



The Council for Educational Development at the Faculty of Science and Technology (TUR)

invites you to the course

Scholarly Teaching in Science and Technology

English version of Ämnesdidaktisk kurs (next course in Swedish is planned for 2024)

The faculty of science and technology offers an extension course in scholarly teaching in science and technology. This is an English version of *Ämnesdidaktisk kurs*. The course is open for anyone with Academic Teaching Training Course, or similar pedagogical education and/or solid experience of education.

During the course we will discuss how students learn science, technology and mathematics, and how this learning can be improved through development of teaching and assessment. With concepts, models and results from discipline-based research as the theoretical starting point, practical exercises and discussions grounded in the personal teaching experience of the participants form an important part of the course. The scholarly approach is further developed in an individual project linked to participants discipline and educational practice.

Learning outcomes

After concluded course, the participant should be able to:

- implement and argue for scholarly teaching and educational development;
- plan, analyze and reflect upon teaching and assessment in relation to research results and proven practice regarding student learning within the participant's own discipline;
- discuss and evaluate higher education and pedagogical development using discipline-based education concepts, models and research results;
- find, evaluate and use different scholarly resources, such as journals and web sites, in teaching practice.

Course facts

Course days: 19-20 Sept, 10-11 Oct, 26 Oct, 11 Jan 2024 (full days)

Registration: To sign up, fill out and submit the form:

<https://doit.medfarm.uu.se/bin/kurt3/kurt/92344> *no later than August 31.*

The number of participants is limited to 20.

Course leaders: Stefan Pålsson, Magnus Jacobsson, Jannika Chronholm-Andersson and Maja Elmgren.

The course is free of charge, and is equivalent to 2 weeks of full-time studies. A course certificate will be provided after completed course.

Course content

The course combines theoretical elements, discussions and practical exercises. This overview presents some of the questions that will be treated during the course and the six overlapping themes of the content. Details of the course content will be adjusted to the backgrounds of the participants.

Introduction to scholarly teaching and discipline-based education research

- What is scholarly teaching
- How can we use discipline-based education research results?
- How does one relate to teaching and learning in a scholarly fashion?

Teaching and learning in context

- What ideas are there about learning, knowledge and communication in your discipline?
- What goals do students have for their education and how can those goals affect learning?
- How can we learn more about our students' goals and expectations?
- How do concepts such as identity and discourse relate to teaching and learning?

Student learning

- What is known about student learning in our disciplines?
- How can we learn more about student learning?
- What are the important threshold concepts in our disciplines? How can we help students understand them?
- How do students' preconceptions about scientific models as well as their prior knowledge and understanding influence their learning?
- How can student understanding of key concepts be explored?

Design of teaching

- How can one design education to facilitate deep learning and holistic perspectives?
- What is known about different forms of teaching and how they affect learning?
- What are the goals of laboratory work, excursions and other practical exercises? How do we achieve those goals?
- How can we improve the communicative skills of our students?

Goals, examination and goal fulfilment

- What are the goals in the official regulations and how do they relate to educational practice?
- What are the differences in the goals for our educational programmes?
- How do we measure achievement of learning goals? How can different types of skills and knowledge be measured?
- How can we work with constructive alignment between goals, learning activities and examination?
- How can teaching and educational design be evaluated?

Project and development

- How does one find findings and practices based on discipline-based education research?
- Which are the useful sources relevant to different disciplines in science and technology?
- How can discipline-based education research results be used to justify and support pedagogical development?

More information

If you have any questions regarding the course, the content or practical issues, please contact Stefan Pålsson, stefan.palsson@it.uu.se, phone 070 425 0213.