Study Programme

Academic year 2023-2024

Programme jointly offered by Ghent University,The University of Edinburgh,Lund University,Universitat Politècnica de Catalunya • BarcelonaTech
International Master of Science in Fire Safety Engineering

Language of instruction: English

Programme version 2

1 General Courses

The student takes the general courses in accordance with the mobility scheme as approved by the Management Board, according to the following possibilities:
• The first semester can be taken at Ghent University or University of Edinburgh (Scotland)
• The second semester is offered by Lund University (Sweden)
• The third semester can be taken at Ghent University or at Universitat Politècnica de Catalunya (Spain)
• The fourth semester can be taken at each partner university (Ghent University, University of Edinburgh, Lund University or Universitat Politècnica de Catalunya), or at one of the associated partners
More information: https://www.imfse.be

1.1 General Courses Ghent University

• Students in the first semester at Ghent University take up all courses from the first master's year (1 in column MT1, 24 ECTS) and 6 ECTS elective courses (following the modules below)
• Students in the third semester at Ghent University take up all courses from the second master's year (2 in column MT1, 24 ECTS) and 6 ECTS elective courses (following the modules below)

Nr	Course		CRDT	Ref	MT1	Session	Study
1	E051540	Explosions and Industrial Fire Safety	6		1	A:1	180
		Filip Verplaetsen -- Department of Structural Engineering and Building Materials					
2	E051430	Fire Dynamics	6		1	B:1	180
		Tarek Beji -- Department of Structural Engineering and Building Materials					
3	E051581	Fire Research Seminar	3		1	A:1	90
		Bart Merci -- Department of Structural Engineering and Building Materials					
4	E039161	Thermodynamics, Heat and Mass Transfer	6		1	A:1	180
		Georgios Maragkos -- Department of Structural Engineering and Building Materials					
5	E051570	Material Behaviour at Ambient and Elevated Temperatures	3		1	A:1	90
		Bart Merci -- Department of Structural Engineering and Building Materials					
6	E051482	Active Fire Protection I: Detection and Suppression	6		2	A:1	180
		Christian Gryspeert -- Department of Structural Engineering and Building Materials					
7	E051494	Active Fire Protection II: Smoke and Heat Control	6		2	A:1	180
		Bart Merci -- Department of Structural Engineering and Building Materials					
8	E051443	Fire Safety and Legislation	3		2	A:1	90
		Jan De Saedeleer -- Department of Structural Engineering and Building Materials					
9	E051610	Passive Fire Protection	3		2	A:1	90
		Emmanuel Annerel -- Department of Structural Engineering and Building Materials					
10	E061522	Performance-Based Design	6		2	A:1	180
		Patrick van Hees -- Department of Structural Engineering and Building Materials					

1.1.1 In-depth Structural Engineering Elective Courses Ghent University

• Students in the first semester at Ghent University:
  • one course from this module and one course from the Boadening Elective Courses (1.1.2.)
  • Students with a structural/civil engineering background: subscribe to Design for Structural Fire Resistance (E051512)
  • Students with another background: subscribe to Analysis of Structures (E051511)
• Students in the third semester at Ghent University:
  • Subscribe to Design for Structural Fire Resistance (E051512)
  • Subscribe either to Applications of Advanced Structural Fire Engineering (E051620) or to an elective from the Broadening Electives Courses (1.1.2.).
    • If Design for Structural Fire Resistance (E051512) was already taken in the first semester: subscribe to Applications of Advanced Structural Fire Engineering (E051620) and to an elective from the Broadening Electives Courses (1.1.2.).

Nr	Course	CRDT	Ref	MT1	Session	Study

Nr	Course		CRDT	Ref	MT1	Session	Study
1	E051511	Analysis of Structures	3	1		A:1	90
		Ruben Van Coile -- Department of Structural Engineering and Building Materials					
2	E051512	Design for Structural Fire Resistance	3			A:1	90
		Emmanuel Annerel -- Department of Structural Engineering and Building Materials					
3	E051620	Applications of Advanced Structural Fire Engineering	3	2		A:1	90
		Ruben Van Coile -- Department of Structural Engineering and Building Materials					

1.1.2 Broadening Elective Courses Ghent University

Subscribe to no more than 3 credit units from the following list. Subject to approval by the faculty.

