

## **Gender and Technology**

Division of History of Science, Technology and Environment, KTH

### **Course Memorandum**

#### **Introduction**

Why are most engineers men? Are there “male” or “female” technologies, and if so, why? How are our ideas of gender shaped? This course takes a social, cultural, philosophical, and historical journey through the relationship between gender and technology. Challenging the assumption that technologies can ever be gender-neutral, either in their design or in their use, we will explore the co-construction of gender and technology in several fields. The course also provides a basic understanding of the interplay between gender and technology in history, for instance in the fields of organization of labour and the introduction of new technologies. The course incorporates critical gender awareness into understanding the processes of designing and developing new technologies.

#### **Course Organization**

The course is an online course consisting of eight course events, each consisting of a lecture and an hour of live interaction in the form of a seminar or workshop. Some lectures are live on Zoom, while others will be pre-recorded, in which case they you should view it and take notes prior to the seminar where the lecturer will be present. You will mostly use the following Zoom room: <https://kth-se.zoom.us/j/4133736530>, but in some cases you will be in another room. This will be confirmed before every class. The course schedule contains the dates, themes and list of readings. A short and an extended schedule are included at the end of this syllabus.

You will read and comment upon texts before each lecture, either as short essay interventions or as design exercises. During the seminars you will discuss the lecture contents and the readings in more depth. You will be given short written assignments that have to be handed in (uploaded to Canvas) before class.

The attendance of lectures and seminars is *mandatory*. Absence from more than one course event will have to be made up for through additional writing assignments.

#### **Course Literature**

The course literature consists of selected articles and book chapters that will be uploaded on KTH's learning platform Canvas. The readings are mandatory.

#### **Canvas**

We will use KTH's learning platform Canvas as a means and forum for communication.

#### **Assessment and Grading**

The requirements for passing the course are regular attendance (75%), active participation in class, and the submission and approval of all written assignments. The written assignments are as follows:

1. For most course events, you have to prepare short reaction papers to the readings. The purpose of these short papers is to give the teachers an idea of the points you found interesting, surprising or puzzling in the course literature. You should include at least three questions that arose in your mind following the reading, which you can also raise during the seminars. Reaction papers should have a length of 300 to 400 words and must be uploaded on Canvas at the latest by 18:00 on the day before

class. The reaction papers and other short assignments are mandatory. They will be graded P/F.

2. The final essay assignment consists of a written essay of around 2500 – 3500 words. You will analyse a topic of your own choice that relates to one or several of the themes discussed in the course. You will draft a first idea of the topic you have chosen for your final assignment to be submitted 5 May 2021. For the final course event, you will provide a substantial draft of the essay assignment to be uploaded by 12 May 2021 and discuss it with a fellow student in opposition format (On 19 May 2021). The deadline for submitting your final assignment on Canvas is 27 May 2021. The final assignment is mandatory and will be graded A-F.

Here are some **essay guidelines**:

- Introduce the topic (the "so what?" question, catch the audience, make it interesting, why is it of general interest?)
- Establish the topic or the field of interest
  - a) asserting significance
  - b) stating current knowledgeScience is the art of producing convincing arguments, therefore, ground it in previous research and literature
- Summary of previous research (70% of the literature in your references should be from the course literature)
- Present your take (your own argument, contribution, twist)
- Argue your case
- Present your result and conclusions, discuss them (and their limitations), and situate them in the chosen field of knowledge.

Grading for the course will be based on the ECTS scale (A-F). The course examination is divided into two parts:

SEM1 – participation and overall activity in lecture and seminar sessions; short reaction papers and assignments. 4,0 credits, grade scale P/F.

UPP1 – final written assignment. 3,5 credits, graded A-F.

The common grade is determined through evaluation of both components, producing an overall A-F grade for the course.

