FCK3230 Radical Innovations: Processes and Practices in the Forest and Pulp and Paper Industry 3.0 credits

Radikala innovationer: Processer och metoder inom skogs- och massa- och pappersindustrin

This is a translation of the Swedish, legally binding, course syllabus.

Establishment

Course syllabus for FCK3230 valid from Autumn 2024

Grading scale

P, F

Education cycle

Third cycle

Specific prerequisites

Eligible for studies at the third-cycle level.

Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

Intended learning outcomes

After completion of the course the doctoral student should have ability to

-Demonstrate knowledge within the course's specialty subjects, including an understanding of innovation management based on the Stage/Gate process example, and comprehend general principles of innovation management, milestones, deliverables, and the iterative nature of the innovation process.

-Construct a business case for a scientific problem using computer-based modeling within the course's subject area, focusing on the technical-economic and commercial aspects of the innovation process such as value propositions and business models.

-Reflect on the scientific problems with consideration for the environment, humanity, and society by developing an in-depth understanding of the various stages of the innovation process, from idea to feasibility, to identify where and how one can succeed in the market.

-Present and orally justify their own project results and critically evaluate their own and others' presented project results, based on lessons learned from experience sessions and customer stories.

Course contents

-Innovation Management Process

-Introduction to the Stage/Gate process and its adaptation in companies.

-Overview of the Project Management Office's role in innovation.

-Discussion on milestones and deliverables within the innovation process.

-Explanation of iterative approaches in innovation processes.

-Commercial aspects of innovation.

-In-depth exploration of value propositions and their importance

-Examination of business model frameworks and their application.

-Building a business case; identification and analysis of the essential building blocks for a business case.

-Technical concept and techno-economics in innovation project

-Detailed discussion on CAPEX/OPEX considerations, engineering aspects, and scaling challenges.

-Learning from Experience:

A) Insights from transitioning an idea from the lab to a start-up within a corporate environment.

B) Real-world customer stories and the journey to scaling up.

C) Reflecting on challenging projects.

D) Evaluating when to cease efforts on a project.

-A visit to an industrial facility to observe the transition from laboratory concept to small-scale manufacturing.

-An interactive session to gather insights from PhD students on the innovation processes and methodologies.

Examination

- TEN1 - Written exam, 2.5 credits, grading scale: P, F
- ÖVN1 - Exercise, 0.5 credits, grading scale: P, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

If the course is discontinued, students may request to be examined during the following two academic years.

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STU1, study visit (recommended)

Other requirements for final grade

DEL1, participation (at least 80 %)

Transitional regulations

If the examination form is changed, the student will be examined according to the examination form that applied when the student was admitted to the course. If the course is completed, the student is given the opportunity to be examined on the course for another two academic years.

Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.