



COURSE SYLLABUS

Environmental Impact Assessment of Castings, 3 credits

Miljökonsekvensbedömning av gjutgods, 3 högskolepoäng

Course Code: TMGS27	Education Cycle: Second-cycle level
Confirmed by: Dean Feb 1, 2017	Disciplinary domain: Technology (95%) and social sciences (5%)
Valid From: Aug 1, 2017	Subject group: MA2
Version: 1	Specialised in: A1F
Reg number: JTH 2017/589-313	Main field of study: Product Development

Intended Learning Outcomes (ILO)

On completion of the course, the student should

Knowledge and understanding

- Have an understanding of how a cast component affects the environment and how the different phases of its life cycle contribute to consumption of energy
- Demonstrate knowledge of how life cycle analysis must be produced; from raw material extraction to disposal or recycling
- Demonstrate an understanding of how individual phases as well as the total environmental impact are calculated and analyzed

Skills and abilities

- Show the ability to apply life cycle assessment and to use appropriate methods of conducting an environmental impact assessment

Judgement and approach

- Show the ability that from a life cycle perspective identify and assess the most environmentally burdening phases
- Show the ability to critically assess how to prevent and minimize environmental impact and energy consumption.

Contents

The course includes the following topics:

- Identification of the various environmentally burdening phases related to cast components
- Evaluation of the environmental load associated with the different phases including the calculation of CO₂ emissions and the total consumption of energy using appropriate tools
- Case study

Type of instruction

Lectures, seminars, project work, laboratory activities and exercises.

The teaching is conducted in English.

Prerequisites

Passed at least 90 credits within the major subject Mechanical Engineering, and 21 credits Mathematics, and completed course Component Casting, 6 credits, Melting and Casting of Ferrous Alloys, 3 credits and Moulding Materials in Foundry Technology, 3 credits. Proof of English proficiency is required (or the equivalent).

Examination and grades

The course is graded 5,4,3 or Fail.

Registration of examination:

Name of the Test	Value	Grading
Examination ¹	1.5 credits	5/4/3/U
Exercises and Project Work	1.5 credits	U/G

¹ Determines the final grade of the course, which is issued only when all course units have been passed.

Course literature

Literature

The literature list for the course will be provided one month before the course starts.