The written assignment will be graded on the basis of your demonstrated ability to:

- refer to the course literature and, if needed, to other literature
- make correct references
- show an understanding and evaluation of concepts central to the course
- use the concept of "gender" in a meaningful way that goes beyond simple issues of "women", "men" or "equality"
- give examples of how attitudes towards gender and technology have changed over time
- clearly communicate an argument

For a higher grade (A-C) you should also be able to

- critically analyse statements or representations regarding gender and technological change applying the theoretical tools presented in the course
- critically evaluate the sources and literature used

- critically reflect on how their own as well as others' attitudes towards gender and technology may be formed through images of popular culture.

Your ability to reach these goals will depend on your ability to present and communicate your ideas in a clear way. It is important that your written assignments respect formal academic standards: by fully disclosing the literature and other source material used, by referencing the material in a distinct way, and by distinguishing your own ideas from those of others. Instructions on the standards of written academic work will be given to you in class.

### **Course Responsible Teachers**

Dr Lize-Marie van der Watt, Researcher at the Division of History of Science, Technology and Environment at KTH.

Contact: [sme2@kth.se](mailto:sme2@kth.se)

You should send course related correspondence to Lize-Marie.

Dr Katarina Larsen, Researcher at the Division of History of Science, Technology and Environment at KTH.

### **Guest Lecturers**

Dr Kati Lindström, *Researcher, Division of History of Science, Technology and the Environment, KTH*

Dr Justiina Dahl, *Senior Research Officer, Swedish Polar Research Secretariat*

Dr Alma Persson, *Senior Lecturer, TEMA Gender Studies, Linköping University*

### **Examiner**

Prof Nina Wormbs, *Division of History of Science, Technology and the Environment, KTH*

### **Add-on Studies**

For advanced studies within this field you may apply for a master's thesis in history of science and technology after completing this course (examensarbete inom teknikhistoria, AK221X, 30 cp).

### **Avoiding Plagiarism**

At KTH we work actively to prevent plagiarism. The definition of plagiarism is using someone else's ideas or work without acknowledging it. This is a serious offence that can lead to suspension from the university. Also check your abilities by taking "Refero – an anti-plagiarism tutorial" which you can find at [http://www.ub.gu.se/ref/Refero\\_eng/1intro.php](http://www.ub.gu.se/ref/Refero_eng/1intro.php). During the seminars we will give information about the correct way to make references. Your papers submitted at the seminars and your final essay will be screened using a text-matching tool in Canvas.

### **Special Needs**

If you are in need of any special support because of a diagnosis of dyslexia, Asperger's syndrome, hearing impairment, etc., you should contact FUNKA. E-mail: [funka@kth.se](mailto:funka@kth.se) phone: 08-790 70 98. They will inform and help you concerning support measures.

## Course Schedule Overview

Week 12	Wed 24 March, 14-16	<b>1. Course introduction</b> Lecturer: Lize-Marie van der Watt
Week 13	Wed 31 March, 14-16	<b>2. Gender and Science</b> Lecturer: Lize-Marie van der Watt
Week 15	Wed 14 April, 14-16	<b>3. Gender, Race and Technology</b> Lecturer: Lize-Marie van der Watt
Week 16	Wed 21 April, 14-16	<b>4. Living a laboratory life - gender, technologies, and testing</b> Lecturer: Justiina Dahl
Week 17	Wed 28 April, 14-16	<b>5. Technology, Identity and Domestic Spaces</b> Lecturer: Kati Lindström
Week 18	Wed 5 May, 14-16	<b>6. Gender and Engineering</b> Lecturer: Katarina Larsen Deadline: essay abstract
Week 19	Wed 12 May, 14-16	<b>7. Gender and Organizations in Working Life</b> Lecturer: Alma Persson Deadline: essay draft
Week 20	Wed 19 May	<b>8. Essay Opposition &amp; Evaluation</b> Lecturer: Lize-Marie van der Watt
Week 21	Wed 27 May	9. Essay due

