

SYLLABUS

The Solar System 7.5 credits F7008R

Solsystemets fysik

Course syllabus admitted: Autumn 2023 Sp 1 - Present

**DECISION DATE
2023-02-15**

The Solar System 7.5 credits F7008R

Solsystemets fysik

Second cycle, F7008R

Education level	Grade scale	Subject	Subject group (SCB)
Second cycle	G U 3 4 5	Rymd- och atmosfärsvetenskap	Space Technology

Main field of study

Space Technology

Entry requirements

Physics 2 (F0005T) 7.5 hp, Electromagnetic fieldtheory (F0007T) 7.5 hp, Functions of Several Variables and Computer Tools (M0032M) 7.5 hp or similar qualifications.

Good knowledge in English equivalent to English 6.

Selection

The selection is based on 30-285 credits

Course Aim

Knowledge and understanding

The student should be able to explain basic facts and physical principles that determine the structure, development and physical processes of the solar system. Students should be able to explain and describe the role of the sun in the solar system.

Skills and Abilities

The student should be able to describe physical processes that lead to the formation of the solar system.

The student must show understanding of how the interaction between the different bodies in the solar system can be described with physical principles and laws.

He should be able to assess how different parameters affect the different properties of planets and other elements in the solar system and what orders of magnitude these parameters have.

Evaluation ability and approach

The student should discuss different methods used in research about our and other solar systems, and then be able to apply that knowledge to other situations and problems.

He must show in-depth knowledge and approach to current research in a selected area and show the ability to assess similarities and differences between different objects in the solar system.

Contents

The Heliosphere, the Sun and its activity. The planets, their compositions, atmospheres and magnetospheres. The interaction with the solar wind, exchange of energy. Comets, asteroids, meteoroids and dust. Cosmic rays. Experimental methods and instrumentation. Extrasolar planets.

Realization

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

The course consists of classical lectures together with homework assignments and tutorials. In parallel the students will work on a project within the field of Solar system physics. The course will only take place if enough students register for it. Depending on the circumstances, a different realization of the course can be required.

Guest teachers from research groups.

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.

Examination is based on homework assignments and the project with an approved written report and oral presentation. In order to pass the course it is required that all examinations and obligatory tasks are completely satisfactory. The final grade given for the course reflects the results obtained in the various components of the course.

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

The course is given on master level.

Overlap

The course F7008R is equal to RYM035

Course offered by

Department of Computer Science, Electrical and Space Engineering

Modules

Code	Description	Grade scale	Cr	Status	From period	Title
0006	Assignment report	G U 3 4 5	5.5	Mandatory	A21	
0007	Project work	G U 3 4 5	2	Mandatory	A21	

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 2023-02-15

Syllabus established

by Dept of Space Science 2007-02-28