

Fire Safety, Engineering and Society (E900523)

Course size (nominal values; actual values may depend on programme)
Credits 9.0 **Study time** 270 h **Contact hrs** 33.0 h

Course offerings in academic year 2017-2018

A (semester 1)

Lecturers in academic year 2017-2018

Spinardi, Graham

EDINBU lecturer-in-charge

Offered in the following programmes in 2017-2018

	crdts	offering
International Master of Science in Fire Safety Engineering	9	A

Teaching languages

English

Keywords

Fire Safety Engineering, engineering practice, social factors

Position of the course

Although engineering provides rigorous tools for addressing complex societal goals, there is little formal teaching with regard to the way these goals are understood. This course will fill this gap by providing students with a range of conceptual tools (illustrated with examples from many fields of engineering and technological development) geared towards understanding the ways that social factors influence engineering (especially fire safety engineering) practice. In addition, the understandable tendency in engineering to quantification and calculation can obscure the central roles of choice and judgement in engineering practice. This course will therefore also address the ways that the knowledge claims used in engineering are socially constructed, and why this matters for engineering outcomes.

Contents

- 1 Introduction. Set out broad principles and methods of sociology of knowledge approach and why it is central to understanding both the effects of fire, and fire safety science and engineering practice.
- 2 History of major disasters and effects on regulation and practice.
- 3 Epidemiology and statistics. Socioeconomic causes of fire outcomes.
- 4 Development of regulation in 20th century. Emergence of life safety (vs property) and role of public and private institutions.
- 5 Testing. Standard fire testing and its implications for knowledge and practice.
- 6 Evidence and Governance: Sprinklers and smoke alarms
- 7 Limits of building control. Why people, practice, and social organisation matter. Example of fire in informal settlements.
- 8 Performance Based Design. The significance of 'expertise asymmetry' in regulation, and the role of professionalisation.
- 9 Judgment and Risk. Quantification, optimisation, and spurious precision.
- 10 Guest lecture.
- 11 Summing up. Heterogeneous Engineering. The role of politics and organisations.

Initial competences

None are assumed.

Final competences

- 1 Demonstrate a critical understanding of the principal theories and concepts used to understand the way that engineering practice interacts with broader societal factors
- 2 Ability to engage critically with relevant literature on risk and regulation
- 3 Use of one of the frameworks/conceptual approaches to analyse case studies

- 4 Assess competing claims and critically review the methods used to create fire safety knowledge
- 5 Ability to convey the above to an informed audience

Conditions for credit contract

This course unit cannot be taken via a credit contract

Conditions for exam contract

This course unit cannot be taken via an exam contract

Teaching methods

Group work, lecture, seminar

Extra information on the teaching methods

22 hours of lectures; 11 hours of seminars/tutorials; 1 hour of formative assessment; 2 hours of summative assessment; 2 hours of programme level learning and teaching; 93 hours of directed and independent learning.

Feedback will be available throughout the course by discussion with tutors and lecture staff.

Discussion will form a key part of the tutorials to reflect this.

Tutorials will also offer a route for formal, formative feedback.

Students will be given the opportunity to provide Stop, Start and Continue feedback and comments on this will be provided back by the course lecturer.

Exam Post-Mortem comments will be provided.

Learning materials and price

None beyond provided lecture materials.

References**Course content-related study coaching****Evaluation methods**

continuous assessment

Examination methods in case of periodic evaluation during the first examination period**Examination methods in case of periodic evaluation during the second examination period****Examination methods in case of permanent evaluation**

Assignment, skills test

Possibilities of retake in case of permanent evaluation

not applicable

Extra information on the examination methods

The assessment will be made on the basis of:

Intermittent Assessment 100%:

- 1 a 1000 word blogpost identifying and critically commenting on a topical issue in fire safety engineering (14% marks)
- 2 a 3500 word essay on a topic to be agreed between the student and the course convener on a social aspect of fire safety engineering (42% marks).
- 3 an 8,000 word project report (44% marks)

Formative feedback on blogpost

Students will be given the opportunity to provide Stop, Start and Continue feedback and comments on this will be provided back by the course lecturer.

Exam Post-Mortem comments will be provided.

Calculation of the examination mark

Coursework 100 %