## Extended Course Schedule

### 1. March 24 Course Introduction: What is Gender? Why is it Relevant for Understanding Technology?

*Teacher:* Lize-Marie van der Watt

*Format:* Live on Zoom, start 14:00. <https://kth-se.zoom.us/j/4133736530>

*Literature:*

Tannenbaum, C., Ellis, R.P., Eyssel, F. et al. "Sex and gender analysis improves science and engineering". *Nature* 575, 137–146 (2019) <https://doi.org/10.1038/s41586-019-1657-6>

Wajcman J. "Feminist theories of technology". *Cambridge Journal of Economics*, Vol. 34, No. 1, January 2010, pp. 143–152 <https://academic.oup.com/cje/article/34/1/143/1689542>

*Assignment:* The assignment consists of an in-class activity, where you will be asked to find arguments for gender analysis, and different understandings of gender based on the readings from the course. There will be a Discussion thread on Zoom which will be updated during the course. You can also use this as a resource for your essay.

## **2. March 31 Lecture and Seminar: Gender and Science**

*Teacher:* Lize-Marie van der Watt

*Literature:*

Schiebinger, L. *The Mind Has No Sex? Women in the Origins of Modern Science*. Cambridge: Harvard University Press, 1989, pp. 245-277.

Nye, R.A. "Medicine and Science as Masculine "Fields of Honor" *Osiris* 12 (1997): 60-79.

Richardson, Sarah Meredith Reiche, Heather Shattuck-Heidorn, Michelle Lynne LaBonte, and Therese Consoli. "Opinion: Focus On Preclinical Sex Differences Will Not Address Women's and Men's Health Disparities." *Proceedings of the National Academy of Sciences of the United States of America* 112, 44 (2016): 13419-13420.

*Assignment:* Write a short text reflection of 300 to 400 words on today's readings, to be uploaded to Canvas by 18:00 on the day before the lecture. Include 3 questions for discussion.

## **3. April 28 Gender, race, technology**

*Teacher:* Lize-Marie van der Watt

*Format:* Live on Zoom

*Literature:*

Linda Jackson et al Self-concept, self-esteem, gender, race and information technology use. *Computers in Human Behavior* 26 (2010) 323–328

Dorothy Kim et al Race, Gender, and the Technological Turn: A Roundtable on Digitizing Revolution *Frontiers: A Journal of Women Studies* 39, 1, (2018):149-177 (extract)

*Additional reading (not compulsory, but useful literature review section):*

Kimberley McGee, The influence of gender, and race/ethnicity on advancement in information technology (IT) in *Information and Organization* 28 (2018): 1-36

*Assignment:* Write a short text reflection of 300 to 400 words on today's readings, to be uploaded to Canvas by 18:00 on the day before the lecture. Include 3 questions for discussion.

#### 4. April 21 Living a laboratory life - gender, technologies, and testing

Teacher: Justiina Dahl

Format: Live on Zoom <https://kth-se.zoom.us/j/4133736530>

*Literature:*

Wajcman, J. ICTs and inequality: Net gains for women? in Avgerou C. et al (eds) *The Oxford Handbook of Information and Communication Technologies* OUP, 2009. DOI: 10.1093/oxfordhb/9780199548798.003.0025

Casper, Monica J., and Adele E. Clarke. "Making the Pap Smear into the 'Right Tool' for the Job: Cervical Cancer Screening in the USA, circa 1940-95." *Social Studies of Science* 28, no. 2 (1998): 255-90. <http://www.jstor.org/stable/285603>.

Oudshoorn, Nelly. "On Masculinities, Technologies, and Pain: The Testing of Male Contraceptives in the Clinic and the Media." *Science, Technology, & Human Values* 24, no. 2 (April 1999): 265–89. <https://doi.org/10.1177/016224399902400204>.

*Assignment:* Read one these recent popular media articles or find one of your own, and discuss it with the help of the concepts and ideas introduced in the literature.

