Associate professor in physics education research at the Center for Computing in Science Education

About the center and the department

Center for Computing in Science Education (www.mn.uio.no/ccse) is a Center for Excellence with the goal of becoming an international hub for research-based integration of computational methods in education. Even though the use of computing has changed the sciences and their practice, computing has sparsely been integrated in science educations. At the University of Oslo, we have over many years developed new courses and study programs, where programming and computing are integrated from day one. An important task for the center is to build a research basis for this educational development activity and to generally strengthen the physics education research activity. We are hiring an associate professor in physics education research with documented experience from studies of the impact of computing in physics education.

CCSE acts as a hub for educational development at the Faculty of Mathematics and Natural Sciences. The center aims to lead research-based development of new learning materials, methods and practices to study their effects and how they transform teaching culture and student learning, to involve students deeply in the development of new practices and methods, and to disseminate and adapt the practices and results across disciplines in collaboration with key partners. One example is implementing a training course for learning assistants in how to promote student-active learning in group sessions. CCSE is involved in integrating programming in education across the sciences – in physics, mathematics, chemistry, geoscience, and bioscience – and is expanding to other disciplines such as in the humanities. CCSE is also closely integrated with KURT, the Center for Teaching and Learning in Science, and is also involved in professional development of teachers – teaching them to integrate computing in disciplinary context in school education and developing a research-basis for this activity.

CCSE is a national Center for Excellence in Education from 2016 to 2026. CCSE will be integrated in the ordinary activity at the Faculty of Mathematics and Natural Sciences from 2026. The associate professor will be hired at the Department of Physics and will become part of the physics education research group at the Department of Physics after 2026.

The Department of Physics (add general description of the department from other permanent positions)….

Work tasks and responsibilities:
The associate professor is expected to build a research program focusing on the effects of the integration of computing in higher education physics education, to build an external funding portfolio to finance this activity, to supervise master and PhD-students in this field, and to contribute to the general teaching activities at the Department of Physics. The successful candidate is also expected to contribute to build a culture for teaching and learning by organizing and contributing to common workshops and meeting focusing on instructional design and development. It is expected that an associate professor in physics

education research also will contribute to help increase the quality of teaching at the Department.

Qualifications:

- The applicant must have a doctoral degree in the fields of physics education research or science education research
- The applicant must document research experience from studies of the impact of computing in physics education using qualitative research methods
- The applicant must have teaching experience in physics and/or physics education
- Experience from programs for building pedagogical competence in learning assistants or teaching faculty is an advantage
- Experience with basic Python programming and machine learning is an advantage
- Applicants must have excellent communication skills in a Scandinavian language and in English

We can offer

- **…**

Your application must include:

- CV
- A motivation for applying for the position (1-2 pages)
- A research plan (1-2 pages)
- An education philosophy statement (1-2 pages)
- Complete list of publications
- A list of no more than 10 academic works that the applicant would like to be taken into consideration in the assessment, including full references
- The names of three personal references, with contact information