STUDY GUIDE (FT3IOFA)

Version 2025-10-14 (version 2)

PM13 Engineering and Research Ethics, 5 hec

Ingenjörs- och forskningsetik, 5 högskolepoäng

Introduction

Welcome to the course, Engineering and Research Ethics, a 5-credit course offered within the graduate school Industrial Product Realisation at the School of Engineering, Jönköping University. The course is developed in collaboration with the national graduate school Production 2030.

Course content

The course covers the major themes and concepts in research and engineering ethics, such as the professional responsibilities of engineers, dual-use problems, whistleblowing, scientific misconduct, authorship and credit in research, informed consent, conflicts of interest, and the engineer's responsibility for sustainable development. Professional engineering codes of ethics and major research ethical declarations will be introduced.

Some of the topics studied during the course are:

- Critical discussion of laws and regulations that regulate research and engineering ethics,
- fraud and misconduct in science,
- the ethics and value of technology and scientific progress,
- ethical aspects of research collaborations,
- intellectual ownership,
- authorship and scientific writing issues, and
- the scientist in society.

Learning outcome

On completion of the course, the student should:

Knowledge and understanding

- demonstrate knowledge and understanding of laws and regulations governing research ethics in general and engineering sciences in specific, and
- demonstrate knowledge and understanding of good research practice, as agreed on European, national (Sweden), and institutional (Jönköping University) levels.

Skills and abilities

- demonstrate the ability to identify ethical challenges for researchers involved in the development and implementation of new technologies in society,
- describe and analyse the ethical challenges affecting one's own research field and research practice, and
- apply laws, regulations and guidelines governing research involving general data management and data management involving humans and personal data.

Judgement and approach

- demonstrate the ability to make assessments of ethical aspects of his or her own research, and
- demonstrate insight into the possibilities and limitations of research, its role in society and the responsibility of the individual for how it is used.

Type of instruction

Lectures and seminars.

Teaching is conducted in English or Swedish, depending on the requirements of the participants.

Prerequisites

Admitted to a third-cycle programme or equivalent.

Examination and grades

The course is graded Fail (U) or Pass (G).

The grade Pass requires active participation in seminars and the completion of written assignments

Name of the Test	Value	Grading
Assignments	3 credits	U/G
Seminars*	2 credits	U/G

*Active attendance in seminars is mandatory.

Teachers (preliminary)

The course responsible and examiner is Professor Kristina Säfsten, Department of Product Development, Production, and Design, School of Engineering, Jönköping University.

e-mail: kristina.safsten@ju.se

Phone/text: 036-101639/0706-777851

Professor Myriam Aries, Department of Construction Engineering and Lighting Science, School of Engineering, Jönköping University.

Professor Thomas Taro Lennerfors, Department of Civil and Industrial Engineering, Industrial Engineering and Management, Uppsala University.

Assignments and seminars

The course includes three assignments, all of them presented and discussed at compulsory seminars.

Assignment 1: Npof case analysis

Npof = Swedish National Board for Assessment of Research Misconduct

Assignment 2: Principles of professional ethics – an international comparison and practical application

Assignment 3: Assessment of engineering and research ethical aspects of your own research

Schedule 2026 (preliminary)

When	Topic and description	Responsible
Before the meeting	*Preparation:* Reflect individually on what ethics in research and engineering imply for you. Make some notes and bring them to the meeting.	Doctoral students
19 January 2026, 10-15	Introduction: Course content and design • Why ethics? • The role of ethics in science and technology • Historical examples of ethical violations Reflect: What is ethics in research and engineering for you?	Teacher: Kicki Säfsten
Before the meeting	*Preparation*: Read the steering documents related to research ethics from your university and chapters 2-4 and 6 in *Good Research Practice*. Reflect on the research practice in your environment. How is that aligned with rules and regulations? Write a reflection and hand it in before the meeting.	Doctoral students
10 February 2026, 10-15	Meeting 2: Good research practice and scientific misconduct Discussion: What is the research practice in your context? (based on the students' reflections)	Teacher: Kicki Säfsten
Before the meeting	*Preparation*: Read The Act (2003:460) concerning the Ethical Review of Research Involving Human.	Doctoral students
3 March 2026 10-15	Meeting 3: Ethical approval Practical exercise and discussion.	Teacher: Myriam Aries
March 19, 2026, kl. 10-15	Assignment 1 seminar	Doctoral students
Before the meeting	*Preparation:* Read Lennerfors (2019). Note difficult things and take the opportunity to bring those up with Thomas during the lecture.	Doctoral students
April 14, 2026, kl. 9-15	Meeting 4: Basic ethical theories (duty ethics, consequentialist ethics, virtue ethics), introduction of a model for the consideration of ethical issues. Exercise: Work with the model to assess and discuss thical dilemmas.	Teacher: Thomas Lennerfors
Before the meeting	*Preparation:* Watch one of the films and reflect on current ethical challenges for engineers and researchers within engineering science. Sign up for one of the films and create small discussion groups.	Doctoral students
April 29, 2026, kl. 10-15	Meeting 5: Engineering ethics professional codes – historical development and current practice.	Teacher: Kicki Säfsten

