

**UNIVERSITY OF CENTRAL LANCASHIRE**

**Programme Specification**

This Programme Specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided.

*Sources of information on the programme can be found in Section 17*

<b>1. Awarding Institution / Body</b>	University of Central Lancashire
<b>2. Teaching Institution and Location of Delivery</b>	Year 1-4: International College of Engineering and Management, Oman  Year 4: ICEM and UCLan Preston
<b>3. University School/Centre</b>	School of Engineering
<b>4. External Accreditation</b>	Institution of Fire Engineers
<b>5. Title of Final Award</b>	BEng (Honours) Fire Safety (Engineering)
<b>6. Modes of Attendance offered</b>	Full Time-4 years,  Full Time with Sandwich year- 5 years  Part Time – 6 years
<b>7. UCAS Code 7b. JACS Code</b>	N/A  H121/100183
<b>8. Relevant Subject Benchmarking Group(s)</b>	None specific to Fire Safety, but developed with reference to:  Building and Surveying / Engineering
<b>9. Other external influences</b>	Institution of Fire Engineers  Energy Institute  National Fire Protection Association  International Fire Service Accreditation Congress

<b>10. Date of production/revision of this form</b>	June 2022  <i>Considered as part of SoE PR March 2019 – no changes required</i>
<b>11. Aims of the Programme</b>	
<ul style="list-style-type: none"> <li>• To develop expertise in the application of scientific, engineering and technological principles and tools to resolve design problems in fire and fire safety applications.</li> </ul>	
<ul style="list-style-type: none"> <li>• To produce graduates with the ability to command and manage fire safety operations</li> </ul>	
<ul style="list-style-type: none"> <li>• To provide the underpinning Science and Technology knowledge related to fire safety</li> </ul>	
<ul style="list-style-type: none"> <li>• To enable graduates to assess risk and devise protection strategies as they relate to fire safety</li> </ul>	
<ul style="list-style-type: none"> <li>• To produce resourceful, competent, clear thinking graduates with a range of skills and experience relevant to modern industry and commerce and in particular to develop a range of competences and underpinning knowledge for practising professionals in the field of Fire Safety</li> </ul>	
<ul style="list-style-type: none"> <li>• To enable the graduates to apply their knowledge, understanding and skills to realistic situations and particularly in the context of the GCC region.</li> </ul>	
<ul style="list-style-type: none"> <li>• To develop skills in communication, independent study, team working, problem solving, management and critical thinking which will equip graduates for the world of work and lifelong learning.</li> </ul>	

<b>12. Learning Outcomes, Teaching, Learning and Assessment Methods</b> <b>(The student should be able to:)</b>
<b>A. Knowledge and Understanding</b>
<p>A1. Demonstrate knowledge of the main concepts and principles that underpin fire safety engineering and their application in the workplace</p> <p>A2. Apply the fundamental concepts of fire safety engineering to enable the generation and evaluation of alternative solutions to solve related design problems;</p> <p>A3. Evaluate the interrelationships between the professional inputs into fire engineering and fire engineered project solutions with respect to all applicable managerial, legal and social parameters</p> <p>A4. Apply and integrate knowledge and understanding from a variety of engineering disciplines into the context of fire safety engineering</p> <p>A5. Demonstrate the capability for independent and lifelong learning in a professional career</p>
<b>Teaching and Learning Methods</b>
Traditional Lectures often followed by directed self-study; Seminars/tutorials; Laboratory activities; Lectures and demonstrations from practising professionals; Project and investigative work; Group discussions.
<b>Assessment methods</b>
Written assessments; Examinations; Technical Reports; Case study/Scenario based analysis.
<b>B. Subject-specific skills</b>
<p>B1. Analyse fire risk and protection needs for a range of applications, evaluate a range of strategies and implement solutions to meet these needs.</p> <p>B2. Evaluate whether design solutions integrate social, legal, engineering and technical requirements;</p> <p>B3. Evaluate managerial responsibility, including operational, financial and legal considerations in private industry and the parallel public sector;</p> <p>B4. Formulate and produce creative and innovative technical solutions to fire safety problems by applying design and engineering principles to real situations.</p> <p>B5. Independently plan and execute a research project in fire safety engineering.</p>
<b>Teaching and Learning Methods</b>
Traditional Lectures often followed by directed self-study; Seminars/tutorials; Laboratory activities; Practical/Competency based activities; Lectures and demonstrations from practising professionals; Directed project and investigative work both individually and in groups; Group discussions.
<b>Assessment methods</b>
Group and individual presentations; Mini projects; Reports; Examinations; Assignments; Laboratory investigations; Case study/Scenario based analysis; Competency tests.
<b>C. Thinking Skills</b>
<p>C1. Critically evaluate standard practice, and apply professional judgment in making recommendations and solving problems for future best practise</p> <p>C2. Identify and analyse broadly defined problems, evaluate possible optional strategies, design and optimise appropriate solutions.</p>

