

Study Programme

Academic year 2021-2022

Programme jointly offered by Ghent University, Lund University, The University of Edinburgh

International Master of Science in Fire Safety Engineering

Language of instruction: English

Programme version 11

1 General Courses 90 credits

Subscribe to 90 credit units from no less than 2 and no more than 3 modules from the following list. Subject to approval by the faculty. In accordance with the mobility scheme of the student.

1.1 General Courses Ghent University

Subscribe to no less than 30 and no more than 60 credit units from the following list. Subject to approval by the faculty.

| Nr | | | CRDT | | 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

Subscribe to no less than 3 and no more than 9 credit units from the following list. Subject to approval by the faculty. Each student takes the course Design for Structural Fire Resistance (E051512), either in year 1 or in year 2.

Students without the prerequisite structural/civil engineering background take Analysis of Structures (E051511) in year 1 and Design for Structural Fire Resistance (E051512) in year 2. They can also choose Applications of Advanced Structural Fire Engineering (E051620) as an extra elective in year 2.

Students with the necessary initial competences choose Design for Structural Fire Resistance (E051512) in year 1 and subscribe to Applications of Advanced Structural Fire Engineering (E051620) in year 2.

| Nr | Course | | CRDI | Ref MI1 | 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 | | | CRDT Ref M | VIT1 Session | Study |
|----|---------|--|------------|--------------|-------|
| 1 | E076431 | Introduction to Entrepreneurship Petra Andries Department of Marketing, Innovation and Organisation | 3 | A:1 | 90 |
| 2 | E037321 | Turbomachines Joris Degroote Department of Electromechanical, Systems and Metal Engineering | 6 | B:1 | 180 |
| 3 | E045930 | Modelling of Turbulence and Combustion Bart Merci Department of Structural Engineering and Building Materials | 3 | A:1 | 90 |
| 4 | E051700 | CFD for Fire Safety Engineering Tarek Beji Department of Structural Engineering and Building Materials | 3 | A:1 | 90 |
| 5 | E051560 | FSE Based Firefighting Karel Lambert Department of Structural Engineering and Building Materials | 3 | A:1 | 90 |
| 6 | 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

60 credits

| Su | bscribe to no | less than 30 and no more than 60 credit units from the following list. S | Subject to approval by t | he faculty. | | |
|---------|---------------|--|--------------------------|-------------|--------------|---------|
| Nr | Course | | CRDT Re | MT1 | Session | Study |
| 1 | E900527 | Fire Science and Fire Dynamics The University of Edinburgh, Ricky Carvel | 9 | 1 | A:1 | 270 |
| 2 | E900529 | Fire Safety Engineering The University of Edinburgh, Stephen Welch | 9 | 1 | A:1 | 270 |
| 3 | E900530 | Research Methods for Engineers The University of Edinburgh, Antonis Giannopoulos | 6 | 1 | A:1 | 180 |
| 4 | E900528 | Structural Mechanics The University of Edinburgh, Luke Bisby | 6 | 1 | A:1 | 180 |
| 5 | E900524 | Finite Element Analysis for Solids The University of Edinburgh, Pankaj Pankaj | 6 | 2 | A:1 | 180 |
| 6 | E900531 | Fire Science Laboratory The University of Edinburgh, Stephen Welch | 6 | 2 | A:1 | 180 |
| 7 | E900532 | Fire Investigation and Failure Analysis The University of Edinburgh, Rory Hadden | 6 | 2 | A:1 | 180 |
| 8 | E900522 | Structural Design for Fire The University of Edinburgh, Angus Law | 6 | 2 | A:1 | 180 |
| 9 | E900533 | Fire Safety, Engineering and Society The University of Edinburgh, Graham Spinardi | 6 | 2 | A:1 | 180 |
| 1. | 3 Genera | al Courses Lund University | | | 30 | credits |
| Su | bscribe to 30 | credit units from the following list. Subject to approval by the faculty. | 0007 0 | | • • • | |
| Nr 1 | E900304 | Risk Assessment Lund University, Håkan Frantzich | 8 | 1 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 |
| 2 | Master's | s Dissertation | | | 30 (| credits |
| Su | bscribe to 30 | credit units from the following list. Subject to approval by the faculty. | | | | |

The student can take the Master's Dissertation at one of the partner universities, in accordance with his/her mobility scheme.

| Nr | r Course | CRDT | Ref | MI1 | 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 | n 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 2022-2023 |
|-----------------|---------------------------------|
| b: tri-annually | d: bi-annually, from 2022-2023 |
| | e: tri-annually, from 2022-2023 |

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