# THEORIES OF SCIENCE – KULT8850/8851

## Formalities

### Credit points

In order to pass the course, you need to participate and write a course assignment (‘essay’). More information about the course assignment and the writing process is given below. The deadline for the course assignment is **January 10th, 2023**.

KULT8850 gives 7,5 credit points, with a course assignment text of 3000-4000 words.

KULT8851 gives 10 credit points, with a course assignment text of 5000-6000 words.

The course is given over six days, with lectures given on the following 3 x 2 days, from **09.15 to 15.45:**

**I. 12-13 October**

**II. 26-27 October**

**III. 9-10 November**

**Venue: Dragvoll campus, room D135**

The course is not given digitally or as a hybrid, only physically. Participation is mandatory, but some absence is accepted. If it amounts to one day, an extra written assignment must be submitted which covers the topic for that day. The course consists of lectures, group work and plenary discussions and peer-commentating on texts, and some flipped classroom. Texts will be given access to in Dropbox. Participants are expected to have read texts before each session.

### Lecturers

Thomas Berker, Associate Professor Terje Finstad, Professor Jonathan Knowles, Professor Vivian A. Lagesen, Associate Professor Astrid Rasch, Professor Marianne Ryghaug, Professor Knut H. Sørensen, Senior researcher Ivana Suboticki, Professor May Thorseth, and Research Professor Govert Valkenburg.

## About the course: Developing academic citizenship

The course gives a broad introduction to theories of science and social science and humanities scholarship, with an emphasis on the history and philosophy of science, the social organization, and the dynamics of various academic fields, including their strategies of producing knowledge, their efforts to provide epistemic authority, and the interaction between research and society. It also focuses on the epistemic aspects of scientific and scholarly communication practices, above all their role in the establishment of scientific validity and reliability. Research ethics, postcolonialism, and feminist perspectives on science are prominent topics in this regard.

The overall aim of the course is to help the participants in their development of what we call academic citizenship. Academic citizenship is a broad set of efforts and norms that relates to internal as well as external features of academic life. The main feature is the ability to reflect on academic work and its context. The course engages with issues such as philosophical assumptions underlying high-quality scholarship, the making of claims about truth and objectivity as well as professional and societal relevance of science, and the navigation of academic challenges.

Academic citizenship also requires some understanding of the context of academic work. The course provides insights into the history of science and academic scholarship as well as illuminates the key features of the modern university. The course has an underlying agenda of increasing the participants’ interdisciplinary sensitivities. This aimed achieved by the lectures that present insights departing from different scholarly fields. However, there will also be some collaboration between the participants during the course which will hopefully contribute some experience with interdisciplinary communication and interaction. In addition, we shall discuss concepts useful for making sense of interdisciplinarity.

NB! Please note that the aim is not to offer tailor-made approaches that you simply may “plug” into your dissertation work. Rather, the goal is to provide intellectual resources that are useful for coping with and hopefully better succeed in the academic system. The goal is to promote the becoming of academic citizenship, but also to enhance a greater understanding of scientific knowledge to be used outside academia. The academic citizen is an able researcher, an engaged teacher, a skillful professional, a reflexive intellectual, and an active participant in academic life as well as in wider society. S/he is needed at the university as well as in society.

## Required readings

Readings are listed under each of the lectures. All of the literature will be made available to the participants in a drop box folder to which you will be given access. Some articles can be found online and are provided with a link in the programme.

Reading and preparing for lectures: All the essential literature must be read before the lectures. Please make sure to prepare some comments/questions for the readings.

