



SD2925 System Integration for Space Technology, Part 2 3.0 credits

Rymdteknisk systemintegration, del 2

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

If the course is discontinued, students may request to be examined during the following two academic years

Establishment

Course syllabus for SD2925 valid from Autumn 2019

Grading scale

P, F

Education cycle

Second cycle

Main field of study

Mechanical Engineering

Language of instruction

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

Intended learning outcomes

After completing course the student should be able to

1. Demonstrate ability to, from a holistic perspective, critically, independently and creatively identify, formulate and deal with one or several subsystems of a spacecraft for a space mission.
2. Demonstrate ability to create, analyse and critically evaluate different technical solutions for one or several subsystems of a spacecraft for a specific space mission.
3. Demonstrate ability to plan and with adequate methods produce one or several subsystems of a spacecraft for a specific space mission within given frames and evaluate this work.
4. Demonstrate ability to critically and systematically integrate knowledge from previous courses to analyse, judge and deal with complex phenomena, problems and situations for one or several subsystems of a spacecraft, even on the basis of limited information.
5. Demonstrate ability to model, simulate, predict and evaluate the behaviour of one or several subsystems of a spacecraft during its lifetime, even on the basis of limited information.
6. Demonstrate ability to design one or several subsystems of a spacecraft, including selection of technical solutions, taking into account relevant scientific, social, ethical, economic and environmental aspects, and international regulatory frameworks.
7. Demonstrate ability for teamwork and collaboration in culturally mixed groups.
8. Demonstrate ability to clearly present and discuss engineering conclusions and the knowledge and arguments behind them, in dialogue with different groups, orally and in writing, in international contexts.
9. Demonstrate ability to make judgements with respect to relevant scientific, societal and ethical aspects when selecting technical solutions for one or several subsystems of a space mission.
10. Demonstrate insight in the possibilities and limitations of space technology, its role in society and people's responsibility for how it is used, including societal and economical aspects as well as environmental and work environment aspects.
11. Demonstrate ability to identify his or her need for further knowledge in space technology.

Course contents

Simplified mission analysis to become familiar with the space mission, followed by the development of the requirements matrix, including all necessary requirements according to international standards. The requirements matrices produced in this part will be input for part 2 of the course in system integration for space technology.

Disposition

Mainly workshops with teamwork where each team is responsible for one or more of the subsystems of the satellite.

Specific prerequisites

Completed degree project on Bachelor level.

Examination

- INL1 - Hand-in Assignments, 1.0 credits, grading scale: P, F
- PRO1 - Project, 2.0 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.

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.