- <https://techonomy.com/2020/01/is-ai-male/>
- <https://time.com/5520558/artificial-intelligence-racial-gender-bias/>
- <https://time.com/collection/davos-2020/5764698/gender-data-gap/>

Suggested reading & videos:

<https://www.youtube.com/watch?v=7LQfu05i-80>

<https://www.bbc.com/news/world-us-canada-47725946>

#### 5. April 21 Lecture and Seminar: Technology, Identity and Domestic Spaces

Lecture and Seminar, Kati Lindström

Format: Live on Zoom

*Literature:*

[https://www.jstor.org/stable/3103251?origin=crossref&seq=8#metadata\\_info\\_tab\\_contents](https://www.jstor.org/stable/3103251?origin=crossref&seq=8#metadata_info_tab_contents)

Ruth Schwartz Cowan. "The 'Industrial Revolution' in the Home: Household Technology and Social Change in the 20th Century." *Technology and Culture*, vol. 17, no. 1, 1976, pp. 1–23. JSTOR, [www.jstor.org/stable/3103251](http://www.jstor.org/stable/3103251).

Sarah Pink, 2004. "Engaging with Domestic Discovery: Masculinities at Home". in *Home Truths: Gender, Domestic Objects and Everyday Life*, Routledge, pp117-136.

*Assignment:*

- a) Write a short text reflection of 300 to 400 words on today's readings, to be uploaded to Canvas by 18:00 on the day before the lecture. Include 3 questions for discussion.
- b) Upload a short sketch/ abstract of your essay, containing your chosen theme/topic and your main angle/argument. Between 250 – 500 words.

## 6. May 5 Seminar: Gender and Engineering

Teachers: Katarina Larsen and Lize-Marie van der Watt

Format: Live on Zoom <https://kth-se.zoom.us/j/4133736530>

Literature: (to be confirmed)

Amy Sue Bix, "From 'Engineeresses' to 'Girl Engineers' to 'Good Engineers': A History of Women's U.S. Engineering Education", *NWSA Journal* 16/1 (Spring, 2004): 27-49.

Nathan Ensmenger, "Beards, Sandals, and Other Signs of Rugged Individualism: Masculine Culture within the Computing Professions", *Osiris* 30 (2015): 38-65.

Gendered Innovations case studies on gendered crash test dummies and machine translation <https://genderedinnovations.stanford.edu/case-studies/crash.html>

Assignment: 1. Write a short text reflection of 300 to 400 words, to be uploaded to Canvas by 6 pm on the day before the lecture.

Deadline: essay outline

## 7. May 12 Gender and Organizations in Working Life

Lecturer: Alma Persson

Format: Pre-recorded lecture, live seminar.

Literature

Assignments: Write a short text reflection of 300 to 400 words, to be uploaded to Canvas by 6 pm on the day before the lecture.

K. Ehrnberger, et al Visualising Gender Norms in Design: Meet the Mega Hurricane Mixer and the Drill Dolphia, *International Journal of Design* 6, 3 (2012): 85-98.

U. Mellström, The Intersection of Gender, Race and Cultural Boundaries, or Why is Computer Science in Malaysia Dominated by Women? *Social Studies of Science* 39, 6 (2009) : 885–907. DOI:10.1177/0306312709334636

H. Peterson, The Gendered Construction of Technical Self-Confidence: Women ' s Negotiated Positions in Male- dominated, Technical Work Settings, *International Journal of Gender, Science and Technology*, 2,1, (2010): 65–88.

*Non-mandatory reading (not on Canvas, but available through KTH Library)*

E. Kelan, Emotions in a rational profession: The gendering of skills in ICT work, *Gender, Work and Organization*, 15, 1 (2008): 49-71.

M. Salminen-Karlsson, M. The Problem in the Eye of the Beholder: Working with Gender Reforms in Computer Engineering. *International Journal of Gender, Science and Technology*, 3,2, (2011): 445–459.

## **8. May 19 Seminar: Essay Opposition**

Students will give each other feedback on the draft of their final assignments. We will have a final discussion and a course evaluation.

Read the essays that have been assigned to you and prepare for the opposition task according to the instructions that will be sent out before the seminar.

## **9. May 27**

Final deadline, essays.