LUND UNIVERSITY | LTH FACULTY OF ENGINEERING

Programme Syllabus

Master's Programme in Fire Safety Technology

- Faculty: Faculty of Engineering, LTH
- Programme code: TABRT
- Credits: 120
- Admission level: Bachelor's degree
- Degree level: Second cycle
- Approved by: Peter Persson
- Approval date: 9 February 2026
- Validity: Academic year 2026/2027
- Entry into force: 9 February 2026

1 Aim and outcomes

1.1 Aim

The Programme is an Erasmus+ Joint Programme carried out by Lund University, Ghent University, The University of Edinburgh, and Polytechnic University of Catalonia in Barcelona.

The major educational objectives of the Programme are for IMFSE graduates to:

- Master and apply knowledge of physics, chemistry, thermodynamics, heat and mass transfer to critically analyse the development of fires in the built environment, wildfires or explosions.
- Master and apply knowledge of element methods and dynamics of structures to critically analyse the behaviour of structures in case of fire.
- Master and apply the advanced knowledge of fire or explosion dynamics, smoke dynamics, risk assessment, fire safety

legislation and regulations, human behaviour, active and passive fire protection measures, and integrate this to develop a fire safety strategy or performance based fire safety design in the built environment (which can include wildland – urban interface) or for industry fire protection
- Perform valid computer simulations of the development of fires in the built environment, wildfires or explosions, and of the behaviour of structures in case of fire.
- Perform and critically analyse fire risk assessment and management in an autonomous and flexible manner, based on limited, incomplete, contradictory or redundant data.
- Act in an ethical, professional and social way when developing and presenting a performance based fire safety design.
- Be able to critically evaluate and construct original, performance-based, fire safe designs.
- Understand the complexity and evolution of design tools, and the limitations of current understanding.
- Understand the current research trends and be able to subsequently perform scientific (PhD level) research in the domain of FSE.
- Gain an awareness of the professional context and the current challenges in FSE.
- Be able to make assessments in the field of FSE, taking into account relevant scientific, social and ethical aspects, and demonstrate an awareness of ethical aspects of research and development.
- Be able to clearly present and discuss conclusions and the knowledge and arguments behind them, in dialogue with different groups, orally and in writing, in national and international contexts.

1.2 Outcomes for a Degree of Master of Science (120 credits)

(Higher Education Ordinance 1993:100)

Knowledge and understanding

For a Degree of Master of Science (120 credits) the student shall

- demonstrate knowledge and understanding in the main field of study, including both broad knowledge of the field and a considerable degree of specialised knowledge in certain areas of the field as well as insight into current research and development work, and
- demonstrate specialised methodological knowledge in the main field of study.

Competence and skills

For a Degree of Master of Science (120 credits) the student shall

- demonstrate the ability to critically and systematically integrate knowledge and analyse, assess and deal with complex phenomena, issues and situations even with limited information,
- demonstrate the ability to identify and formulate issues critically, autonomously and creatively as well as to plan and, using appropriate methods, undertake advanced tasks within predetermined time frames and so contribute to the formation of knowledge as well as the ability to evaluate this work,
- demonstrate the ability in speech and writing both nationally and internationally to report clearly and discuss his or her conclusions and the knowledge and arguments on which they are based in dialogue with different audiences, and
- demonstrate the skills required for participation in research and development work or autonomous employment in some other qualified capacity.

Judgement and approach

For a Degree of Master of Science (120 credits) the student shall

- demonstrate the ability to make assessments in the main field of study informed by relevant disciplinary, social and ethical issues and also to demonstrate awareness of ethical aspects of research and development work,

- demonstrate insight into the possibilities and limitations of research, its role in society and the responsibility of the individual for how it is used, and
- demonstrate the ability to identify the personal need for further knowledge and take responsibility for his or her ongoing learning.

2 Programme structure

The program includes 90 credits compulsory courses and a degree project (30 credits).

2.1 First semester - Ghent or Edinburgh

The first semester can be taken at Ghent University or University of Edinburgh.

2.2 Second semester - Lund

The courses are listed in the timetable.

2.3 Third semester - Ghent or Barcelona

The third semester can be taken at Ghent University or Polytechnic University of Catalonia.

2.4 Fourth semester

The last semester consists of the degree project (30 credits) conducted in Ghent, Edinburgh, Lund or Barcelona or at one of the associated universities; University of Queensland Australia, ETH Zürich Switzerland, University of Maryland USA, University of Science and Technology of China, Worcester Polytechnic Institute USA, University of Poitiers Frankrike, Slovenian National Building and Civil Engineering Institute.

2.5 Further studies

On completion of the second-cycle degree, students have basic eligibility for third-cycle studies.

3 Admission requirements

Admission to the program is made by Ghent University. For application process and admission requirements go to www.imfse.be

4 Degree

4.1 Degree requirements

For a Degree of Master of Science (120 credits) students must successfully complete courses comprising 120 credits, including a degree project worth 30 credits. At least 90 credits must be second-cycle credits and at least 60 credits of those must be in the main field of study, including the degree project.

4.2 Degree and degree certificate

When students have completed the degree requirements, they are entitled to apply for a certificate of a Degree of a Master of Science (120 credits). Main Field of Study: Fire Safety Technology.