- C3. Select and apply appropriate problem solution skills in the processes of analysis, synthesis, evaluation and summarisation of ideas and information and the proposal of solutions;
- C4. Select, collate, interpret and evaluate information from a range of sources.

**Teaching and Learning Methods**

Traditional Lectures often followed by directed self-study; Seminars/tutorials; Laboratory activities; Lectures and demonstrations from practising professionals; Directed project and investigative work both individually and in groups; Group discussions.

**Assessment methods**

Written assessments; Integrated assignments; Examinations; Technical Reports; Presentations; Case study/Scenario based analysis

**D. Other skills relevant to employability and personal development**

- D1. Research and evaluate a wide range of sources of information from text books, journals, the media, CD Rom, newspapers, internet, technical indexes, catalogues, Standards, case law.
- D2. Complete reports in a succinct and coherent format, and conduct and present individual research projects.
- D3. Work independently and within a team.
- D4. Communicate appropriately to a variety of audiences using a range of formats and approaches.
- D5. Identify and work towards targets for personal, academic and professional development.
- D6. Use IT literacy including Computational Fluid Dynamics

**Teaching and Learning Methods**

Traditional Lectures often followed by directed self-study; Seminars/tutorials; Laboratory activities; Practical/Competency based activities; Lectures and demonstrations from practising professionals; Directed project and investigative work both individually and in groups; Group discussions.

**Assessment methods**

Reports, Presentations, Working in teams, Integrated assignments, Mini projects.

13. Programme Structures*				14. Awards and Credits*
Level	Module Code	Module Title	Credit rating	
Level 6	FV3001	Enclosure Fire Dynamics	20	<b>BEng (Honours) Fire Safety (Engineering)</b>  Requires 480 credits with 360 credits at Stage 2; including a minimum of 480 credits at level 4 or above, 360 credits at level 5 or above, and 180 credits at level 6 or above.  Students who successfully complete OM3000 will receive the award with Industrial Placement.
	FV3002	Fire Protection Engineering	20	
	FV3004	Fire Investigation	20	
	FV3102	Probabilistic Risk Analysis	20	
	FV3201	Engineering Design Project	20	
	FV3900	Engineering Dissertation	20	
Level 5/6	OM3022	Research Methods and Statistics	20	<b>Advanced Diploma in Fire Safety (Engineering)</b>  Requires 360 credits with 240 credits at stage 2; including a minimum of 360 credits at level 4 or above, 240 credits at level 5 or above, and 60 credits at level 6 or above.  Students who successfully complete OM1040 will receive the award with Industrial Experience
	OM2055	Personal and Professional Development 2	20	
	OM2023	Fire Safety in Buildings	20	
	OM3011	Disaster Mitigation and Emergency Management	20	
	OM3025	Design for Fire Safety 2	20	
	OM3024	Fire Modelling and Smoke Control in Buildings	20	
	OM3000	Industrial Placement (Option)	120 notional credits	
Level 5	OM2029	Fire Science	20	<b>Diploma of Higher Education in Fire Safety (Engineering)</b>  Requires 240 credits with 120 credits at stage 2; including a minimum of 240 credits at Level 4 or above, and 120 credits at Level 5 or above.  Students who successfully complete OM1040 will receive the award with Industrial Experience
	OM2018	Fire Engineering Science	20	
	OM2074	Safety in Oil and Gas Industries	20	
	OM2024	Mathematics 1	20	
	OM2025	Design for Fire Safety 1	20	
	OM2054	Professional Development and Entrepreneurship	20	
	OM1040	Industrial Experience (Option)	20 notional credits	

