR	April	12 Weeks

Aims and Outcomes

Aims	To enable students to categorise the range of hazardous physical effects that can occur in a given situation, assess the impact of the different physical effects, and discuss the uses and limitations of physical effect modelling.
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After completing the module the student should be able to:

Learning Outcomes

Code	Number	Description
MLO1	1	Analyse an industrial plant/installation to determine expected physical effects in the event of an incident.
MLO2	2	Evaluate, by applying physical effects modelling techniques, how these physical effects affect people and plant.
MLO3	3	Justify which of the available modelling techniques/software is appropriate to analyse physical effects in different circumstances, whilst understanding the limitations of these techniques.

Module Content

Outline Syllabus	Introduction to physical effects modelling – what are physical effects and why model them? Source term release and discharge calculation: Dispersion analysis Fire modelling Explosion modelling Subsea releases / oil dispersion. Human and plant vulnerability to physical effects Commercial and public domain software tools.
Module Overview	
Additional Information	The aim of this module is to enable students to understand the range of hazardous physical effects that can occur, an overview of human and equipment vulnerability to physical effects, and the uses and limitations of physical effect modelling. This includes an introduction to physical effects modelling and the opportunity for some hands-on practice of physical effects calculations. 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
Reflection	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