



ME2067 Industrial Transformation and Technical Changes (IT-TEC) 6.0 credits

Industriell omvandling och teknisk förändring (ITTEC)

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

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

Establishment

Course syllabus for ME2067 valid from Spring 2018

Grading scale

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

Education cycle

Second cycle

Main field of study

Industrial Management

Specific prerequisites

Admitted to the master program TINEM.

Passed and finished the course ME2501 Perspectives on Industrial Management.

Language of instruction

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

Intended learning outcomes

After the course students will be able to:

- Analyze and discuss the mechanisms that underlie industrial and technological change and related industrial change due to transformation pressures such as global warming and radical shifts in technology.
- Critically review and evaluate the applicability of the theoretical concepts from the field of industrial dynamics for managing and leading technological and industrial change processes
- Analyze and critically discuss current research in the field of Industrial Dynamics with emphasis on innovation and entrepreneurship from an evolutionary economics perspective
- Critically analyze and discuss the implications of technological and industrial change processes based on ethical, political, economic and social aspects
- Independently formulate and define problem formulations to tackle complex change in industrial and technology intensive activities using data from different types of sources.
- Conduct a science-based analysis of policies, strategies, and processes related to industrial and technological change on multiple systems levels
- Write an academic paper based on a scientific study, and critically discuss the choice of method, theory, quality of results (validity - reliability)
- Present results and conclusions from a scientific investigation for different types of audiences

Course contents

The course is based on a consecutive series of lectures. In addition, the students are to conduct a study with the aim of analyzing an authentic company's handling of a current transformation process using theoretical concepts from industrial dynamics and "management of innovation". The examination is done through a series of workshops that focus on problem definition, purpose, research questions and sources. The students are trained in how to combine different knowledge areas to make a complex reality researchable. The final examination will consist of an individual report aiming to evaluate the theoretical concepts in relation to the chosen problem statement, an academic report and an presentation of the main results to the investigated company's board of directors (in this course, however, not the authentic Board of Directors) .

The course includes activities aimed at deepening the knowledge in scientific method, academic writing, and presentation. The course supports the whole program's learning objectives through a deepening of the problem-based approach introduced in ME2501 (which continues in the course ME2502) .

Disposition

The course starts with a review of the theories that form the foundation of Industrial Dynamics - to understand and explain technological and industrial change, and innovation theories. The course then focuses on management issues on a "meso level" - that is, strategic leadership to meet industrial change. Historical and current context is important in the course and students are expected to undertake their own analysis of an industry based on the theories presented. Examples of areas covered are innovation theory, historical analysis of industrial dynamics, knowledge processes and phenomena such as technological paradigms, regimes and trajectories.

Course literature

A selection of approx. 10 academic articles and a textbook (see Course PM for details).

Examination

- SEM1 - Seminars, 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.

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.