ME1313 Industrial and Technical Transformation 6.0 credits

Industriell och teknisk omvandling

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

Establishment

Course syllabus for ME1313 valid from Spring 2017

Grading scale

A, B, C, D, E, FX, F

Education cycle

First cycle

Main field of study

Technology

Specific prerequisites

Completed upper secondary education.

At least 24 university credits of ME courses in CINEK including ME1305 and ME1310

Only for CINEK.

Language of instruction

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

Intended learning outcomes

After the course the students will:

- have deep knowledge on the mechanisms behind industrial and technical change/transformation with a focus on the scientific and the management aspects of these processes.
- have good knowledge on the research frontier in the area of management of innovation/technology using innovation concepts from evolutionary theory on industrial transformation and the role of entrepreneurship and creativity
- have a sound knowledge base for action in (management of) environments characterized by rapid industrial and technical change on several system levels.

Course contents

The course starts with a condensed summary of the theories (economic and others) of industrial and technical change (transformation) as well as of innovation theory. The course is focused on "meso" level, i.e. on a systems level were the units of analyses are industries, technologies and technological and innovation systems rather than firms or parts of firms. That includes analyzing the context (conditions, climate) for industrial and technical activity. The course continues with combining case analyses - historical cases as well as actual cases selected by the students themselves - with theory to deepen the understanding of the dynamics of industrial processes - thus contributing to a solid ground for management (and policy) analyses and decisions

Concepts like dominant design, various classifications of innovations (like architectural, modular or radical innovations) are introduced as are concepts related to learning, trajectories, innovation systems and development blocks. The innovation management concept is widened to include creativity and to include non manufacturing (service) sectors/activities.

The course is based on modern theory of management of innovation related to the new theory of the (resource based) firm and its dynamic capabilities. In addition the course is based on theories of knowledge formation and learning in firms and technical systems.

Disposition

Lectures.

Course literature

Academic articles and books (list available at course start)

Examination

- INL1 - Assignment, 2.0 credits, grading scale: P, F
- TEN1 - Examination, 4.0 credits, grading scale: A, B, C, D, E, FX, 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.

Other requirements for final grade

Passed examination

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.