GHENT UNIVERSITY

Study Programme

Academic year 2022-2023

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 1

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 taking the first semester at Ghent University, take up all courses marked '1' in the column 'MT1' (24 ECTS in all), supplemented by 6 ECTS of elective courses as indicated in the modules mentioned hereafter.
Students taking the third semester at Ghent University, take up all courses marked '2' in the column 'MT1' (24 ECTS in all), supplemented by 6 ECTS of elective courses as indicated in the modules mentioned hereafter.

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

1.1.1 In-depth Structural Engineering Elective Courses Ghent University

Students staking the first semester at Ghent University, take up one course pertaining to this module and one course pertaining to the broadening electives (1.1.2.); students with a structural/civil engineering background, take up the course 'Design for Structural Fire Resistance', whereas students with another preliminary training, take up the course 'Analysis of Structures'.

Students taking the third semester at Ghent University take up the course 'Design for Structural Fire Resistance' and complete their semester's programme either with the course 'Applications of Advanced Structural Fire Engineering' or an elective from the broadening electives module (1.1.2.).
In case the course 'Design for Structural Fire Resistance' was already taken in the first semester, they take up the course 'Applications of Advanced Structural Fire Engineering' and complete their semester's programme with an elective from the broadening electives module (1.1.2.).

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

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 *Petra Andries -- Department of Marketing, Innovation and Organisation*	3			A:1	90
2	E045930	Modelling of Turbulence and Combustion *Bart Merci -- Department of Structural Engineering and Building Materials*	3			A:1	90
3	E051700	CFD for Fire Safety Engineering *Tarek Beji -- Department of Structural Engineering and Building Materials*	3			A:1	90
4	E051560	FSE Based Firefighting *Karel Lambert -- Department of Structural Engineering and Building Materials*	3			A:1	90
5	E051640	Data-Driven Management of Fire Incidents *Steven Verstockt -- Department of Electronics and Information Systems*	3			A:1	90

1.2 General Courses The University of Edinburgh 30 credits

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

1.3 General Courses Lund University 30 credits

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

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 *Universitat Politècnica de Catalunya • BarcelonaTech, Eulalia Planas*	6		2	A:1	180
2	E900543	Risk and Vulnerability at the Wildland-Urban Interface *Universitat Politècnica de Catalunya • BarcelonaTech, Elsa Pastor*	6		2	A:1	180
3	E900541	Advanced Fire Safety Engineering *Universitat Politècnica de Catalunya • BarcelonaTech, Alba Àgueda*	6		2	A:1	180
4	E900542	Risk and Safety at the Chemical Industry *Universitat Politècnica de Catalunya • BarcelonaTech, Elsa Pastor*	6		2	A:1	180

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 *Universitat Politècnica de Catalunya • BarcelonaTech, Jose Julian Rodellar*	6		2	A:1	180
2	E900540	Data Analysis and Pattern Recognition *Universitat Politècnica de Catalunya • BarcelonaTech, Raúl Benítez*	6		2	A:1	180
3	E900544	Technology Innovation *Universitat Politècnica de Catalunya • BarcelonaTech, Jordi Olivella*	6		2	A:1	180

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 2023-2024	f: annually, from 2024-2025	i: annually, from 2025-2026
b: tri-annually	d: bi-annually, from 2023-2024	g: bi-annually, from 2024-2025	j: bi-annually, from 2025-2026
	e: tri-annually, from 2023-2024	h: tri-annually, from 2024-2025	k: tri-annually, from 2025-2026