Project Course Advanced - Engineering Materials

Programme course

12 credits

Projektkurs avancerad - Konstruktionsmaterial

TMPM09

Valid from: 2019 Spring semester

Determined by
Board of Studies for Mechanical Engineering and Design

Date determined
2018-08-31

Main field of study
Mechanical Engineering

Course level
Second cycle

Advancement level
A1X

Course offered for
- Master's Programme in Mechanical Engineering
- Mechanical Engineering, M Sc in Engineering

Entry requirements
This course concludes a master profile for the M and MEC program and it is required that the student has already passed the preparatory profile courses. Prior to the start of the course, the examiner/director of studies will verify that participating students have sufficient knowledge, see information under Prerequisites.

Prerequisites
The project course assumes a deeper knowledge within the area of engineering materials but also basic knowledge within areas such as solid mechanics, mechanics, fluid mechanics, heat transfer, manufacturing engineering and machine design. Depending on which project to perform, a deeper knowledge in any of the above mentioned areas may be required.

Intended learning outcomes
The course aims to consolidate knowledge within the area of engineering materials through the application on a current problem with industry or research connection. After having completed the course the student should be able to:

- Identify, choose and apply relevant theoretical areas for a situation specific problem.
- Plan and realize an industrial and/or research related project within the area.
- Systematically integrate the knowledge acquired during their studies to run an engineering materials project.
- Utilize method and subject specific knowledge within the area of engineering materials.
- Create, analyze and evaluate technical solutions.
- Assimilate the contents of relevant literature and relate their work to it.

Course content

- The course is primarily composed of an industry or research related project.
- Investigation methodology, for example to formulate an approach to a problem and to analyze and draw conclusions.
- Deep studies within the areas of engineering materials which are relevant for the specific project.
- Report writing, oral presentation and opposition.

Teaching and working methods

The students are divided in smaller groups to perform their project. The project is run by the students in collaboration with the project owner and the students are expected to take a large responsibility to finalize the project. Since the course runs over the whole semester, a mid-term report should be handed in and presented orally half-way through the project. The project finishes with a written report and oral presentation. With the aim to practice a critical and constructive inspection of investigations and academic reports within the area of engineering materials each group shall review a report written by another group.

In addition, collective seminars/laboratory works may be carried out within the course.

Examination

PRA1	Project Work	12 credits	U, 3, 4, 5

Grades

Four-grade scale, LiU, U, 3, 4, 5

Department

Institutionen för ekonomisk och industriell utveckling

Director of Studies or equivalent

Mikael Segersäll

Examiner

Mikael Segersäll

Education components

Preliminary scheduled hours: 0 h
Recommended self-study hours: 320 h