Syllabus

Theory of Science

Swedish title
Vetenskapsteori

Decision approval and date

Code
Mah0213

Credits
6 credits

Education cycle
Third cycle

Grading scale
Pass and fail

Knowledge prerequisites
Admission to a doctoral research training programme

Specialisation in relation to degree specifications

Intended learning outcomes
On completion of the course the doctoral student should be able to:

- understand and describe the development and main themes in theory of science during the twentieth century,
- identify, analyze, and critically discuss conceptual, ontological, epistemological, and methodological dilemmas in contemporary theory of science,
- demonstrate an insight into how evaluative and social judgements come into play in the scientific process, and
- put her/his own research and scientific discipline in contemporary theoryof-science context, and be able to participate in philosophical discussions about the issues raised in the course.

Course description

The purpose of the course is for the doctoral student to broaden and deepen her/his critical understanding of scientific research, and of how research disciplines are affected by various conceptual, epistemological, ontological, and evaluative assumptions.

Contents

The starting point is how logical positivism's original an objective empirical basis for scientific theories has shifted to an insight into how the empirical is dependent on context (paradigm, research program, etc.). The hermeneutic and critical perspectives of the social and human sciences have more or less eliminated the distinction between the empirical and the theoretical. These developments have led to a number of theoretical and evaluative dilemmas.

In the light of this development, the course is thematic, in that it picks out several key questions in theory of science that have been discussed during the twentieth century, for example, the justification of theoretical claims, the context dependency of empirical claims, the (ir) rationality of science, the place of values in science, the varieties of explanations in the natural and the social sciences, the social constructions of scientific facts, and feminist epistemology. These discussions also point to possible solutions of some of the dilemmas of contemporary science.

Work formats

The course is taught through interactive lectures complemented with discussion seminars. In order to promote discussion, the student is required to study the literature prior to each lecture/seminar. The course also includes a seminar where the student's final assignment will be presented and discussed. This assignment will primarily concern the relation of the themes of the course to the student's doctoral thesis and to her/his own discipline.

Formats for the assessment of student performance

The assessment of the student's performance will be based on active participation in discussions, submitted assignments, and an individual paper to be presented and discussed in the final seminar.

Literature: (Preliminary)

Andersen, E. (2009). "Feminist Epistemology": An Interpretation and a Defence. In Balashov, J. and Rosenberg, A. (eds.) (2002). *Philosophy of Science. Contemporary Readings*. London: Routledge. Selected chapters.

Bloor, D. (2002) The Strong Program in the Sociology of Knowledge, in Balashov, J. and Rosenberg, A. (eds.). *Philosophy of Science. Contemporary Readings*. London: Routledge, 438-458.

Fricker, M. (2011). Powerlessness and social interpretation. In Steel, D and Guala, F. *The Philosophy of Social Science Reader*. London: Routledge, 39-50.

Geuss, R, (1981). The Idea of a Critical Theory. Habermas & the Frankfurt School. Cambridge: Cambridge University Press, 1-3, 12-22.

Gärdenfors, P. Theoretical concepts and their function: (Teoretiska begrepp och deras funktion), in Bengt Hansson (ed.): *Metod eller anarki*, Avesta 1982.

Hempel, C. (1994). The Function of General Laws in History, In M. Martin and L.C. McIntyre, *Readings in the Philosophy of Social Science*. Cambridge, MA: Bradford Books, 43-53.

Hempel, C. (2002). Two Models of Scienctific Explanation. In Balashov, J. and Rosenberg, A. (eds.). *Philosophy of Science. Contemporary Readings*. London: Routledge, 45-55.

Kuhn, T. (1996, 2nd ed.[1969]). *The Stucture of Scientific Revolutions*, Postscript. Chicago: Chicago University Press, 174-210.

Kuhn, K. (2002[1970]). Objectivity, Value Judgement and Theory Choice. In Balashov, J. and Rosenberg, A. (eds.). *Philosophy of Science. Contemporary Readings*. London: Routledge, 421-437.

Haack, S. (2003). A Modest Proposal: A Sensible Program in Sociology of Science, in *Defending Science – Within Reason*. Amhearst, NY: Prometheus Books, 179-205.

Hacking, I. (1999). *The Social Construction of what*? Cambridge: Harvard University Press. Chapter 1. (35 p.)

Haslanger, S. *Resisting Reality. Social Construction and Social Critique*. Oxford: Oxford University Press, 16-22, 113-138.

Okasha, S. (2002). Realism and Anti-Realism. In *Philosophy of Science: A Very Short Introduction*. Oxford: Oxford UP, 58-77.

Popper, K. (1972, 4th revised ed.). Science: Conjectures and Refutations, in *Conjectures and Refutations*. London: Routledge and Kegan Paul, 33-59.

Ringer, F. (1997). *Max Weber's Methodology*. Cambridge, Mass: Harvard UP. 1-6, 150-151, 163-167.

Risjord, M. (2014). Objectivity, Vaues, and the Possibility of a Social Science, in *Philosophy of Social Science. A Contemporary Introduction*. New York: Routledge, 14-33.

Rosenberg, A. The Explanation of Human Action. In *Philosophy of Social Science*. Westview Press, 35-54.

Sayer, A. (2000). *Realism and Social Science*, 10-28, 67-80.

Shapere, D. (2002). "The Stucture of Scientific Revolutions". In Balashov, J. and Rosenberg, A. (eds.). *Philosophy of Science. Contemporary Readings*. London: Routledge, 410-420.

Weber, M (1999). "Objectivity" in Social Science. *Max Weber, Sociological writings*. http://www.marxists.org/reference/subject/philosophy/works/ge/weber.htm

Wylie, A. (2013). The feminism question in science. What does it mean to "do social science as a feminist"? In Steel, D and Guala, F. *The Philosophy of Social Science Reader*. London: Routledge, 51-61.

Other scientific text might be added to the list.

Transitional regulations

In situations when the course is no longer offered or the course contents have been significantly changed, the doctoral candidate has the right, during a period of one year following the change, to be examined on two different occasions in accordance with the syllabus in force at the date of registration.

Course evaluation

At the conclusion of the course, each student shall submit a written course evaluation based on the course's stated learning outcomes. The result of each course evaluation will be published on the course's online learning platform together with information on what measures have been taken to address issues that were highlighted in the course evaluation.