



**LUNDS UNIVERSITET**  
Lunds Tekniska Högskola

*Course syllabus*

# **Formula student 1 - Initiering, förstudie och design**

## **Formula Student 1 - Initiation, Pre-study and Design**

**MVKP45, 7,5 credits, A (Second Cycle)**

**Valid for:** 2023/24

**Faculty:** Faculty of Engineering, LTH

**Decided by:** PLED M

**Date of Decision:** 2023-04-11

### **General Information**

**Elective for:** C4, D4, E4, F4, I4, M4-tt, MD4, N4, Pi4, MHET2

**Language of instruction:** The course will be given in English on demand

### **Aim**

This course aims to provide knowledge and experience in project form under strict deadlines. The students design and manufacture a complete car concept in the form of a formula car, where the entire process from initiation, feasibility study, planning, implementation and closure is treated.

In this course Initiation, pre-study, planning and design are handled. The students take on different project group roles, and through the course get an understanding of a project's various stages to a production ready product. The course challenges students' skills in applying knowledge from previous courses such as mechanics, electrical engineering, programming, solid mechanics, construction technology, manufacturing methods and vehicle technology. Along the way student will face challenges and learn about group development, teamwork, project management, budgeting, marketing and presentation.

### **Learning outcomes**

*Knowledge and understanding*

For a passing grade the student must

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- describe the relevance of the selected problem area
- explain the problem with relevant terminology
- carry out an analysis and synthesis of the selected problem
- understand the impact/ consequence of the design/planning on future manufacturing, assembly and testing.

#### *Competences and skills*

For a passing grade the student must

- analyse the chosen problem and suggest a constructive solution
- assess the feasibility of approaches and assumptions
- be able to apply knowledge from previous courses
- through a report clearly document their work and experiences for knowledge transfer to future course participants

#### *Judgement and approach*

For a passing grade the student must

- demonstrate the ability to make assessments with regard to relevant technical, economical and time aspects and demonstrate awareness of its impact on other project areas,
- show insight into the possibilities and limitations of their problem area, its role in the project and people's responsibility and cooperation for how it is applied,
- demonstrate the ability to identify their need for additional knowledge and to continuously develop their skills.

## **Contents**

A theoretical/ numerical/ analytical pre-study, planning and design of the chosen problem area in the Formula Student project, in which the student wishes to deepen their knowledge. The study is followed up by manufacturing and testing the chosen solution in Formula Student 2 - Implementation and Closure. Lectures will be given in group development and project management. Relevant study visits, guest lecturers and trade fairs are included in the course and are arranged by the students themselves in consultation with the course coordinator. If the student wants and has the opportunity, he/she can voluntarily participate with Lund Formula Student in an international competition against other European universities.

## Examination details

**Grading scale:** UG - (U,G) - (Fail, Pass)

**Assessment:** The grading consists of completion of a report and oral feedback sessions. The report is written independently or in groups, and is reviewed by the team members, the feedback and revised report is submitted to the course coordinator. The feedback sessions consist of mandatory design/ project consultations during HT2 with feedback from classmates, course coordinator or (if possible) invited industry representatives. The following headings must be discussed in both the report and the presentation based on the objectives in the course: - Selected problem area - Problem formulation and motivated relevance for the project - Selected problem solving based on attached analysis and synthesis - Problem solving even impact on the rest of the project - Assumptions, limitations and reasonableness. The examiner, in consultation with Disability Support Services, may deviate from the regular form of examination in order to provide a permanently disabled student with a form of examination equivalent to that of a student without a disability.

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## Admission

**Admission requirements:**

- Completed a minimum of 100 credits within relevant programme

**The number of participants is limited to:** No

**The course overlaps following course/s:** MVKP05

## Reading list

## Contact and other information

**Course coordinator:** Marcus Lundgren, [marcus.lundgren@energy.lth.se](mailto:marcus.lundgren@energy.lth.se)

**Examiner:** Marcus Lundgren, [marcus.lundgren@energy.lth.se](mailto:marcus.lundgren@energy.lth.se)

**Course coordinator:** Martin Tunér, [martin.tuner@energy.lth.se](mailto:martin.tuner@energy.lth.se)

**Course homepage:** <https://www.energy.lth.se/english/education/>

**Further information:** The course is operated as a project with consultations and advices from the supervisor.