

<i>Course title:</i> Fire design of steel structures	<i>Code:</i> ErS12
<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

Lecturer: MSc Michał Malendowski
Tel. +48 61 665 2829
e-mail: michal.malendowski@put.poznan.pl

Institute / Faculty: Institute of Structural Eng.,
Faculty of Civil and Environmental Engineering,
ul. Piotrowo 5
60 965 Poznań
tel. +48 61 665 2454, fax +48 61 876 6116
e-mail: office_se@put.poznan.pl

Status of the course in the study program:
Elective course

Course description:
Lectures cover basics of strength of materials at elevated temperatures (structural steel), actions on structures exposed to fire and fundamentals of fire safety in buildings. Program covers basics of fire modelling and thermal boundary conditions of steel structures in fire. An example of design of steel member according to Eurocode 1993-1-2 is given. Some examples of fire modelling methods are also introduced.

Teaching outcomes:
The aim of the course is to give the student understanding of strength of materials at elevated temperatures, fire modelling and design procedures of steel members in fire according to Eurocode 3.

Prerequisites:
Strength of Materials, Design of Steel Structures.

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

Assessment method:
Final Project

Bibliography:

- [1] EN 1990, EN 1991-1-2, EN 1993-1-1, EN 1993-1-2
- [2] Franssen, J-M, Vila Real, P., Fire Design of Steel Structures, ECCS, 2010
- [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
- [5] Karlsson, B., Quintiere, J.G, Enclosure Fire Dynamics, CRC Press, 2000