ME2093 Technological and Industrial Change 6.0 credits

Teknisk och industriell omvandling

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

Establishment

Course syllabus for ME2093 valid from Spring 2016

Grading scale

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

Education cycle

Second cycle

Main field of study

Industrial Management

Specific prerequisites

At least 12 credits of second cycle courses within the area of Industrial management is required.

These courses are recommended: ME2033 Industrial Dynamics and Technical Change; ME2034 Management of New Technology and Industrial Creativity; and/or ME2067 Industrial transformation and technical change

Language of instruction

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

Intended learning outcomes

On completion of the course, the student should be able to:

• deepen the knowledge about the mechanisms behind industrial and technical change processes

• provide knowledge of the research front in the field of "Industrial Dynamics", with an emphasis on innovation and entrepreneurship from an evolutionary industrial perspective and expand the field industrial dynamics vis-à-vis technical creativity

• provide a knowledge base for a qualified analysis of policy, strategies and processes related to industrial and technical change at several system levels exposed to fast changes and technical development

• analyse and critically discuss current research in the area of Industrial dynamics with an emphasis on innovation and entrepreneurship

• independently formulate and define problems to tackle complex processes of change within industrial and technology intensive activities by means of data from various types of sources

• write an academic report based on a scientific study and critical discuss the chosen method, the theory and the quality of the results

• present results and conclusions from the scientific study orally for various target groups

Course contents

This is an advanced course in transformation processes. Thereby, it is also a course on the technological processes of change (the technological dynamics) that are associated with industrial and technical transformation. The focus of the course is on analysing and understanding the mechanisms behind industrial and technical change. Historical cases give a foundation for the knowledge acquisition, but the emphasis lies on understanding possible, common and/or general mechanisms and relationships in the transformation/development process.

The innovation theory that has grown during the last decades within (mainly) the evolutionary Schumpeter influenced economical theory is a logical and necessary starting point for a course of this kind. However, this approach is far from sufficient. Business administrators, technology, economics and science historians as well as sociologists and economical geographers contribute to this research field, which will be analysed in the course. Not least, there is an extensive discourse of the connection between scholarship/research on the one hand and innovations on the other

The research field is broad not only from a disciplinary point of view, but also from a methodological perspective. At one extreme end, the research issues lead to advanced quantitative (econometric) studies – at the other to qualitative, and not seldom epistemologically complex analyses. Even the notion of innovation that is central to the research field become

problematic (and insufficient) when it is applied to service-based businesses – and they grow as we know – within (what we use to call) the knowledge society.

The course gives a precise overview of the research area on these fields. The course contains in itself no applied quantitative exercises but give a qualified analytical basis also/not the least for those who want to work with quantitatively orientated analysis in the area

Course literature

A selection of approximately 20 academic articles and a textbook (see current course PM for details)

Examination

- SEM1 - Seminar, 1.5 credits, grading scale: P, F
- TEN1 - Exam, 4.5 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.

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.