

A!ENG Research Lab

**A course on science, research and
scientific writing**

 **ENG-LV**
~~Yhd-12.Z~~ **A!ENG Research Lab, 12.4.-17.5.2018**
School of Engineering
Aalto University

Course coordinator: Leena Stenberg (leena.stenberg@aalto.fi)

Today's program

- **Introduction to the course**
- **Doctoral thesis**
Prof. Harri Koivusalo, Head of doctoral committee of ENG
- **Break**
- **Science, research and scientific writing + Research plan**
Univ. Lecturer Marko Keskinen
- **Briefing for essay writing and next session (19.4.)**

We try to finish today a bit after 3pm.

A!ENG Research Lab

In this course you learn:

- The aims and requirements for doctoral degree in A!ENG
- The basic principles of science
- The role of research method in science
- Skills in scientific writing and in outlining a scientific manuscript
- Management of time and research work
- On the importance paying attention to well-being
- Interaction, group working and reflection skills

In addition, you get a good chance to meet and discuss with your peers

A!ENG Research Lab

- Arranged by **School of Engineering**
- **Course coordinator:** *Postdoc. Leena Stenberg (leena.stenberg@aalto.fi)*
- **Responsible professor:** *Prof. Harri Koivusalo, Head of doctoral committee of School of Engineering*
- **For doctoral candidates in early phase of research and studies**
- **3 credits / 2 credits without scientific writing part (ECTS)**
- **Seven contact sessions, **only one non-attendance allowed!****

Schedule and content

- Thursday 12.4., Doctoral thesis process
- Thursday 19.4., Scientific method
- Thursday 26.4., Research methodology
- Wednesday 2.5., Scientific writing
- Thursday 3.5., Scientific writing: group work (no lecture)
- Friday 4.5., Scientific writing
- Tuesday 8.5., Career and well-being
- Thursday 17.5., Planning of research and time management

Time: 12.15-16.00 (latest), except for scientific writing: Wed and Fri 9.00-16.30

Location: TU6, U119, U406a, TU3, **check from MyCourses!**

Teaching methods

- **Pre-reading before the lectures (important to read)**
- **Discussion of pre-reading materials**
- **Lectures**
- **Individual and group exercises during the sessions**
- **One group work (takes one or half day)**
- **Reflective essay (to be returned before the next session)**

Lecturers

- **Prof. Harri Koivusalo**
Water and Environmental Engineering, Aalto University
- **Univ. Lect. Marko Keskinen**
Water and Environmental Engineering, Aalto University
- **Postdoc. Timo Räsänen**
Water and Environmental Engineering, Aalto University
- **Sen. Univ. Lect. Panu Kiviluoma**
Engineering Design, Aalto University
- **Prof. Emeritus Bengt Lundberg**
Applied Mechanics, Uppsala University, Sweden
- **Nina Lyytinen**
Psychologist, Terveystalo
- **Seija Leppänen**
Psychologist, Learning services, Aalto University
- **Assoc. Prof. Jani Romanoff**
Marine Technology, Aalto University

Course information and materials

- All is in MyCourses
- <https://mycourses.aalto.fi/course/view.php?id=19512>
- Further questions: leena.stenberg@aalto.fi

Reflective essay instructions

- **Write essay from each session**
 - Altogether 6 essays (one from scientific writing)
- **1-2 pages**
 - e.g. Times New Roman 12, line spacing 1.15
- **Guiding questions for each essay in MyCourses**
- **Do not just repeat what was in the Power Point slides; Write from **your own personal perspective****
- **Return**
 - Return box in MyCourses
 - Preferably format: .pdf
 - **Deadline before the next session!**
- **Instructions also in MyCourses**



Scientific method session next week

- **Reading from book: Scientific method in Brief (Gauch 2012)**
- **Seven groups**
 - All groups: Introduction
 - Group 1: Four bold claims
 - Group 2: Science's contested rationality
 - Group 3: Science's presuppositions
 - Group 4: Science's power and limits
 - Group 5: Logic and reasoning: deduction, Induction and common fallacies
 - Group 6: Parsimony and efficiency
 - Group 7: Ethics and responsibility
- **Reading materials available in MyCourses. Need to login!**

Scientific method session next week

- **We make posters next time on your reading**
 - Everyone needs to be able to present. **Read well.**
 - While reading, try to make notes on the key points of the text -> This helps making the poster next week!
 - Some of the texts are demanding -> **Start reading well before the next session**, NOT at the last minute!