# Programme

## Day 1. Wednesday 12th October

**0915 Welcome and practical information. Round of presentation – what is my project?**

0945 Group work: Applying Theories of science

1000 Break

**1015 What are theories of science for? Academic citizenship and the practice of reflection.**

*Essential reading*:

* Bruce Macfarlane. 2007. Defining and Rewarding Academic Citizenship: The implications for university promotions policy. *Journal of Higher Education Policy and Management*, 29(3): 261-273.
  + Robert Merton. 1973 (1942). The normative structure of science, reprinted in Storer, Norman W. (ed) *The sociology of science. Theoretical and empirical investigations*. Chicago: The University of Chicago Press. Originally published as ‘Science and technology in a democratic order’, *Journal of Legal and Political Sociology,* 115-26 (1942).
  + Joan Wallach Scott. 2019. *Knowledge, power and academic freedom*, Columbia University Press, p. 1-14.

*Additional reading:*

* Daniel Sarewitz. 2016. Saving science. *The New Atlantis* 49 (Spring/Summer): 4-40.

1200 Lunch

**1300 Terje Finstad: History of science and changes in the scientific life. Situating and historicising your own discipline/subject.**

*Essential readings:*

* William Clark. 2008. *Academic charisma and the origins of the research university*. University of Chicago Press, p. 435-476.

*Additional readings:*

* Lorraine Daston and Peter Galison. 1992. The image of objectivity. In: Representations 40, p. 81-128
* Steven Shapin. 2010. Never pure. Historical studies of science as if it was produced by people with bodies, situated in time, space, culture, and society, and struggling for credibility and authority. The Johns Hopkins University Press, p. 1-15.

1400 Break

1415 Finstad, cont.

1430 Group work and plenary: present your discipline.

Participants will receive written instructions in advance.

1515 Break

1545 End

## Day 2. Thursday 13th October

**0915 Govert Valkenburg: Science as practice**

*Essential readings:*

* H.M. Collins and Steven Yearly (1992). Epistemological Chicken, pp. 301-326 in Andrew Pickering (ed.): *Science as Practice and Culture*, Chicago: University of Chicago Press
* Michel Callon and Bruno Latour (1992). Don’t throw the baby out with the Bath School! A reply to Collins and Yearley, pp. 343-368 in Andrew Pickering (ed.): *Science as Practice and Culture*, Chicago: University of Chicago Press
* Noortje Marres (2018). Why We Can't Have Our Facts Back. *Engaging Science, Technology and Society,* vol. 4, 2018.

*Additional reading:*

* Valkenburg, G. (2021). Engineering as a socio-political practice. In D. P. Michelfelder & N. Doorn (Eds.), *The Routledge Handbook of Philosophy of Engineering*. Routledge. [While strictly about engineering and not scientific research, much of this chapter resonates and pertains to science.]
* Suchman, L. (2014). Reconfiguring practices. In C. Coopmans, J. Vertesi, M. E. Lynch, & S. Woolgar (Eds.), *Representation in scientific practice revisited* (pp. 333-335). MIT Press.

1000 Break

1015 Valkenburg, contn.

1100 Break

1115 **Govert Valkenburg: The work of Bruno Latour**

*Essential reading:*

* Ava Kofman (2018). Bruno Latour, the post-truth philosopher, mounts a defense of science. *The New York Times Magazine*, 25 October 2018.
* Gerard de Vries (2016). *Bruno Latour.* Cambridge: Polity.Chapter 5:A Philosophy for Our Time.
* Bruno Latour (2005), *Reassembling the Social. An Introduction to Actor-Network Theory*. Oxford: Oxford University Press. Pages 63-120.

*Additional reading:*

* The whole volume by Gerard de Vries offers a complete (and in my view the best) introduction to Latour’s work. As Latour himself wrote in a tweet: much better to read these 200 pages than the 5000+ that I wrote myself…
* Michael Lynch (2020) We have never been anti-science: reflections on science wars and post-truth. *Engaging Science, Technology and Society,* vol. 6, 2020.
* Holman, B. (2020). STS, Post-truth, and the Rediscovery of Bullshit. *Engaging Science, Technology, and Society*, *6*, 370-390.

