MJ111V Circular Economy and Industrial Systems 4.5 credits

Cirkulär ekonomi och industriella system

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

Establishment

The official course syllabus is valid from the spring semester 2023 in accordance with the decision by the head of the school: M-2022-1065. Date of decision: 15/08/2022

Grading scale

P, F

Education cycle

First cycle

Main field of study

Industrial Management

Specific prerequisites

The upper secondary course Eng B/6 or the equivalent.

Applicants must have at least a Degree of Bachelor in environmental science finance, management, technology.

Language of instruction

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

Intended learning outcomes

1. Formulate and critically discuss principles and strategies for circular economy and consequences of circular transitions for sustainable development in specific sectors, such as resource management, energy and resource-intensive industries. Formulate and critically discuss principles and strategies for closed-loop production, innovation management and value creation, and for the supply chain administration.
2. Apply tools and methods that are relevant for the assessment of circular performance and choose an appropriate assessment tool based on a problem description
3. Give an account of and illustrate the importance of business model innovation for value creation in a circular economy.
4. Discuss and give critical judgements that cover possibilities and challenges to utilise the potential in the innovation of the business models in connection with the transition to a circular finance model in the respective industries.

Course contents

1. Principles and strategies for circular economy: selected concepts in focus
2. Circular economy and circularity evaluation: methods and tools
3. Innovation management, operation and supply chain management and value creation in a circular economy
4. Case of transition to a circular finance model in industrial and public sector

- Track 4.1 Closed-loop manufacturing in connection with circular economy

- Track 4.2 Resource recycling in a circular economy

- Track 4.3 Integration of circularity: policies and regulations

Examination

- DEL1 - Participation, 1.0 credits, grading scale: P, F
- ÖVN1 - Exercise, 1.0 credits, grading scale: P, F
- DEL2 - Participation, 1.0 credits, grading scale: P, F
- SEM1 - Seminar, 1.5 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.

Other requirements for final grade

To pass the course, the student should prepare and present the compulsory assignments at the right time and participate in at least 80 % of the compulsory activities

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.

Additional regulations

The seminars are mainly dedicated to – observations and analysis – discussions around read or observed material the – continuous reportings of written assignments – response work in groups.