SYLLABUS

Spacecraft Subsystems 7.5 credits R7019R

Rymdfarkostens delsystem

Course syllabus admitted: Spring 2025 Sp 3 - Present

DECISION DATE
2024-02-15

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LULEÅ TEKNISKA UNIVERSITET

Spacecraft Subsystems 7.5 credits R7019R

Rymdfarkostens delsystem

Second cycle, R7019R

Education level	Grade scale	Subject	Subject group (SCB)
Second cycle	G U 3 4 5	Rymdteknik	Space Technology

Main field of study

Space Technology

Entry requirements

Knowledge in the space environment (e.g. R7004R Spacecraft Environment Interactions or R7017R Space Physics). Knowledge in orbit dynamics and control of spacecraft (e.g. R7025R Orbit and Attitude Dynamics, R7026R Spacecraft Control). Knowledge in English, equivalent to English 6.
Knowledge of data management systems for satellites and other spacecraft (e.g. R7018R Spacecraft On-Board Data Handling).

Selection

The selection is based on 30-285 credits

Course Aim

The student shall acquire understanding of important subsystems for space crafts. The student shall have knowledge of technical solutions for spacecraft subsystems.

The student shall be able to design and analyze the structure subsystem, be able to design and analyze the satellite thermal subsystem, have basic skills of using a thermal analysis tool.

The student shall have such knowledge that suitable configuration for given payloads on a spacecraft can be chosen. The student will demonstrate an ability to identify a subsystem or part subsystem which the student is in need of further knowledge . This is shown by the student to propose and implement a less work to develop their skills in the identified region .

Contents

Satellite subsystems such as Structures and Mechanisms, Thermal Control, Power System, Attitude and Orbit Control, Propulsion. Redundancy. Reliability. Space Standards.

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 practicals. Compulsatory moments may occur.Guest lecturers from space industry.

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.

Exam and project work.

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.

Remarks

Advanced level. This course is a prerequisite for the courses R7020R Spacecraft Design and P7012R Project course: Spacecraft Design. The course cannot be part of an exam together with R7008R.

Course offered by

Department of Computer Science, Electrical and Space Engineering

Modules

Code	Description	Grade scale	Cr	Status	From period	Title
0001	Written exam	G U 3 4 5	5	Mandatory	A12	
0002	Project work	U G#	2.5	Mandatory	A12	

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 Robert Brännström 2024-02-15

Syllabus established

by Jonny Johansson, HUL SRT 2012-03-14