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)
Todays 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 finnish 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!