UiT Norges arktiske universitet

Program description
Aerospace Engineering – Master

Online part time 3 or 4 years
120 Credits/Campus Narvik

Based on the document “Vilkår for bruk av tilleggsbetegnelsen Sivilingeniør (siv.ing.)” approved by The Norwegian Association of Higher Education Institutions spring 2023.

The programme description has been approved by the board of Faculty of Engineering Scienceand Technology on 24 September 2025

Valid from the academic year 2026/2027

Study programme name	Bokmål: Satellitt- og Droneteknikk, sivilingeniør - master Nynorsk: Satellitt- og Droneteknikk, sivilingeniør - master Engelsk: Aerospace Engineering - master
Degree obtained	Master i teknologi, Satellitt- og Droneteknikk / Sivilingeniør Master of Science in Aerospace Engineering
Target group	The Master program in Aerospace Engineering is aimed at students with an interest in learning about Aerial Robots and Satellites. The program is suitable for students with a Bachelor of Engineering in Satellite Engineering, Drone Technology, Electrical Engineering, Mechanical Engineering, Mechatronics, Computer Engineering or similar.
Admission requirements, required prerequisite, recommended prerequisite knowledge	A relevant undergraduate bachelor in engineering, primarily within electronics or space technology, but it may also be within related fields such as automatic control, communications, power electronics or computer engineering. You must however have a sufficient background in electronics and communications. In addition, the following requirements must be met: • minimum 25 ECTS in mathematics (equivalent to Mathematical Methods 1, 2 og 3) • 5 ECTS in statistics • 7,5 ECTS i physics on a higher level is required. The requirement for physics can be covered by 7.5 ECTS in physics, building physics, fluid mechanics, thermodynamics and/or mechanics of materials. If you do not have enough mathematics and/or physics to qualify for a master's degree in technology, you can take one of these courses in the first semester at UiT in Narvik: TEK-2800 Mathematics 3 (5 ECTS) and/or TEK-2801 Physics 2 (5 ECTS)
Certificate of good conduct	N/A
Suitability assessment	N/A
The study programme's Learning Outcome	**Knowledge:** • has advanced knowledge within the field of Aerospace Engineering with a specialized focus on one of the offered disciplines. • has thorough knowledge of the central theories and methods within the field of Aerospace Engineering. • can apply and adapt the obtained knowledge to new areas within Aerospace Engineering. • can analyze problem statements within Aerospace Engineering on the basis of its history, traditions, distinctive characteristics

	and its influence on society. **Skills:** • can analyze existing theories, and methodologies in the field of Aerospace engineering and work independently on practical and theoretical problems. • can use relevant methods for research and development in an independent manner. • can analyse and remain critical to various sources of information and apply them in academic reasoning. • can complete an independent, narrowed research or development project with supervision, that is aligned with current standards of ethics in research. **General competence:** • can analyse relevant academic, professional and research ethical problems. • can apply their knowledge and skills in new areas in order to carry out advanced assignments and projects. • can communicate extensive independent work and masters language and terminology of the academic field. • can communicate about academic issues, analyses and conclusions in the field, both with specialists and the general public. • can contribute to new thinking and innovation processes.
Academic content and description of the study program	The Master of Science in Aerospace Engineering is a study program consisting of 120 ECTS. You can complete the online master's program over 3 or 4 years. The online program is designed for students who are working and cannot attend classes on campus. We recommend that online study be carried out in collaboration with a company that facilitates mutual benefit. Among other things, there is an opportunity to propose a master's thesis in collaboration with the company. The choice between a 3- or 4-year program depends on the amount of time a student can commit to their studies. The 3-year option requires 75% of the student's time, while the 4-year option is designed for a 50% time commitment. For more information, see the latest version of the study plan under "Study plan" on the program's main page. The program is applicable for students with an interest in learning, developing and applying state-of-the-art technology for space-related purposes. This type of technology has many similarities with technologies for other extreme environments, such as arctic regions and subsea, and students with interest in development of technologies in such fields will also find this program relevant. The online program is a part-time study conducted by the Department. The program covers the following disciplines: • Satellite Communication • Satellite Structures, Materials and Mechanisms • Satellite Data Processing

- Systems Engineering
- Satellite Power Systems
- Embedded Systems
- Mathematical Modeling and Simulation
- Classical Mechanics
- Linear Algebra and Numerical Methods
- Control Engineering
- Artificial Intelligence and Intelligent Agents

See the individual course descriptions for more information about their contents.

