



DEPARTMENT OF LEARNING, INFORMATICS, MANAGEMENT AND ETHICS

C7F5748, Assessing the Value of Medical Innovation, 3 credits (hec)

Utvärdera värdet av medicinsk innovation, 3 högskolepoäng

Third-cycle level / Forskarnivå

Approval

This syllabus is approved by the The Committee for Doctoral Education on 2023-12-27, and is valid from Spring semester 2024.

Responsible department

Department of Learning, informatics, Management and Ethics, Faculty of Medicine

Prerequisite courses, or equivalent

No prerequisite courses, or equivalent, demanded for this course.

Purpose & Intended learning outcomes

Purpose

Progress in medical innovation stands as a catalyst for worldwide economic growth. Whether within pharmaceuticals, medical devices, biotechnology, information technology, or a fusion of these advancements, the potential advantages extend significantly to private businesses and societal well-being. However, due to long development times and rigorous regulations, these innovative concepts require a lot of financing to establish their presence in the market. Consequently, assessing the value of novel medical innovations remains crucial. The primary objective of this course is to empower researchers with the proficient capability to effectively assess the worth of emerging technologies or processes within the medical industry.

Intended learning outcomes

Upon completing this course, Ph.D. students should be able to:

- Concisely outline the core of innovative medical industry technologies or procedural designs to validate such innovations.
- Apply the diverse skill sets of young professionals from various disciplines to work

interdisciplinary.

- Identify and learn the methodology of researching intellectual property rights associated with new medical technologies.
- Employ databases to gauge the potential scope of a market and perform a comprehensive written and verbal analysis.

Course content

The learning will build on "real cases" from challenge providers from various Swedish organizations, encompassing scientists, physicians, and engineers who harbour fresh ideas for innovations or processes. Site visits to industry partners, MedTech's, Biotech's and Pharma companies to explore their innovation strategies, learn market insights and expand students' professional network. Students will explore different presentation techniques and interdisciplinary communication strategies. A multifaceted evaluation process considers pivotal factors such as market size and potential, intellectual property dynamics, and the anticipated return on investment. Underlying this framework, student teams will actively participate in creating a comprehensive market assessment.

Forms of teaching and learning

The teaching will be a unique combination of skills from Karolinska Institutet and the Carlson Management School, utilizing blended activities, workshops and teaching material to highlight and contrast the similarities or differences between different geographical regions and regulatory bodies.

Through collaborative teamwork, PhD students and Postdocs from Karolinska Institutet will embark on a dynamic journey with peers from Minnesota University to conduct a rapid yet comprehensive market analysis of promising medical technologies and services. By engaging in this process, students will gain valuable insights into a spectrum of domains, ranging from university-driven innovations to the intricate operations of venture firms and the creative minds of inventors. This hands-on experience will give them a holistic understanding of how innovation and entrepreneurship intersect in medical technology, fostering a keen awareness of the challenges and opportunities ahead in this dynamic industry.

Language of instruction

The course is given in English

Grading scale

Pass (G) /Fail (U)

Compulsory components & forms of assessment

Compulsory components

Attendance is mandatory for all participants. Replacement activities can compensate for absence.

Forms of assessment

The grade will be determined by the assessments carried out within the framework of the course. Grading pass/fail will be contingent upon faculty member evaluations and innovation provider feedback.

Furthermore, passing will be determined on the final written assignment, a report delivery, which includes the following:

- An executive summary
- A detailed product description
- A comprehensive market demand analysis
- A fundamental assessment of intellectual property
- A pro forma return on investment analysis
- A conclusive recommendation

Course literature

Information and material presented at the mandatory sessions. Recommended extra reading material will also be presented.