



Qualification descriptor for Degree of Master of Science (120 credits) - Major; Space Technology

Teknologie Masterexamen - Huvudområde; Rymdteknik

Degree regulations of 2007
Second cycle

Specialisations

Name	Start term	For admitted until
Earths Atmosphere and the Solar System (<i>Jordatmosfär och solsystem</i>)	A13	
Space Technology and Instrumentation (<i>Rymdteknik och instrumentering</i>)		
Atmospheric and Space Science, research oriented (<i>Rymd och atmosfärsvetenskap, forskningsinriktad</i>)		
Spacecraft Design (<i>Rymdfarkostdesign</i>)	A12	

Established

Qualification descriptor approved on 2007-11-19 by Ordförande TFN. Qualification descriptor updated on 2012-02-28 by Enhetschef vid enheten för utbildning och forskning.

Examination Objectives

Higher Education Act

English information is not available

Higher Education Ordinance

Annex 2

Knowledge and understanding

For a Master of Arts/Science (120 credits) the student shall have:

- * demonstrated knowledge and understanding in the main field of study, including both broad knowledge of the field and a considerable degree of specialised knowledge in certain areas of the field as well as insight into current research and development work, and
- * demonstrated specialised methodological knowledge in the main field of study.

Competence and skills

For a Master of Arts/Science (120 credits) the student shall have:

- * demonstrated the ability to critically and systematically integrate knowledge and analyse, assess and deal with complex phenomena, issues and situations even with limited information
- * demonstrated the ability to identify and formulate issues critically, autonomously and creatively as well as to plan and, using appropriate methods, undertake advanced tasks within predetermined time frames and so contribute to the formation of knowledge as well as the ability to evaluate this work
- * demonstrated the ability in speech and writing both nationally and internationally to report clearly and discuss his or her conclusions and the knowledge and arguments on which they are based in dialogue with different audiences, and
- * demonstrated the skills required for participation in research and development work or autonomous employment in some other qualified capacity.

Judgement and approach

For a Master of Arts/Science (120 credits) the student shall have:

- * demonstrated the ability to make assessments in the main field of study informed by relevant disciplinary, social and ethical issues and also to demonstrate awareness of ethical aspects of research and development work

* demonstrated insight into the possibilities and limitations of research, its role in society and the responsibility of the individual for how it is used, and

* demonstrated the ability to identify the personal need for further knowledge and take responsibility for his or her ongoing learning.

Detailed objectives for this degree

The student will after the training

- demonstrate ability to combine knowledge and skills from the subject fields space technology, space science and atmospheric physics
- have acquired a strong base for research and development work within space and space related application areas
- demonstrate ability to effectively use computers, software and measurement equipment in experimental and scientific work
- demonstrate ability in cooperation work, project work, and project management
- demonstrate ability for work within research and development within space technology with application areas spacecraft design, space technology and instrumentation, or atmospheric and space science

Specialisations

Earths Atmosphere and the Solar System

The student will after the training

- show knowledge and ability to formulate scientific tasks within the respective area
- show knowledge and ability to work out the ways of problem solving within the respective area

Space Technology and Instrumentation

The student will after the training

- show knowledge and ability to solve complex technological problems within respective area
- show knowledge and ability to develop, build and test space instruments

Atmospheric and Space Science, research oriented

The student will after the training

- show knowledge and ability to formulate scientific tasks within the respective area
- show knowledge and ability to work out the ways of problem solving within the respective area

Spacecraft Design

The student will after the training

- show knowledge and ability to formulate and solve problems with construction and integration of a spacecraft with payloads
- show knowledge and ability to develop solutions in form of models and products

Credits

The programme requires 120 credits.

The credits stated indicate the total for all courses leading to the degree. All courses are to have been completed and passed.

Special requirements

Higher Education Ordinance and Luleå University of Technology

Independent project (degree project)

A requirement for the award of a Master of Arts/Science (120 credits) is completion by the student of an independent project (degree project) for at least 30 credits in the main field of study. The degree project may comprise less than 30 credits, however no less than 15 credits, if the student has already completed an independent project in the second cycle for at least 15 credits in the main field of study or the equivalent from a programme of study outside Sweden. (The Higher Education Ordinance, Annex 2 Qualifications ordinance)

Master of Arts/Science (60/120 credits) require a previous degree of Bachelor, Bachelor in fine arts or a professional degree of at least 180 credits or an equivalent foreign degree. (SFS 2006:1053, ch. 6, 5 § also appendix 2, Degree regulations)

A minimum of 90 credits of the education's 120 credits must consist of courses at second cycle level. A requirement for a Master's degree is that a main subject area has been formulated. (Riktlinjer för Bolognaanpassning (Guidelines for Bologna adaptation), LTU Dnr 783-06)

Detailed specific requirements for this degree

The master thesis shall be within the application area.

In addition a completed high school degree, bachelor degree, or international degree of at least 180 ECTS is required. At least 22.5 ECTS of mathematics should be completed within the degree.

A combination of courses from the tracks Atmospheric and Space Science and Space Technology and Instrumentation is possible and gives the Master of Science with a Major in Space Technology without specialization. Programme leader suggest which courses should be completed.

All course requirements for this degree are stated in the official syllabus.

Degree certificate

A degree certificate will be issued upon application to students who fulfil the requirements for a degree.

Course requirements for this degree

Syllabus - [Master Programme in Earths Atmosphere and the Solar System](#) (*Utbildningsplan - Jordatmosfär och solsystem, master*)

Syllabus - [Master Programme in Space Science and Technology](#) (*Utbildningsplan - Rymdvetenskap och rymdteknik, master*)

Syllabus - [Master Programme in Spacecraft Design](#) (*Utbildningsplan - Rymdfarkostdesign, master*)