

**SYLLABUS**

**STUDY YEAR 2018/2019**

# **Master Programme in Earths Atmosphere and the Solar System**

## **Enrollment semester Autumn 2017**

**DATE**

**2017-06-01**

**REFERENCE NO.**

**12-16**

**DECISION MAKER**

**Director of Education and Research**

## Programme content and structure

For the master degree in Space Technology specialization Earth atmosphere and Solar System (120 Hp) the following courses are required: courses on the advanced level (90 Hp), and master thesis - space technology (30 Hp).

During the program's first year, you will gain knowledge of the Earth's atmosphere and the Solar System and observation of these. You will be introduced into the physical processes which are important to describe and understand the atmosphere and the Solar System. Additionally you will be introduced to the technical and mathematical methods used to observe and model these processes. During the second year you will strengthen your knowledge through courses and by participating in various space projects. A large part of the education and work is done as group work in project form. Your master thesis work will be performed at a space technology company, space organization, or an academic department in Kiruna or an other part of the world.

Practice during study time is recommended but is not compulsory. For admission to the degree project course entry requirements specified in the Course Syllabus must be completed. Information regarding the application- and admission process is given and ensured by the responsible department.

Swedish for beginners is offered to overseas students. The course is not included in the degree, and is read in addition to the obligatory courses.

## Credits

120 credits

## Degree

- Degree of Master of Science (120 credits) - Major; Space Technology with specialisation Earths Atmosphere and the Solar System

## Entry requirements

Successfully completed a basic engineering program or a Bachelor's degree with a minimum of 180 ECTS in the areas of natural science, engineering or technology. Course work must include physics and mathematics.

Documented skills in English language.

## Selection

The selection procedure is based on academic qualifications, quality and quantity aspects

### Selection group

Academic: 100%

## Compulsory courses

### Compulsory courses 105 credits

Course code	Course	Cr	Level	Comment
F7002E	Atmospheric dynamics and climate	7.5	Master's level	
F7004R	Atmospheric Physics	7.5	Master's level	
F7006R	Solar Physics	7.5	Master's level	
F7008R	The Solar System	7.5	Master's level	
F7014R	Polar Atmosphere	7.5	Master's level	
P7003R	Master Thesis - Space Technology	30	Master's level	
R7011R	Image Processing with Space Applications	7.5	Master's level	
R7012R	Remote Sensing	7.5	Master's level	
R7013R	Space Instruments	7.5	Master's level	
R7017R	Space Physics	7.5	Master's level	
R7022R	Introduction to satellite technology	7.5	Master's level	

### Compulsory courses 15 credits

Selective space is 15 credits. It is mandatory to select elective courses up to the given number of credits. The given number of credits of elective courses listed must be met for degree.

Course code	Course	Cr	Level	Comment
F7001R	Space Plasma Physics	7.5	Master's level	Selectable
F7007R	Cosmology	7.5	Master's level	Selectable
P7001R	Space Engineering Project II	15	Master's level	Selectable
P7005R	Space Engineering Project 1	7.5	Master's level	Selectable
P7006R	Space Engineering Project 2	7.5	Master's level	Selectable
R7007E	Special Studies in Space Engineering	7.5	Master's level	Selectable
R7015R	Space flight orbit dynamics	7.5	Master's level	Selectable
R7016R	Space flight attitude dynamics	7.5	Master's level	Selectable
R7018R	Spacecraft on board datahandling	7.5	Master's level	Selectable

### Course offered outside the obligatory courses - not compulsory - For non Scandinavian students

**Document**Syllabus Study year  
2018/2019**Education**Master Programme in Earths  
Atmosphere and the Solar System**Admitted in**

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Course code	Course	Cr	Level	Comment
S0046P	Swedish for International Students 1	3	Bachelor's level	Selectable

## Study schedule

**Year of study 1 Enrollment semester Autumn 2017, Is offered in 2017/2018**

Study-period	Course code	Course	Cr	Comment
1	F7004R	Atmospheric Physics	7.5	
1	F7008R	The Solar System	7.5	
2	R7011R	Image Processing with Space Applications	7.5	
2	R7012R	Remote Sensing	7.5	
3	F7002E	Atmospheric dynamics and climate	7.5	
3	F7006R	Solar Physics	7.5	
3	S0046P	Swedish for International Students 1	3	Selectable
4	F7014R	Polar Atmosphere	7.5	
4	R7017R	Space Physics	7.5	

## Year of study 2 Enrollment semester Autumn 2017, Is offered in 2018/2019

Study-period	Course code	Course	Cr	Comment
1	F7007R	Cosmology	7.5	Selectable
1	P7005R	Space Engineering Project 1	7.5	Selectable
1	R7007E	Special Studies in Space Engineering	7.5	Selectable
1	R7015R	Space flight orbit dynamics	7.5	Selectable
1	R7018R	Spacecraft on board datahandling	7.5	Selectable
1	R7022R	Introduction to satellite technology	7.5	
1-2	P7001R	Space Engineering Project II	15	Selectable
2	F7001R	Space Plasma Physics	7.5	Selectable
2	P7006R	Space Engineering Project 2	7.5	Selectable
2	R7007E	Special Studies in Space Engineering	7.5	Selectable
2	R7013R	Space Instruments	7.5	
2	R7016R	Space flight attitude dynamics	7.5	Selectable
3-4	P7003R	Master Thesis - Space Technology	30	Entry requirements