



# ME2085 Transformation in Energy Systems and Industries 6.0 credits

Omvandling av energisystem och energirelaterad industri

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 ME2085 valid from Autumn 2019

## Grading scale

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

## Education cycle

Second cycle

## Main field of study

Industrial Management

## Specific prerequisites

Open for all students with a candidate degree, alternative 180 credits.

# 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 should be able to:

- Analyse and discuss mechanisms behind industrial and technological change, transformation pressure – such as global warming and comprehensive technological shifts – and other related industrial change processes concerning the transformation of energy systems and energy related industry
- Critically analyse and discuss the consequences of technological and industrial change processes from ethical, political, economical and societal aspects concerning the transformation of energy systems and industries
- Critically examine and evaluate the applicability of the theoretical concepts from the area of industrial dynamics to manage technological and industrial change processes within the energy sector (energy systems and energy related industries)
- Analyse and critically discuss current research within the area of Industrial dynamics with focus on innovation and entrepreneurship from an evolutionary industrial perspective concerning the transformation of energy systems and energy related industries
- Independently formulate and define problems to tackle and handle complex change processes concerning industrial and technological intensive businesses (within energy systems and energy related industry) with the aid of data from different types of sources
- Conduct scientifically based analysis of policy, strategy and processes related to industrial and technological change at multiple system levels concerning current transformation of energy systems and energy related industries
- Orally and in writing present results and conclusions from the scientific study for different types of recipients

## Course contents

The majority of today's most challenging industrial management problems with the energy area has their origins within fast technological and industrial transformation caused by transformation pressure from globalisation, global warming and comprehensive technological shifts.

The theoretical foundations of the course comes from industrial dynamics and innovation theory with strong links to evolutionary and institutional economics. The area has a strong interdisciplinary character with connections to areas such as history of technology, sociology of science, history of economics, economical geography and economics.

Industrial dynamics has a technology- and industry focus and gives the students tools to manage industrial transition processes. In other words the course deals with managerial questions at a "meso-level", which means strategic leadership to meet and manage industrial change.

## Course literature

Forskningsartiklar (10-15) + ev. lärobok - meddelas vid kursstart // Articles (10-15), Text-book will be announced at the beginning of the course.

## Examination

- SEM2 - Seminar, 4.0 credits, grading scale: A, B, C, D, E, FX, F
- TEN2 - Examination, 2.0 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.