Level 4	OM1014	Command and Management 1	20	<b>Certificate of Higher Education</b>  Requires 120 credits including a minimum of 120 at Level 4.
	OM1015	Health and Safety Management	20	
	OM1023	Fundamentals of Fire Fighting: Introduction to Fire Safety and Law	20	
	OM1024		20	
	OM1055	Personal and Professional Development 1	20	
	OM1026	Science and Mathematics for Fire Engineering	20	

### 15. Personal Development Planning

The modules at each level provide students with the opportunity to engage with their own personal development planning and to recognise that learning is a lifelong process.

Following appropriate introduction and induction, the Course Team will support students in reflecting on their learning, performance and achievement, and in their planning for personal, educational, and career development.

Skills in PDP such as self-reflection, recording, target setting, action planning and monitoring will be highlighted as key lead indicators of success in securing and successfully completing the Industrial Placement Period and in securing employment in the industry on graduation.

Over the duration of the course, and including reference to extra-curricular student activities, Module Tutors for Communications and Personal Tutors will take formal responsibility for supporting students through their personal development in the following areas:

- Self-Awareness
- Study Skills
- Reviewing Progress
- Career Plans
- Making Applications

For students who undertake the Industrial Placement module, the tutors for this module will also focus attention on PDP.

Web based resource materials to be used include:

Personal Development Planning      [www.uclan.ac.uk/ldu/resources/pdp/intro1.htm](http://www.uclan.ac.uk/ldu/resources/pdp/intro1.htm)

Skills Learning Resources              [www.uclan.ac.uk/lskills/TLTP3/entersite.html](http://www.uclan.ac.uk/lskills/TLTP3/entersite.html)

The work in PDP will not be assessed.

### 16. Admissions criteria \*

(including agreed tariffs for entry with advanced standing)

*\*Correct as at date of approval. For latest information, please consult the University's website.*

1) Applicants will normally have completed 12 years of secondary schooling and having followed Pure Mathematics stream, or the equivalent, with a grade of D or higher in Mathematics, Physics, Chemistry and English for Omani General Diploma Certificate. In addition, all applicants will be interviewed and complete a diagnostic Entry Test/ Placement Test in English Language, Mathematics and Science to assess their ability to complete the programme. Applicants will be required to have a minimum average level of proficiency in English Language equivalent to IELTS band 5.0 with no band in any of the four skills ( reading, listening, speaking writing) lower than 4.5. The programme includes structured provision for further development of English language skills.

OR

2) Students who have successfully completed a Foundation year at the International College of Engineering & Management in Oman will have undertaken final assessments in English Language (equivalent to IELTS band 5.0 with no band in any of the four skills - reading, listening, speaking writing, lower than 4.5) and will have demonstrated the level of proficiency in all areas required for admission onto the programme.

APL/APEL will be assessed through standard University procedures.

#### **17. Key sources of information about the programme**

- ICEM Marketing Brochure
- ICEM Website at [www.icemoman.com](http://www.icemoman.com)
- School web site at [www.uclan.ac.uk/schools/engineering/index.php](http://www.uclan.ac.uk/schools/engineering/index.php)
- University courses information at [www.uclan.ac.uk/courses/index.php](http://www.uclan.ac.uk/courses/index.php)
- Professional body requirements may be found at [www.ife.org.uk](http://www.ife.org.uk)

## 18. Curriculum Skills Map

Please tick in the relevant boxes where individual Programme Learning Outcomes are being assessed

