



<b>Form: Course Syllabus</b>	<b>Form Number</b>	EXC-01-02-02A
	<b>Issue Number and Date</b>	2963/2022/24/3/2 5/12/2022
	<b>Number and Date of Revision or Modification</b>	2/(10/12/2023)
	<b>Deans Council Approval Decision Number</b>	50/2023
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	<b>Number of Pages</b>	06

1.	<b>Course Title</b>	<b>Fire, Explosion, and Physical Effects Modelling</b>
2.	<b>Course Number</b>	<b>0905706</b>
3.	<b>Credit Hours (Theory, Practical)</b>	(3,0)
	<b>Contact Hours (Theory, Practical)</b>	(3,0)
4.	<b>Prerequisites/ Corequisites</b>	-
5.	<b>Program Title</b>	M.Sc. of Process Safety Engineering and Intelligent Systems
6.	<b>Program Code</b>	07
7.	<b>School/ Center</b>	School of Engineering
8.	<b>Department</b>	Department of Chemical Engineering
9.	<b>Course Level</b>	Master
10.	<b>Year of Study and Semester (s)</b>	
11.	<b>Other Department(s) Involved in Teaching the Course</b>	
12.	<b>Main Learning Language</b>	English
13.	<b>Learning Types</b>	<input checked="" type="checkbox"/> Face to face learning <input type="checkbox"/> Blended <input type="checkbox"/> Fully online
14.	<b>Online Platforms(s)</b>	<input type="checkbox"/> Moodle <input type="checkbox"/> Microsoft Teams
15.	<b>Issuing Date</b>	
16.	<b>Revision Date</b>	

**17. Course Coordinator:**

Name:	Contact hours:
Office number:	Phone number:
Email:	



### 18. Other Instructors:

Name:

Office number:

Phone number:

Email:

Contact hours:

Name:

Office number:

Phone number:

Email:

Contact hours:

### 19. Course Description:

As stated in the approved study plan.

This course explores fire, explosion, and dispersion hazards in process safety, integrating hazard analysis with physical effects modelling. Topics include source term release, gas dispersion, fire dynamics (jet, pool, flash fires), and explosion modelling (deflagrations, detonations, BLEVE, VCE). It covers human and structural vulnerability, fire protection strategies, and the use of commercial modelling tools (e.g., PHAST, FLACS). Emphasis is placed on interpreting modelling results for risk mitigation and emergency response. Case studies provide practical applications of modelling in industrial safety.

### 20. Program Intended Learning Outcomes: (To be used in designing the matrix linking the intended learning outcomes of the course with the intended learning outcomes of the program)

- 1.
- 2.
- 3.
- 4.



**21. Course Intended Learning Outcomes:** (Upon completion of the course, the student will be able to achieve the following intended learning outcomes)

- 1.
- 2.
- 3.
- 4.

Course ILOs	The learning levels to be achieved					
	Remembering	Understanding	Applying	Analysing	evaluating	Creating

**22. The matrix linking the intended learning outcomes of the course with the intended learning outcomes of the program:**

Program ILOs	ILO (1)	ILO (2)	ILO (3)	ILO (4)	ILO (5)
Course ILOs					
1					
2					
3					
4					



5					
6					
7					
8					

### 23. Topic Outline and Schedule:

Week	Lecture	Topic	ILO/s Linked to the Topic	Learning Types (Face to Face/ Blended/ Fully Online)	Platform Used	Synchronous / Asynchronous Lecturing	Evaluation Methods	Learning Resources
1	1.1							
	1.2							
	1.3							
2	2.1							
	2.2							
	2.3							
3	3.1							
	3.2							
	3.3							
4	4.1							
	4.2							
	4.3							
5	5.1							
	5.2							
	5.3							
6	6.1							
	6.2							
	6.3							
7	7.1							
	7.2							
	7.3							
8	8.1							
	8.2							



	8.3							
9	9.1							
	9.2							
	9.3							
	9.3							
10	10.1							
	10.2							
	10.3							
11	11.1							
	11.2							
	11.3							
12	12.1							
	12.2							
	12.3							
13	13.1							
	13.2							
	13.3							
14	14.1							
	14.2							
	14.3							
15	15.1							
	15.2							
	15.3							

#### 24. Evaluation Methods:

Opportunities to demonstrate achievement of the ILOs are provided through the following assessment methods and requirements:

Evaluation Activity	Mark	Topic(s)	ILO/s Linked to the Evaluation activity	Period (Week)	Platform

#### 25. Course Requirements:



(e.g.: students should have a computer, internet connection, webcam, account on a specific software/platform...etc.):

## 26. Course Policies:

- A- Attendance policies:
- B- Absences from exams and submitting assignments on time:
- C- Health and safety procedures:
- D- Honesty policy regarding cheating, plagiarism, misbehavior:
- E- Grading policy:
- F- Available university services that support achievement in the course:

## 27. References:

- A- Required book(s), assigned reading and audio-visuals:
- B- Recommended books, materials, and media:

## 28. Additional information:

Name of the Instructor or the Course Coordinator:	Signature:	Date:
.....	.....	.....
Name of the Head of Quality Assurance Committee/ Department	Signature:	Date:
.....	.....	.....
Name of the Head of Department	Signature:	Date:
.....	.....	.....
Name of the Head of Quality Assurance Committee/ School or Center	Signature:	Date:
.....	.....	.....
Name of the Dean or the Director	Signature:	Date:
.....	.....	.....