	Discuss the reflections from watching the movies in relation to professional codes. Discuss the role of codes.	
May 12, 2026, kl. 10-15	Assignment 2 seminar	Doctoral students
June 4 and 5, 2026, kl. 9-16	Assignment 3 seminars	Doctoral students

Course literature

Compulsory readings

Lennerfors, Thomas Taro (2019) *Ethics for Engineers*, Studentlitteratur, Lund, Sweden. (also available in Swedish)

Swedish Research Council (2024) *Good Research Practice*, VR2405, Dnr 5.2-2022-06129. https://www.vr.se/english/analysis/reports/our-reports/2025-07-03-good-research-practice-2024.html. Available in Swedish and English.

Allea (2023) *The European Code of Conduct for Research Integrity*, https://allea.org/wp-content/uploads/2023/06/European-Code-of-Conduct-Revised-Edition-2023.pdf.

The Act on Responsibility for Good Research Practice and the Examination of Research Misconduct, (Lagen (2019:504) om ansvar för god forskningssed och prövning av oredlighet i forskning),

The Ordinance on Exemptions from Investigation of Misconduct in Defency and Security Policy Research (Förordningen (2019:1176) om undantag från prövning av oredlighet i forskning inom det försvars- och säkerhetspolitiska området).

The Act (2003:460) concerning the Ethical Review of Research Involving human, (Lagen om (2003:460) etikprövning av forskning som avser människor, https://www.riksdagen.se/sv/dokument-och-lagar/dokument/svensk-forfattningssamling/lag-2003460-om-etikprovning-av-forskning-som_sfs-2003-460/.

Policies, rules and regulations related to research and engineering ethics at your university.

Films

Oppenheimer (2023)

The Wind Rises (2013)

Additional readings (preliminary)

Børsen, T., Martin, D. A., Tormey, R., Lennerfors, T. T., & Bombaerts, G. (2024). *The Routledge International Handbook of Engineering Ethics Education*. (1st ed.). Taylor & Francis Group. https://primo.library.ju.se/permalink/46JUL_INST/1kh77vo/alma998435761403831

Lennerfors, T.T. and Murata, K. (2023) ”Innovation Ethics”, In: Rehn, A., & Örtenblad, A. (Eds.). (2023). *Debating Innovation : Perspectives and Paradoxes of an Idealized Concep,* Springer International Publishing. https://doi.org/10.1007/978-3-031-16666-2. (pp. 33-53)

Johnson, D. G. (2020). *Engineering ethics: contemporary and enduring debates*. Yale University Press. https://doi.org/10.12987/9780300252798

SOU 2017:10, *Ny ordning för att främja god sed och hantera oredlighet i forskning*, Betänkande av Oredlighetsutredningen, https://www.riksdagen.se/sv/dokument-och-lagar/dokument/statens-offentliga-utredningar/ny-ordning-for-att-framja-god-sed-och-hantera_h5b310/. (In Swedish)

Chapter 8 in Säfsten, K, & Gustavsson, M. (2024). *Research methodology for engineers and other problem-solvers*, Studentlitteratur, Lund, Sweden. (also available in Swedish)

European Research Council provide several guides, see here: https://erc.europa.eu/manage-your-project/ethics-guidance, for example, *How to complete your ethics self-assessment*, EU grants.