

SYLLABUS

Atmospheric Physics 7.5 credits F7004R

Atmosfärfysik

Course syllabus admitted: Spring 2024 Sp 3 - Present

DECISION DATE
2023-02-15

Atmospheric Physics 7.5 credits F7004R

Atmosfärfysik

Second cycle, F7004R

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

90 credits in completed courses of which at least 22.5 courses in physics, e.g. F0004T Physics 1, 7.5 credits, F0005T Physics 2, 7.5 credits, F0006T Physics 3, 7.5 credits. Good knowledge in English equivalent to English 6.

Selection

The selection is based on 30-285 credits

Course Aim

After completing the course, the student shall be able to explain and critically evaluate physical and chemical fundamentals of the Earth's atmosphere in order to be able independently propose relevant research and development projects as well as to support the ongoing technological development and community planning from a climate perspective.

Knowledge and understanding

The student shall acquire knowledge about the Earth atmosphere particularly about its physical and chemical aspects. The student shall be able to explain atmospheric phenomena and processes, qualitative and quantitative evaluate them, as well as to determine their significance from the holistic perspective.

Competence and skills

The student shall show capability to critically and independently formulate the problems as well as perform calculations for the physical processes within the given time frame. This is done by problem solving and work during the seminars. The student shall be able to motivate and plan scientific experiments during the project work. The student shall be able to critically select and evaluate relevant scientific and technical information within the subject via the literature survey. Ability and skills to present own results and arguments during international events are evaluated via the oral presentation in English. The student shall demonstrate social skills and be able to effectively work in a group during the seminars.

Judgement and approach

The student shall have insight about atmosphere significance for live existence on Earth and human responsibility for that. This is shown via evaluation of the relevant technological and ethic aspects with a focus on sustainable development and the Swedish national equality goals.

During the seminar work, the student shall be able to identify her / his needs for additional knowledge and take responsibility for its development.

Contents

The course contains and deals with fundamentals of Earth atmosphere in respect to other planets: atmospheric composition and structure; thermodynamic processes; radiation processes and greenhouse effect; dynamical processes, winds and waves; chemical processes and pollution effects; climate change; introduction to atmospheric measurement techniques.

The course covers current research and development in atmospheric science and climate with a focus on sustainable development as well as concept like equality and gender mainstreaming.

Realization

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

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

The course includes teaching and learning activities such as lectures, seminars, project work and written assignments that apart from the ability to explain the natural phenomena and critical evaluate their scientific aspects are intended to found good experimental skills, technical report writing and oral presentation in English.

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.

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 is assessed through written tests, written assignments and a project work. In order to pass the course it is required that all compulsory tasks are completed satisfactory with a grade "Pass".

The final grade for the course reflects the results obtained for all compulsory tasks and is given after all compulsory tasks are approved. The grading scale for the course is 3, 4, 5.

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.

Overlap

The course F7004R is equal to RYM013

Course offered by

Department of Computer Science, Electrical and Space Engineering

Modules

Code	Description	Grade scale	Cr	Status	From period	Title
0003	Project work	U G#	1.5	Mandatory	A07	
0005	Assignments	U G#	1.5	Mandatory	A16	
0006	Written tests	G U 3 4 5	4.5	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