

SYLLABUS

Spacecraft Instrument Project 15 credits P7011R

Projektkurs: Rymdfarkostinstrument

Course syllabus admitted: Autumn 2017 Sp 1 - Present

**DECISION DATE
2017-02-15**

Spacecraft Instrument Project 15 credits P7011R

Projektkurs: Rymdfarkostinstrument

Second cycle, P7011R

Education level
Second cycle

Grade scale
G U 3 4 5

Subject
Rymdteknik

Subject group (SCB)
Space Technology

Entry requirements

Good knowledge within the area of Spacecraft instruments, equivalent to the course R7013R Space Instruments.

Selection

The selection is based on 30-285 credits

Examiner

Thomas Kuhn

Course Aim

The student shall obtain experience of construction of a space instrument.

The student should acquire experience in working on a project. In particular the student as long as it is reasonable should use the knowledge that they acquire in other courses focusing on space environment. The student should seek cooperation with reference groups in research and industry.

The student shall obtain experience in project organization and project management. Items that are Important are time tables, resource utilization, project meetings, finances, reports and documentation of various kinds.

The student should understand the risks of disruption of time tables, as serious financial issues can manifest themselves. It is important to understand the risks involved in a temporary organization of staff and resources from diverse sources within an organization.

Contents

Introduction to project work and evaluation of proposed space projects. Interaction with project group that work with development of design of a spacecraft in computer environment that shall be fit to carry the space instrument that is constructed in this course. Organization of, and preparation of documents for a Preliminary Design Review (PDR). Oral and written presentation of the PDR for clients of the project. Preparation of documents for a Critical Design Review (CDR). Every student in the project is required to be active during the presentation of the CDR, which is both written and verbal for the client. Prior to flight, the necessary tests should be carried out. After the flight, the group will present an analysis of these results as a Final Report (FR).

Realization

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

In parallel with the first half of this course is the design of a spacecraft studied and during the second half of this course shall a specific spacecraft be designed in computer environment, fit to carry the instrument that is constructed in this course. The space instrument shall as far as possible and suitable be tested with release from stratospheric balloon, test in vacuum chamber, and in a shaking machine.

Students will work in groups. Large groups are to be divided into sub-projects with their own project managers. The minimum number of students in a project is 2, but it is wishful that there are more than that. The student project manager is responsible for implementing the project. Projects will be such that it is possible to work with a specialization in science or engineering within the same project

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 student should be active in the project work and final results are graded according to scale, G, U, 3, 4, 5.

Literature. Valid from Autumn 2016 Sp 1

Course offered by

Department of Computer Science, Electrical and Space Engineering

Items/credits

Number	Type	Credits	Grade
0001	Review meetings, deadlines	3	U G#
0002	Design, construction, test results, theoretical calculations	6	U G#
0003	Final report & individual contribution	6	G U 3 4 5

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 2017-02-15

Syllabus established

by Jonny Johansson, HUL SRT 2013-02-13