Nr	Course		CRDT	Ref	MT1	Session	Study
1	E076431	Introduction to Entrepreneurship	3			A:1	90
		Petra Andries -- Department of Marketing, Innovation and Organisation					
2	E045930	Modelling of Turbulence and Combustion	3			A:1	90
		Alexander Snegirev -- Department of Structural Engineering and Building Materials					
3	E051560	FSE Based Firefighting	3			A:1	90
		Karel Lambert -- Department of Structural Engineering and Building Materials					
4	E051640	Data-Driven Management of Fire Incidents	3			A:1	90
		Steven Verstockt -- Department of Electronics and Information Systems					

1.2 General Courses The University of Edinburgh   30 credits

Nr	Course		CRDT	Ref	MT1	Session	Study
1	E900534	Fire Science Laboratory	10	1		A:1	300
		Rory Hadden -- The University of Edinburgh					
2	E900535	Fire Safety Engineering	5	1		A:1	150
		Stephen Welch -- The University of Edinburgh					
3	E900536	Fire Science and Fire Dynamics	5	1		A:1	150
		Ricky Carvel -- The University of Edinburgh					
4	E900537	Structural Design for Fire	5	1		A:1	150
		Angus Law -- The University of Edinburgh					
5	E900538	Research Methods for Engineers	5	1		A:1	150
		Simon Smith -- The University of Edinburgh					

1.3 General Courses Lund University   30 credits

Nr	Course		CRDT	Ref	MT1	Session	Study
1	E900304	Risk Assessment	8	1		A:2	240
		Håkan Frantzich -- Lund University					
2	E900305	Advanced Fire Dynamics	9	1		A:2	270
		Nils Johansson -- Lund University					
3	E900306	Human Behaviour in Fire	8	1		A:2	240
		Enrico Ronchi -- Lund University					
4	E900525	Simulation of Fires in Enclosures	5	1		A:2	150
		Jonathan Wahlqvist -- Lund University					

1.4 General Courses Universitat Politècnica de Catalunya   30 credits

Students taking the third semester at Universitat Politècnica de Catalunya, take all 4 courses mentioned hereafter, as well as one elective course.

Nr	Course		CRDT	Ref	MT1	Session	Study
1	E900545	Wildland Fire Behavior and Modelling	6	2		A:1	180
		Eulalia Planas -- Universitat Politècnica de Catalunya • BarcelonaTech					
2	E900543	Risk and Vulnerability at the Wildland-Urban Interface	6	2		A:1	180
		Elsa Pastor -- Universitat Politècnica de Catalunya • BarcelonaTech					
3	E900541	Advanced Fire Safety Engineering	6	2		A:1	180
		Alba Àgueda -- Universitat Politècnica de Catalunya • BarcelonaTech					
4	E900542	Risk and Safety at the Chemical Industry	6	2		A:1	180
		Elsa Pastor -- Universitat Politècnica de Catalunya • BarcelonaTech					

1.4.1 Electives Universitat Politècnica de Catalunya   6 credits

Subscribe to 6 credit units from the following list.

Nr	Course		CRDT	Ref	MT1	Session	Study
1	E900539	Computer Vision	6	2		A:1	180
		Jose Julian Rodellar -- Universitat Politècnica de Catalunya • BarcelonaTech					

Nr	Course		CRDT	Ref	MT1	Session	Study
2	E900540	Data Analysis and Pattern Recognition	6	2		A:1	180
		Raúl Benítez -- Universitat Politècnica de Catalunya • BarcelonaTech					
3	E900544	Technology Innovation	6	2		A:1	180
		Jordi Olivella -- Universitat Politècnica de Catalunya • BarcelonaTech					

2 Master's Dissertation

Nr	Course		CRDT	Ref	MT1	Session	Study
1	E091105	Master's Dissertation	30	2		B:2	900

Teaching

When a course is not taught (solely) in the programme's language of instruction, the effectively used languages are indicated in square brackets following the cours name, using the following ISO codes:

bg: Bulgarian	de: German	es: Spanish	ja: Japanese	pl: Polish	sh: Kroatian/Serbian	zh: Chinese
cs: Czech	el: Greek	fr: French	nl: Dutch	pt: Portuguese	sl: Slovene	
da: Danish	en: English	it: Italian	no: Norwegian	ru: Russian	sv: Swedish	

Semester

Semesters are indicated by their number (1 or 2); semester 3 represents the summer period and J indicates a course spanning semesters 1 and 2.
When a capital letter precedes a semester number, the course has multiple offerings. The letter indicates the offering concerned.
When a semester is shown in brackets, the course in not offered this year in the specific offering.
The offering frequency and first year of offering are indicated by the following codes:

a: bi-annually	c: annually, from 2024-2025	f: annually, from 2025-2026	i: annually, from 2026-2027
b: tri-annually	d: bi-annually, from 2024-2025	g: bi-annually, from 2025-2026	j: bi-annually, from 2026-2027
	e: tri-annually, from 2024-2025	h: tri-annually, from 2025-2026	k: tri-annually, from 2026-2027