Module Level	Module Code	Module Title	Core (C), Compulsory (COMP) or Option (O)	Programme Learning Outcomes																				
				Knowledge and understanding					Subject-specific Skills					Thinking Skills				Other skills relevant to employability and personal development						
				A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	C1	C2	C3	C4	D1	D2	D3	D4	D5	D6	
LEVEL 6	FV3001	Enclosure Fire Dynamics	Comp		<input type="checkbox"/>		<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>					<input type="checkbox"/>
	FV3002	Fire Protection Engineering	Comp	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>				
	FV3004	Fire Investigation	Comp			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		
	FV3102	Probabilistic Risk Analysis	Comp	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>				<input type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>					
	FV3201	Engineering Design Project	Comp	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>		<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>				
	FV3900	Engineering Dissertation	Comp	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
LEVEL 5/6	OM3011	Disaster Mitigation and Emergency Management	Comp	<input type="checkbox"/>		<input type="checkbox"/>						<input type="checkbox"/>					<input type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>		
	OM3025	Design for Fire Safety 2	Comp	<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>				
	OM3024	Fire Modelling and Smoke Control in Buildings	Comp	<input type="checkbox"/>			<input type="checkbox"/>				<input type="checkbox"/>		<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>			<input type="checkbox"/>
	OM3022	Research Methods and Statistics	Comp				<input type="checkbox"/>				<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						
	OM2054	Professional Development and Entrepreneurship	Comp					<input type="checkbox"/>							<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	OM2023	Fire Safety in Buildings	Comp		<input type="checkbox"/>		<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			



Level	Module Code	Module Title	Core (C), Compulsory (COMP) or Option (O)	Programme Learning Outcomes																				
				Knowledge and understanding					Subject-specific Skills					Thinking Skills				Other skills relevant to employability and personal development						
				A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	C1	C2	C3	C4	D1	D2	D3	D4	D5	D6	
LEVEL 5	OM2018	Fire Engineering Science	Comp	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>					<input type="checkbox"/>				<input type="checkbox"/>				<input type="checkbox"/>			<input type="checkbox"/>	
	OM2074	Safety in Oil and Gas Industries	Comp	<input type="checkbox"/>					<input type="checkbox"/>					<input type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
	OM2024	Mathematics 1	Comp				<input type="checkbox"/>							<input type="checkbox"/>		<input type="checkbox"/>								
	OM2025	Design for Fire Safety 1	Comp	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>						
	OM2055	Personal and Professional Development 2	Comp					<input type="checkbox"/>					<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	OM2029	Fire Science	Comp	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>										<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			<input type="checkbox"/>
LEVEL 4	OM1014	Command and Management 1	Comp	<input type="checkbox"/>		<input type="checkbox"/>					<input type="checkbox"/>								<input type="checkbox"/>					
	OM1015	Health and Safety Management	Comp	<input type="checkbox"/>							<input type="checkbox"/>			<input type="checkbox"/>						<input type="checkbox"/>				
	OM1023	Fundamentals of fire Fighting	Comp	<input type="checkbox"/>				<input type="checkbox"/>									<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		
	OM1024	Introduction to Fire Safety and Law	Comp	<input type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>											<input type="checkbox"/>		<input type="checkbox"/>		
	OM1055	Personal and Professional Development 1	Comp					<input type="checkbox"/>										<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	OM1026	Science and Mathematics for Fire Engineering	Comp		<input type="checkbox"/>		<input type="checkbox"/>										<input type="checkbox"/>				<input type="checkbox"/>			

## **19. LEARNING OUTCOMES FOR EXIT AWARDS:**

For **each exit award available**, list learning outcomes relating to the knowledge and understanding, subject specific skills, thinking, other skills relevant to employability and personal development that a typical student might be expected to gain as a result of successfully completing each level of a course of study.

### **Learning outcomes for the award of Certificate of Higher Education**

- A1. Demonstrate knowledge of the main concepts and principles that underpin fire safety engineering and their application in the workplace
- A2. Apply the fundamental concepts of fire safety engineering to enable the generation and evaluation of alternative solutions to solve related
- B1. Analyse fire risk and protection needs for a range of applications, evaluate a range of strategies and implement solutions to meet these needs.
- B3. Evaluate managerial responsibility, including operational, financial and legal considerations in private industry and the parallel public sector;
- C1. Critically evaluate standard practice, and apply professional judgment in making recommendations and solving problems for future best practise
- C3. Select and apply appropriate problem solution skills in the processes of analysis, synthesis, evaluation and summarisation of ideas and information and the proposal of solutions;
- C4. Select, collate, interpret and evaluate information from a range of sources.
- D1. Research and evaluate a wide range of sources of information from text books, journals, the media, CD Rom, newspapers, internet, technical indexes, catalogues, Standards, case law.
- D2. Complete reports in a succinct and coherent format, and conduct and present individual research projects.
- D3. Work independently and within a team.
- D4. Communicate appropriately to a variety of audiences using a range of formats and approaches.
- D5. Identify and work towards targets for personal, academic and professional development.

