

Researches in structural engineering and recent steel related researches

Prof. Jari Puttonen
Department of Civil and Structural
Engineering
School of Engineering
Aalto University

Dr. Wei Lu
Teaching Researcher
Department of Civil and Structural Engineering
School of Engineering
Aalto University

CONTENTS

- Research strategies in the Department of Civil and Structural Engineering
- Steel related teaching and researching
- DI and licentiate theses from 2011

Educations offered by the Department of Civil and Structural Engineering

- **Structural Engineering and Structural Mechanics**
- **Building Materials Technology and Construction Technology**
- **Building Physics and Service Life Management of Structures**
- **Construction Economics and Management**
- **Building Services Technology**
- **Building Information Modeling**

Majors and Minors

Structural engineering
(Steel Structures)

Building materials and
building physics

Geoengineering

Construction economics
and management

Building services
technology

Current steel related teaching

For B.Sc. Students

Rak-83.2210 (3 op / cr)	Steel Structures I	IV (44)	Fire design, Joint design, Thin-walled steel members, Plated girder, Fatigue design	Lectures Homework, Exam
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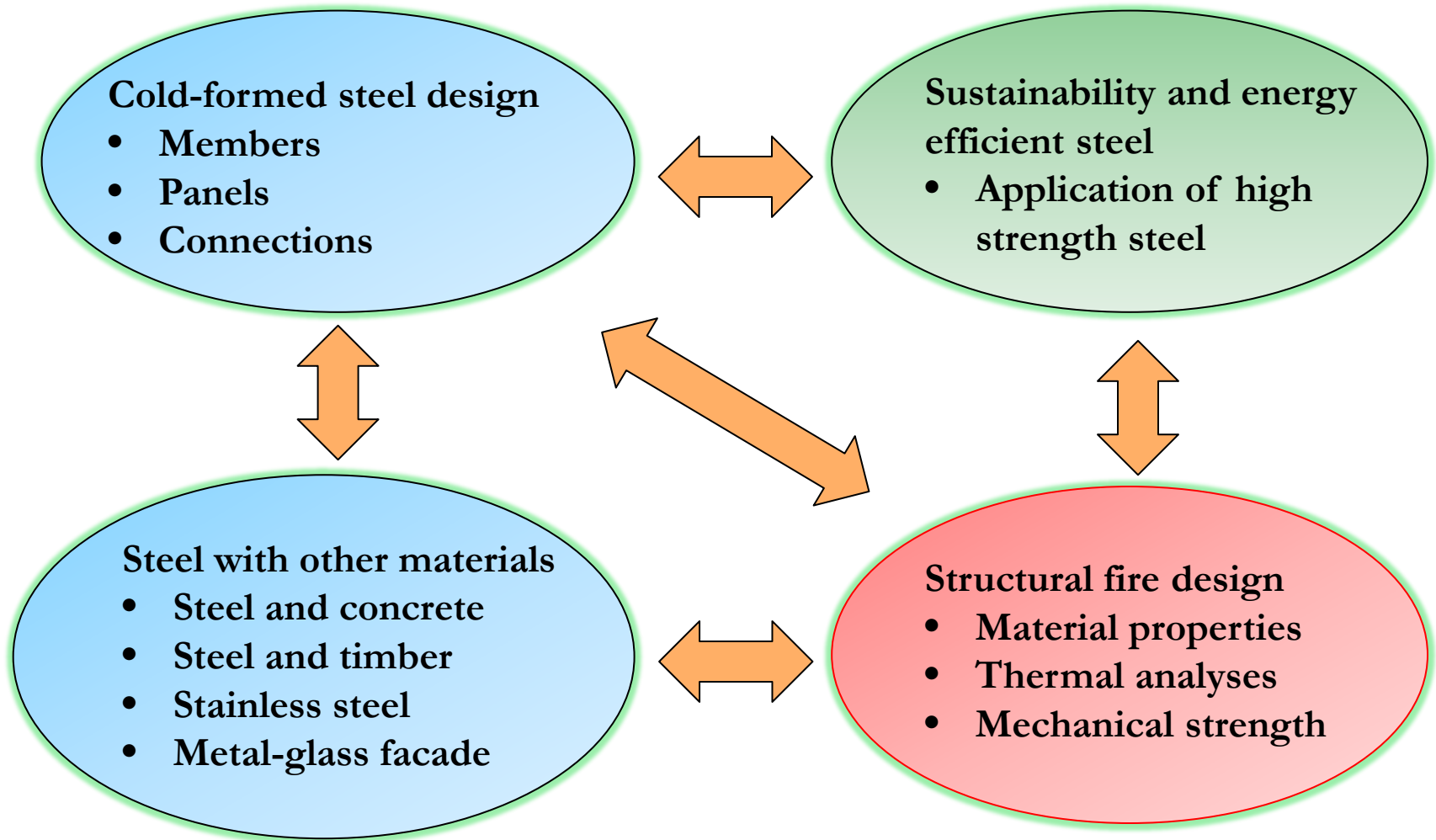
For M.Sc. Students

