

IØ8908 - Introduction to Research Based Innovation

Course content

This is an introductory course on research-based innovation.

As per the national qualifications framework (NQF) of Norway, a PhD qualification, in addition to subject expertise that expands the research frontier by developing new knowledge, also requires competence in assessing the need for, initiating and practicing innovation. This competence of putting knowledge in use for the betterment of society is also important for qualifying for the highest academic positions at academic institutions. Additionally, as an expert in their chosen field, a PhD is expected to effectively communicate and debate the theoretical and practical implications of their research, both nationally and internationally.

This course aims to develop knowledge about innovation in the academic context, stimulate action-orientation around research and to give participants the tools to work with and communicate the innovation potential of their research. Participants will learn about innovation (types, contexts, process) and work with their own research to evaluate its innovation potential.

The course is based on the framework for entrepreneurship education developed through research at SFU [Engage](#): Centre for Engaged Education through Entrepreneurship, a world leading centre of excellence in education. The course offers the opportunity to interact with experts from NTNU's Innovation Ecosystem including the Technology Transfer Office.

Learning outcome

The key goal of this course is to increase the competence of doctoral students and academic researchers to evaluate research in terms of its potential for innovation and take action to realize this innovation potential.

The course introduces the concept of entrepreneurial behaviour in the context of academic research. Participants will be oriented towards an understanding of entrepreneurial behaviour that emphasizes seeking/creating opportunities from new knowledge development, assessing the (societal) value of the opportunity and taking action to realize the opportunity under conditions of risk and uncertainty. The participants will therefore develop an action-orientation towards research, where the participants are able to assess research for its innovation potential and enhance their understanding of what it takes to commit oneself and take on a role as an innovator.

On completion of the course, candidates will possess the following:

Knowledge:

- Innovation and the value perspective on research-based innovation.
- Entrepreneurial behaviour and its link to innovation.
- Innovation in the research context, including the role of universities in creating societal value
- Evaluating innovation value in relation to user/ customer/societal needs.

- Innovation processes in the university context including considerations related to intellectual property (IP).

Skills:

- Ability to identify different applications of research results.
- Ability to evaluate research for its innovation potential in relation to needs of users, customers and other stakeholders.
- Ability to identify the needs for further developing and realizing the innovation potential of research.
- Ability to evaluate own values, motivation and role in an innovation process.
- Ability to effectively communicate the value of research to different audiences.

General Competence:

- Ability to assess potential for, initiate, and reflect on own role as a leader of innovation processes from research.

Learning methods and activities

The course will be offered in the spring semester. The course will consist of **three days** of lectures, interactive group work and student presentations. The three days are **split into two sessions** of two simultaneous class days, followed by a break of a few weeks, followed by a final class day. In addition, students are required to work on **pre, interim and post course assignments**. The course will use workshops, class discussions and presentations to give students insight into different aspects of the research-based innovation journey. This will be complemented by self-study of recommended literature. A detailed course plan and literature list will be provided before course start.

The learning of the course will arise from students *working with a concrete innovation idea*, using concepts and tools provided in the course, as well as through *reflection* on the students' work tasks related to generating and evaluating the innovation idea as part of the course. The students will be challenged to come up with an innovation idea within their own research or within the research of their fellow students. The students will work to evaluate the feasibility of the innovation idea, communicating their idea, getting feedback, and reflecting on this as a way of active learning from the course. The student is expected to take an active role in developing their own and others knowledge in the course.

The final delivery of the course will be a report on the innovation idea, and a reflection note.

Compulsory activities: Owing to the pedagogy of the course, where a substantial part of the learning in the course arises from classroom interactions with the lecturers and fellow students, physical attendance is mandatory for this course.

Pre-work: Students will be asked to prepare a short presentation of their research based on a set of guidelines for Day 1 of the course.

Interim work: between Day 2 and Day 3 of the course, the students will be required to gather some information related to evaluation of their innovation idea they are working with.

On the final day of the course (Day 3), students will work on preparing and presenting a 'pitch' of their innovation idea

Post - work: Students will prepare a report on their innovation idea and a reflection note which will be evaluated.

Further on evaluation

Assessment will be based on the term paper to be graded Pass/Fail.

Specific conditions

The course is primarily oriented towards PhD candidates at NTNU. Admission to a PhD programme of study at NTNU is required.

PhD candidates at other institutions, and other academic researchers are welcome to participate in the course, however, enrolment is subject to places being available after students from NTNU are accommodated. If you are from another institute, or not a PhD candidate, please contact us for availability and conditions of enrolment.

The course normally costs NOK 5,000 and is payable for all students. **In 2026, this fee is exempt** for PhD candidates enrolled in any Norwegian University, due to financial contribution from NTNU and Innovation Norway's national ecosystem funds.