

Course syllabus

Introduktion till brandteknik Introduction to Fire Safety Engineering

VBRA06, 6 credits, G1 (First Cycle)

Valid for: 2023/24

Faculty: Faculty of Engineering, LTH

Decided by: PLED BI/RH

Date of Decision: 2023-04-12

General Information

Main field: Technology.

Compulsory for: BR1

Language of instruction: The course will be given in Swedish

Aim

The aim is that students attain broad and general knowledge in the field of fire safety engineering. The course also aims to introduce students to the role of fire safety engineers in society, focusing especially on the main categories of work roles. The course will also provide insight into different study techniques and group dynamics. Finally, the course aims to provide students with basic oral and written communication skills, knowledge about laboratory work and to prepare them for further university studies.

Learning outcomes

Knowledge and understanding

For a passing grade the student must

- be able to explain common terms and concepts in fire safety engineering.
- be able to describe basic fire science theory and phenomena that occur during compartment fires.
- be able to describe the most common extinguishing systems and the associated extinguishing media.
- be able to describe fire rescue and the work of the rescue services.
- be able to describe fire safety engineering design.

- be able to describe how fire protection can be divided into active and passive protection.
- be able to describe fire risks associated with different building materials and structural engineering solutions
- be able to describe the concepts of risk, risk analysis and risk management.
- be able to describe the safety rules for laboratory work.
- understand the importance of study techniques and group dynamics.

Competences and skills

For a passing grade the student must

- be able to make use of terms and concepts in fire safety engineering in both oral and written communication.
- be able to apply basic fire science theory.
- be able to perform basic simplified fire safety design (prescriptive design).
- be able to apply certain parts of the risk management process.
- be able to describe a subject area, both orally and in writing, as well as present arguments and persuade people.
- be able to search and compile knowledge.
- be able to conduct basic information searches.
- be able to apply the basic rules related to report writing.
- be familiar with issues related to academic writing and plagiarism.

Judgement and approach

For a passing grade the student must

- demonstrate capability to identify her/his need for further knowledge.

Contents

The following parts are included in the course:

- basic fire science theory
- fire protection and fire safety engineering design
- fire rescue operations and the rescue services
- the role of fire safety engineers in society
- fire laboratory work
- oral and written communication
- introduction to library resources and basic information search
- study techniques and group dynamics

Examination details

Grading scale: TH - (U,3,4,5) - (Fail, Three, Four, Five)

Assessment: The examination is performed in the form of (1) exam, (2) assignments (written and/or oral), and laboratory work (written and/or oral). All parts need to be completed for a final grade. In addition, attendance is required at all seminars/presentations and laboratory classes/field days.

The examiner, in consultation with Disability Support Services, may deviate from the regular form of examination in order to provide a permanently disabled student with a form of examination equivalent to that of a student without a disability.

Parts

Code: 0122. **Name:** Exams.

Credits: 3. **Grading scale:** TH. **Assessment:** Written examination

Code: 0222. **Name:** Assignments/labs.

Credits: 2. **Grading scale:** UG. **Assessment:** Approved written and oral examination and compulsory laboratory works **Contents:** Assignment with written and oral examination and compulsory laboratory works

Code: 0322. **Name:** Assignment.

Credits: 1. **Grading scale:** UG. **Assessment:** Presence and approved written and oral examination at final seminar. **Contents:** Oral and communication skills.

Admission

The number of participants is limited to: No

The course overlaps following course/s: VBR150, VBR162, VBRA01, VBRA05

Reading list

- Ondrus, J.: Brandteori. Karlstad: Räddningsverket, 1996.
- Bengtsson, L-G: Inomhusbrand. Karlstad: Räddningsverket, 2001.
- Bengt Dahlgren, Brandskyddslaget, Brandteknik, Lunds tekniska högskola: Brandskyddshandboken. 2022.
- Nilsson, D., & Holmstedt, G.: Kompendium i aktiva system - Detektion. Lund: Brandteknik, Lunds tekniska högskola, 2008.
- Särdaqvist, S.: Vatten och andra släckmedel. Karlstad: MSB, 2022.
- Nystedt, F & Frantzich, H.: Kvalitetsmanual för brandtekniska analyser vid svenska kärntekniska anläggningar, Rapport 3160. Lund: Brandteknik och riskhantering, Lunds tekniska högskola, 2011.
- Bengtsson, L-G.: Övertändning, backdraft och brandgasexplosion sett ur räddningstjänstens perspektiv, Rapport 1019. Lund: Brandteknik, Lunds tekniska högskola, 1999.
- Alfredsson, C. & Carlsson, C-H.: Räddningstjänst och miljö. Karlstad: Räddningsverket, 2006.
- Madsen, D.: Säkerhetsrutiner för laborativ och experimentell verksamhet vid avdelningen Brandteknik. Lund: Brandteknik, Lunds tekniska högskola, 2021.
- Enander, A.: Människors förhållningssätt till risker, olyckor och kriser. Karlstad: Räddningsverket, 2005.
- Nilsson, J.: Introduktion till riskanalysmetoder, Rapport 3124. Lund: Brandteknik, Lunds tekniska högskola, 2003.
- Sjöberg, L.: Riskperception och attityder. Ekonomisk debatt, årg 31, nr 6, 2003.

Contact and other information

Course coordinator: Nils Johansson, nils.johansson@brand.lth.lu.se

Further information: Active participation in group work is required. Each group member must be able to report and be responsible for the content individually. If a group member does not fulfill the requirements for active participation, or disregards his/her commitments, she/he can be reassigned by the examiner to another group or get a fail result.