1200 Lunch

1300 Valkenburg, contn.

1345 Break

1400 Valkenburg, contn.

1445 Break

1500 **Course assignment work**

1545 End

## Day 3. Wednesday 26th of October

**0915 May Thorseth: Research ethics**

*Essential reading:*

* Guillemin, M & Guillam, L (2004) Ethics, reflexivity and “ethically important moments” in research. Qualitative Inquiry. 10(2):261-280. [https://doi.org/10.1177/1077800403262360](https://doi.org/10.1177%2F1077800403262360)
* Kaiser, M (2014) The integrity of science. Lost in translation? Best practice & Research Clinical Gastroenterology. 28(2):339-347. <https://doi.org/10.1016/j.bpg.2014.03.003>
* Ruyter, K.W. (2019) The history of research ethics. Available at : <https://www.forskningsetikk.no/en/resources/the-research-ethics-library/systhematic-and-historical-perspectives/the-history-of-research-ethics/>
* Sarewitz, D (2016) The pressure to publish pushes down quality. Nature. 533:147.

Recommended additional reading: browse through the NESH guidelines.

Available in both Norwegian: <https://www.forskningsetikk.no/retningslinjer/hum-sam/forskningsetiske-retningslinjer-for-samfunnsvitenskap-og-humaniora/>

or English: <https://www.forskningsetikk.no/en/guidelines/social-sciences-humanities-law-and-theology/guidelines-for-research-ethics-in-the-social-sciences-humanities-law-and-theology/>

1000 Break

1015 Thorseth, contn.

1100 Break

1115 Thorseth, contn.

1200 Lunch

1300 **Jonathan Knowles: Philosophy of Science**

*Essential readings:*

* Overview of field. Excerpts from Chapter 1, Jonathan Knowles, *Theory of science: A Short Introduction*, p. 21-30.\*
* Gaukroger, Stephen. 2012. *Objectivity: A Very Short Introduction*. Oxford: Oxford University Press, Chapter 1.\*
* Popper, Karl. 1972. The Bucket and the Searchlight: Two Theories of Knowledge. Appendix to Objective Knowledge*. An Evolutionary Approach*. Oxford: Oxford University Press.\*
* Kuhn, Thomas S. 2012. Postscript - 1969. In *The Structure of Scientific Revolutions*, 173-208. Fourth edition. Chicago: University of Chicago Press.\*
* H.G. Gadamer 'The universality of the hermeneutical problem' in his *Philosophical Hermeneutics,*ed. D. Linge, California UP 1976.\*

*Additional readings:*

* S Harding '"Strong objectivity" and socially situated knowledge' Chapter 6 of her *Whose Science? Whose Knowledge?* Cornell UP 1991.\*
* M. Foucault 'The Discourse on Language' Appendix to T*he Archaeology of Knowledge.* New York, Pantheon Books 1972.\*

1545 End.

## Day 4: Thursday 27th of October

**0915 Astrid Rasch: Decolonizing knowledge production and objectivity**

*Essential reading:*

* Bhambra, Gurminder. 2014. Postcolonial and decolonial dialogues, *Postcolonial Studies*. 17.2. pp. 115-121. (8 pages)
* Decolonising SOAS, 'Learning and Teaching Toolkit for Programme and Module Convenors') (som norskspråklig alternativ: SAIH, 'En introduksjon til avkolonisering av akademia') (in dropbox)
* Shearer, Kathleen and Arianna Becerrill-García. 2021. Decolonizing scholarly communications through Bibliodiversity, Zenodo.org (10 pages)

*Additional reading:*

* Quijano, Anibal. 2007. Coloniality and Modernity/Rationality, *Cultural Studies*. 21:2-3 (12 pages)
* Kanu, Yatta. 2006. Introduction to Curriculum as Cultural Practice: Postcolonial Imaginations (28 pages)