### **Learning outcomes for the award of Diploma of Higher Education in Fire Safety (Engineering)**

- A1. Demonstrate knowledge of the main concepts and principles that underpin fire safety engineering and their application in the workplace
- A2. Apply the fundamental concepts of fire safety engineering to enable the generation and evaluation of alternative solutions to solve related design problems.
- A4. Apply and integrate knowledge and understanding from a variety of engineering disciplines into the context of fire safety engineering
- A5. Demonstrate the capability for independent and lifelong learning in a professional career
- B1. Analyse fire risk and protection needs for a range of applications, evaluate a range of strategies and implement solutions to meet these needs.

- B2. Evaluate whether design solutions integrate social, legal, engineering and technical requirements.
- B4. Formulate and produce creative and innovative technical solutions to fire safety problems by applying design and engineering principles to real situations.
- B5. Independently plan and execute a research project in fire safety engineering.
- C1. Critically evaluate standard practice, and apply professional judgment in making recommendations and solving problems for future best practise
- C2. Identify and analyse broadly defined problems, evaluate possible optional strategies, design and optimise appropriate solutions.
- C3. Select and apply appropriate problem solution skills in the processes of analysis, synthesis, evaluation and summarisation of ideas and information and the proposal of solutions.
- C4. Select, collate, interpret and evaluate information from a range of sources.
- D1. Research and evaluate a wide range of sources of information from text books, journals, the media, CD Rom, newspapers, internet, technical indexes, catalogues, Standards, case law.
- D2. Complete reports in a succinct and coherent format, and conduct and present individual research projects.
- D3. Work independently and within a team.
- D4. Communicate appropriately to a variety of audiences using a range of formats and approaches.
- D5. Identify and work towards targets for personal, academic and professional development.
- D6. Use IT literacy including Computational Fluid Dynamics

### **Learning outcomes for the award of Advanced Diploma in Fire Safety (Engineering)**

- A1. Demonstrate knowledge of the main concepts and principles that underpin fire safety engineering and their application in the workplace
- A2. Apply the fundamental concepts of fire safety engineering to enable the generation and evaluation of alternative solutions to solve related design problems;
- A3. Evaluate the interrelationships between the professional inputs into fire engineering and fire engineered project solutions with respect to all applicable managerial, legal and social parameters
- A4. Apply and integrate knowledge and understanding from a variety of engineering disciplines into the context of fire safety engineering
- A5. Demonstrate the capability for independent and lifelong learning in a professional career
- B1. Analyse fire risk and protection needs for a range of applications, evaluate a range of strategies and implement solutions to meet these needs.
- B2. Evaluate whether design solutions integrate social, legal, engineering and technical requirements;

B3. Evaluate managerial responsibility, including operational, financial and legal considerations in private industry and the parallel public sector;  
B4. Formulate and produce creative and innovative technical solutions to fire safety problems by applying design and engineering principles to real situations.

C1. Critically evaluate standard practice, and apply professional judgment in making recommendations and solving problems for future best practise

C2. Identify and analyse broadly defined problems, evaluate possible optional strategies, design and optimise appropriate solutions.

C3. Select and apply appropriate problem solution skills in the processes of analysis, synthesis, evaluation and summarisation of ideas and information and the proposal of solutions;

C4. Select, collate, interpret and evaluate information from a range of sources.

D1. Research and evaluate a wide range of sources of information from text books, journals, the media, CD Rom, newspapers, internet, technical indexes, catalogues, Standards, case law.

D2. Complete reports in a succinct and coherent format, and conduct and present individual research projects.

D3. Work independently and within a team.

D4. Communicate appropriately to a variety of audiences using a range of formats and approaches.

D5. Identify and work towards targets for personal, academic and professional development.