MF220X Degree Project in Innovation Management and Product Development, Second Cycle 30.0 credits

Examensarbete inom innovationsledning och produktutveckling, avancerad nivå

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

Establishment

Course syllabus for MF220X valid from Spring 2018

Grading scale

P, F

Education cycle

Second cycle

Main field of study

Mechanical Engineering

Specific prerequisites

To start their degree project, all courses from undergraduate level need to be completed. In addition, courses equivalent to 60 ECTS need to be completed at master's level, including all

compulsory courses for the five year engineering programme, all subject-specific advanced courses as well as the required course in scientific methodology.

Language of instruction

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

Intended learning outcomes

According to the goals for degree projects for an engineering degree established by KTH, the student should be able to:

1. demonstrate knowledge and understanding of the scientific foundation and best practices for the chosen subject, as well as an advanced understanding of current research and development within the area and in-depth knowledge of research methodology.

2. demonstrate the ability to search, create and integrate knowledge and to identify if there is a need for additional knowledge, all with a holistic, critical and systematic work approach.

3. demonstrate the ability to identify, analyse, assess and handle complex phenomena, issues and situations also with limited information

4. demonstrate the ability to plan and with adequate methods carry out qualified assignments within given time frames and to evaluate this work

5. demonstrate the ability to develop and evaluate products, processes, systems, methods or technical solutions with respect to humans' circumstances and needs as well as society's goals in term of economically, socially and ecologically sustainable development.

6. demonstrate the ability, both orally and in writing, in dialogue with different groups, to clearly explain and discuss conclusions and the knowledge and arguments on which these are based

7. demonstrate the ability to make assessments considering relevant scientific, social and ethical aspects

8. show such skills that is required to participate in research and development or to work independently in other qualified activities; â€¢ apply relevant knowledge and skills that have been acquired in the main field of study

Course contents

The studies for a five year engineering degree is completed by a degree project in which the student be expected to demonstrate

ability to independently solve an engineering assignment by using a broad spectrum of skills.

The subject for the degree project can vary but it should relate to technology or technical development and have a clear contribution to product development or innovation.

Provided that the degree project satisfies the above requirements and provided that qualified supervision is available during the degree project, the student can choose to carry out the degree project either at an academic department or in industry.

Examination

• XUPP - Thesis Project, 30.0 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.

Four compulsory components are included in the degree project, i.e. the technology student should:

1. Be present at at least two presentations of other master degree projects, before review/opposition and final presentation. Attendance at final presentations of degree projects, completed by students of other master programmes, may be included.

2. Be present and review at a planning seminar where problem definitions are discussed, together with method choices and the definition of the theoretical framework.

3. Review and be opponent at the presentation of another master degree project.

4. Carry out and submit an approved master degree project at a public seminar.

The Degree Project and the critical review should be carried out by one or two students.

Degree projects are equal to scientific reports, and are public documents. A cornerstone at scientific work is that the material is made public, and thus exposed to review by other researchers. Hence, it is inappropriate if parts of the contents of the degree project are confidential. This should be clarified with your project provider at an early stage to avoid surprises at the end.

Participation in compulsory components should be listed on the form for compulsory components. It is the student's responsibility to ensure that the form is filled out in an appropriate manner.

Other requirements for final grade

The criteria to pass the degree project for an engineering degree, as established by KTH, are:

The literature study is well executed. Current research and development relevant to the work is presented in a clear manner. The selected method is well justified, based on science or proven experience and evaluated against other methods. Relevant knowledge from previous courses is adequately used.

The thesis task is handled autonomously and systematically, based on critical analysis and synthesis of relevant literature. The work demonstrates a holistic view. Relevant databases and search tools are used. The need for further knowledge is discussed.

Relevant complex phenomena, issues and situations are identified in the degree project. The work clearly shows that these are well managed and analysed, even if available information is limited. Adequate judgements related to the research questions and results are implemented.

The project plan was followed. An advanced project is carried out within the agreed time and with the methodology agreed upon. Any changes to the plan or the have been agreed, between student and supervisor. Resources and limitations in the study are clearly presented.

The chosen strategy is motivated and implemented so that developed and evaluated products, processes, methods, systems or technical solutions, are adapted to human needs and conditions. Consideration to relevant social aims is shown in such a way that the ability of future generations to meet their needs is not jeopardised.

The report is well organized and written in a well formulated and coherent language. The discussion on the conclusions is well motivated. The citations are relevant, phrased in the student's own wording, and well integrated. The oral presentation and the review, as well as the communication during the work, demonstrate the ability to present and sensitively discuss the work and its conclusions with different parties, such as employers, supervisors, teachers, researchers and students.

The degree project demonstrates judgement abilities, for example to explain, justify, criticize and recommend. Relevant topic-specific assessments based on science or proven experience have been made in the degree project. The degree project reflects on social and ethical aspects, unless this is shown to be irrelevant.

The student familiarizes him/herself with the task and demonstrates the ability to be a part of the working environment where the study was performed. The student demonstrates an ability to test, evaluate and also reject ideas and solutions in the discussions on the task. The student shows initiative and is open for supervision and criticism. The degree project is carried out largely independently.

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.