1000 Break

1015 Rasch, contn.

1100 Break

1115 Rasch, cont.

1200 Lunch

1300 **Ivana Suboticki: Feminist theories of science**

*Essential reading:*

* Donna Haraway. 1988. Situated knowledges: The science question in feminism and the privilege of partial perspective." *Feminist studies* 14(3): 575-599.
* Moser I. Sociotechnical Practices and Difference: On the Interferences between Disability, Gender, and Class. *Science, Technology, & Human Values*. 2006;31(5):537-564. doi:[10.1177/0162243906289611](https://doi.org/10.1177/0162243906289611)

*Additional readings:*

* Margaret Rossiter: The Matilda-effect in science. 1993. Social Studies of Science. Vol 23: 325–341.
* Sørensen, K. H. and Lagesen, V. A. (2022): Divergent Diversity (unpublished paper).

1345 Break

1400 Suboticki, contn.

1445 Break

1500 **Course assignment work**

1545 End

## Day 5. Wednesday 9th November

0915 **Marianne Ryghaug: Interdisciplinarity and the question of objectivity**

*Essential readings:*

* Klein, J. T. (2010). A taxonomy of interdisciplinarity. The Oxford handbook of interdisciplinarity, 15, 15-30.
* Winskel, M. (2014). Embedding social sciences in interdisciplinary research: recent experiences from interdisciplinary energy research. Science as Culture, 23(3), 413-418.
* Felt, U. (2014) Within, across and beyond: Reconsidering the role of Social Sciences and Humanities in Europe, Science as Culture, 23(3), pp. 384–396.

*Additional readings:*

* Winskel, M. (2018). The pursuit of interdisciplinary whole systems energy research: Insights from the UK Energy Research Centre. Energy Research & Social Science, 37, 74-84.
* McDowall, W., & Geels, F. W. (2017). Ten challenges for computer models in transitions research: Commentary on Holtz et al. Environmental Innovation and Societal Transitions, 22, 41-49.

1000 Break

1015 Ryghaug, contn.

1100 Break

1115 Ryghaug, contn.

1200 Lunch

1300 **Knut H. Sørensen: The university as a place and a context for research: Academic freedom and autonomy, the quest for excellence, and strained collegiality.**

*Essential reading:*

* Knut H. Sørensen and Sharon Traweek: *Questing Excellence in Academia: A Tale of Two Universities* (forthcoming, Routledge). Chapter 3. In the Shadows of Excellence and Neoliberal Interventions: Enactments of Academic Autonomy and Strained Collegiality (33 p.)

1345 Break

1400 Sørensen, contn.

1445 Break

1500 **Mini-workshop:** Reviewing existing scholarship and the challenges of making factual claims from previously published research: the importance of context and time when selecting and quoting publications.

1545 End

## Day 6. Thursday 10th November

**0915 Thomas Berker: Science communication and public engagement**

*Essential reading:*

* Wynne, Brian. 2006. Public Engagement as a Means of Restoring Public Trust in Science – Hitting the Notes, but Missing the Music? Public Health Genomics 9 (3): 211–20.\*

*Additional readings:*

* Collins, H.M. and Robert Evans. 2002. The Third Wave of Science Studies: Studies of Expertise and Experience. Social Studies of Science 32 (2): 235–96.\*
* Davies, Sarah R. and Maja Horst. 2016. Science Communication: Culture, Identity and Citizenship. 1st ed. Palgrave Macmillan UK.

1000 Break

1015 Berker, contn.

1100 Break

1115 **Wrapping up; academic citizenship and evaluation**

*Essential Reading*:

* + Bruno Latour. 1987. *Science in Action. How to follow scientists and engineers through society.* Open University Press, p. 21-62

*Additional readings:*

* + Philip Mirowski. 2018. The future (s) of open science. *Social studies of science* 48(2): 171-203.

1200 Lunch

1300 **Group work - introductory comments**

1315 Group work assignments

1530 **Wrapping up, Q&A session**

1545 End