Rak-83.3110 (4 op / cr)	Steel Structures II	III, IV (33)	Fire design, Joint design, Thin-walled steel members, Plated girder, Fatigue design	Lectures Homework, Exam
Rak-83.3200 (4 op / cr)	Composite Structures	I, II (24)	Steel and concrete composite beam, column, slab, joint design, fire design	Lectures Homework, Exam
Rak-83.3300 (4 op / cr)	Design Course of Steel and Composite Structures	I-IV (25)	Two design work in <ul style="list-style-type: none">• Steel structures• Steel and concrete composite structures	Design exercises

Lecturer: Dr. Wei Lu

Part-time lecturers: Dr. Ludovic Fülöp, TkL Aki Vuolio

Steel related researches



Papers in international journals with referee practices from 2011

- **Lu, W., Ma, Z, Mäkeläinen, P. and Outinen, J. (2013)**
Design Rules of Shot-Nailed Steel Sheeting Connection at Ambient and Elevated Temperatures.
Engineering Structures, Vol. 49, pp. 963-972. (5 years impact factor: 1.754)
- **Lu, W., Ma, Z., Mäkeläinen, P., Outinen, J. (2012)**
Behaviour of shear connectors in cold-formed steel sheeting at ambient and elevated temperatures".
Thin-Walled Structures, Vol. 61, No.12, 2012, pp.229 -238. (5 years impact factor: 1.477)
- **Lu, W., Mäkeläinen, P., Outinen, J. and Ma, Z. (2011)**
Design of Screwed Steel Sheeting Connection at Ambient and Elevated Temperatures.
Thin-Walled Structures, Vol.49, No.12, 2011, pp.1526-1533. (5 years impact factor: 1.477)
- **Total numbers of papers of Int. Conferences with referee practices: 10 kpl**



Students' theses →

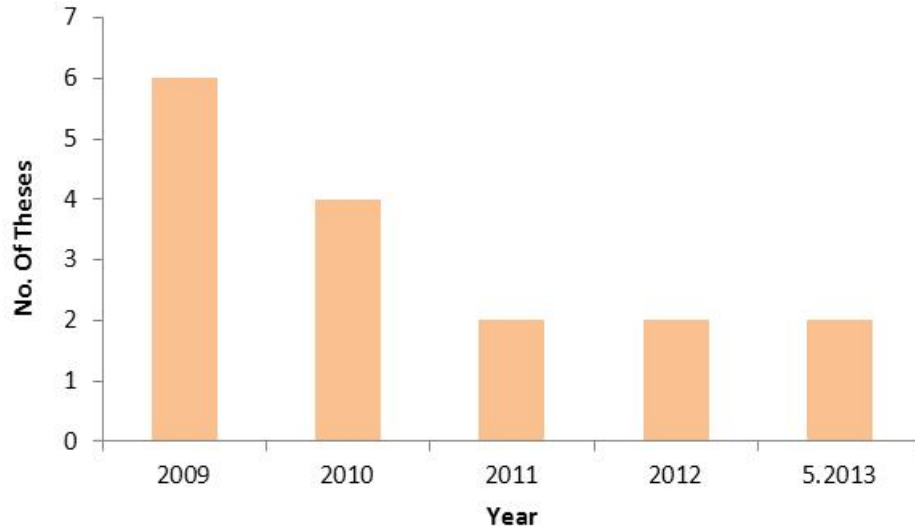
International

- South-korea, P.R.China, India, Turkey,
- Russia, Ukrain, Italy, Spain, Estonia, Latvia
- Finland



Students' theses → statistics

- Finished theses in last 5 years



- From year 2011 –
 - ✓ Finished
 - M.Sc. (5 kpl)
 - Lic.Sc. (1 kpl)
 - Ongoing
 - M.Sc. (3 kpl)

Finished theses from year 2011

Licentiate thesis

Author	Year	Title
Alpo Lehtinen	2011	Free standing triangular lattice tower

Master's theses

Authors	Year	Title
Antti Pekkala	2013	Design of tall buildings with steel and composite frame structures
Pia Räisänen	2013	Minimizing the mass unbalance response of a fan shaft
Anne Lindblad	2012	Intumescent coated steel structures intended for exterior environments
Juan Francisco Moya Manes	2012	Rules for buckling design of steel tapered columns
Adam Horvath	2011	Design of the main structures of a boiler house

