

<i>Course title:</i> Fire design of concrete structures	<i>Code:</i> ErS11
<i>Field of study:</i> Structural Engineering	<i>Year / semester:</i> 3/6
<i>Specialty:</i>	<i>Course:</i> compulsory
<i>Hours / semester:</i> Lectures: 5 Tutorials: 5 Laboratories: 5 Project / Seminars: 0	<i>Number of credits:</i> 6

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Status of the course in the study program:
Elective course

Course description:

Lectures cover basics of strength of materials at elevated temperatures (concrete and reinforcing steel), actions on structures exposed to fire and fundamentals of fire safety in buildings. Several examples of design of members according to Eurocode 1992-1-2 are given. Tabulated data and simplified calculation methods are explained in detail, advanced design methods are introduced.

Teaching outcomes:

The aim of the course is to give the student understanding of strength of materials at elevated temperatures and design procedures of reinforced concrete members in fire according to Eurocode 2.

Prerequisites:

Strength of Materials, Design of Reinforced Concrete Structures.

Teaching method:

Lectures, e-learning (Moodle platform), Tutorials, Computer labs.

Assessment method:

Final Project

Bibliography:

- [1] EN 1990, EN 1991-1-2, EN 1992-1-1, EN 1992-1-2
- [2] Anderberg Y., N.F. Forsen, T. Hietanen, J.M. Izquierdo, A. Le Duf, E. Richter, R.T. Whittle, H. Bossenmayer, H.-U. Litzner, J. Kruppa, Background documents to EN 1992-1-2 Eurocode 2: Design of concrete structures – Part 1-2: General rules – Structural fire design, 2004
- [3] Purkiss, J.A., L.-Y. Li, Fire Safety Engineering Design of Structures, CRC Press, 2014
- [4] Vassart O., B. Zhao, L.G. Cajot, F. Robert, U. Meyer, A. Frangi, Eurocodes: Background & Applications. Structural Fire Design, Joint Research Centre Report, 2014