

SYLLABUS

Satellite Avionics Engineering 3 credits P7017R

Satellitavionik

Course syllabus admitted: Autumn 2023 Sp 1 - Present

**DECISION DATE
2022-02-11**

Satellite Avionics Engineering 3 credits P7017R

Satellitavionik

Second cycle, P7017R

Education level
Second cycle

Grade scale
G U 3 4 5

Subject
Rymdteknik

Subject group (SCB)
Space Technology

Entry requirements

Knowledge in orbit geometry, orbit calculations as well as spacecraft bus systems and data handling, e.g R7028R Spacecraft Systems 7.5 hp or both R7025R Orbit and Attitude Dynamics 7.5 hp and R7018R - Spacecraft onboard datahandling 7.5 hp.

Knowledge in programming, e.g. D0009E Introduction to programming 7.5 hp or D0017E - Introduction to programming for engineers 7.5 hp is a prerequisite.

Documented skills in English language.

Selection

The selection is based on 30-285 credits

Course Aim

After the course the student should:

- be able to show an understanding of all elements of the avionics of a spacecraft
- be able to design a fundamental avionics concept for given requirements
- apply existing tools to simulate and verify such concepts

Contents

- Onboard Computers
- Onboard Software
- Satellite Simulation
- Satellite Functional Verification
- Satellite Operations & In-Orbit Testing

Realization

Each course occasion's language and form is stated and appear on the course page on Luleå University of Technology's website.

Lectures and homework assignments.

The first week of the course has planned lectures. The following three weeks are intended for home study.

Examination

If there is a decision on special educational support, in accordance with the Guideline Student's rights and obligations at Luleå University of Technology, an adapted or alternative form of examination can be provided. The course will be examined through group based homework assignment and written exam.

Unauthorized aids during exams and assessments

If a student, by using unauthorized aids, tries to mislead during an exam or when a study performance is to be assessed, disciplinary measures may be taken. The term “unauthorized aids” refers to aids that the teacher has not previously specified as permissible aids and that may assist in solving the examination task. This means that all aids not specified as permissible are prohibited. The Swedish version has interpretative precedence in the event of a conflict.

Course offered by

Department of Computer Science, Electrical and Space Engineering

Modules

| Code | Description | Grade scale | Cr | Status | From period | Title |
|------|--------------|-------------|-----|-----------|-------------|-------|
| 0001 | Group work | G U 3 4 5 | 1.5 | Mandatory | A22 | |
| 0002 | Written exam | G U 3 4 5 | 1.5 | Mandatory | A22 | |

Study guidance

Study guidance for the course is to be found in our learning platform Canvas before the course starts. Students applying for single subject courses get more information in the Welcome letter. You will find the learning platform via My LTU.

Last revised

by Jonny Johansson, HUL SRT 2022-02-11

Syllabus established

by Jonny Johansson, HUL SRT 2022-02-11