Table 1: Programme structure 3-year Online

Semester	**10** credits	**10** credits
1	STE-3800 Classical Mechanics (5 ECTS)	MAT-3801 Numerical Methods (5 ECTS)
	STE-3602 Embedded Systems (5 ECTS)	MAT-3800 Linear Algebra II (5 ECTS)
2	STE-3606 Satellite Structure, Materials and Mechanisms (5 ECTS)	DTE-3608 Artificial Intelligence and Intelligent Agents (5 ECTS)
	STE-3607 Satellite Data Processing (5 ECTS)	STE-3605 Mathematical Modeling and Simulation (5 ECTS)
3	ELE-3606 Control Engineering	STE-3610 Satellite Communication (5 ECTS)
		TEK-3500 Innovation and Management (5 ECTS)
4	STE-3900 Master Thesis (10 ECTS)	STE-3608 Satellite Power Systems (5 ECTS)
		TEK-3501 Innovation and Economics (5 ECTS)
5	STE-3900 Master Thesis (10 ECTS)	STE-3609 Systems Engineering (10 ECTS)
6	STE-3900 Master Thesis (20 ECTS)	

Table 2: Programme structure 4-year online

Semester	**10** credits	**5** credits
1	MAT-3801 Numerical Methods (5 ECTS)	STE-3800 Classical Mechanics (5 ECTS)
	MAT-3800 Linear Algebra II (5 ECTS)	
2	STE-3606 Satellite Structure, Materials and Mechanisms (5 ECTS)	DTE-3608 Artificial Intelligence and Intelligent Agents (5 ECTS)

	STE-3605 Mathematical Modeling and Simulation (5 ECTS)	
3	ELE-3606 Linear Control Engineering	STE-3602 Embedded Systems (5 ECTS)
4	STE-3608 Satellite Power Systems (5 ECTS)	
	STE-3607 Satellite Data Processing (5 ECTS)	TEK-3501 Innovation and Economics (5 ECTS)
5	STE-3609 Systems Engineering (10 ECTS)	STE-3610 Satellite Communication (5 ECTS)
6	STE-3900 Master Thesis (15 ECTS)	
7	STE-3900 Master Thesis (10 ECTS)	TEK-3500 Innovation and Management (5 ECTS)
8	STE-3900 Master Thesis (15 ECTS)	

Learning activities, examination and assessment	Learning activities will vary depending on the subject. Lectures will incorporate digital resources, like pre-recorded videos and/or live streaming. A portion of the scheduled lectures will, however, be reserved for other learning activities such as problem solving, completing mandatory work, project work, or laboratory work. The person with course responsibility or teaching assistants will be present to provide guidance at these events. Mandatory laboratory exercises are included in some courses, where they require physical presence. Laboratory work is organized in assembly weeks. Scientific theory, application, and analysis are emphasized in assignments and projects. The individual course descriptions provide further information. The students learn through preparation, working on lecture theory, completing mandatory coursework requirements, engaging in problem-solving and project work, collaborating in groups, participating in laboratory work, self-evaluating, and undertaking a fair amount of self-study. The students learn through the same mechanisms as mentioned for the traditional lecture model above; however, the students have a larger responsibility themselves to acquire the knowledge necessary for problem solving. It is important that the student knows the difference between problem solving, coursework requirements, and evaluation. Coursework requirements are mandatory requirements that have been precisely formulated in the course description. In order for the student to be assessed, the course requirements must be approved. Tasks given in problem-solving sessions are tasks that will not necessarily be marked; these are given to the students for practice and/or preparation

	for bigger tasks such as coursework requirements. It shall be made clear when a task is presented whether or not it is voluntary or part of the coursework requirements. Mandatory coursework requirements may, for instance, be formulated as “X of Y mandatory tasks must be approved,” “the student must be present 70% of the scheduled hours.” The person with course responsibility makes a list of students with approved coursework requirements to the exams office. Only those with approved coursework will be assessed. The manner in which the students are assessed is described precisely in the course description of individual courses. This may, for instance, be: • Written exam (pen and paper) • Oral exam • A combination of several works, which may include a written exam • Group exam • Portfolio assessment The online master’s program will be based on digital examinations using one of the modalities described above, where students must submit their solutions through the designated platform. Nevertheless, in some courses, physical attendance will be required for the exam. The type of examination will be precisely established in the individual course descriptions. The opportunity for completing a re-sit exam (re-assessment) in a course may vary between courses. Details may be found in the individual course description. Attending the learning activities in the various courses provides the students with knowledge of scientific theory and experience using the scientific method. Subject matter in the specific courses is based on relevant and, in some cases, state-of-the-art research. Some courses require mandatory health, security, and environment (HSE) training before students are allowed access and given permission to work in laboratories, workshops, and similar. This also goes for participation in fieldwork/research cruises and similar. Please contact your immediate supervisor for the list of mandatory courses.
The study program’s relevance	Successfully qualified candidates can acquire jobs in a range of Norwegian businesses, which contribute technical products and services within aerospace and satellite technology, but also within fields as subsea engineering, systems engineering, or robotics and automation. The program also provides a basis for working with project management and marketing, or teaching technical subjects at Bachelor's level. The degree qualifies to start as a PhD-student within relevant ph.d.-areas (i.e. engineering cybernetics, applied mathematics, control

	engineering, engineering science). UIT Campus Narvik has a ph.d. education within the field of Engineering science, which students from Aerospace Engineering are qualified to get a position at, if the grades are sufficient (for instance for acceptance as a doctoral student), and if there are available positions. The academic content, learning activities and assessments presented in this study plan ensure relevance to the current state-of-the-art in the field of Aerospace Engineering.
Work scope	The students shall expect to work 30 hours (3-year program) or 20 hours (4-year program) pr. week, including lectures, seminars, and self-studies.
For master's theses/independent work in master's degrees	The final master's thesis (diploma) can be carried out in close collaboration with industry partners and/or on the basis of existing research and development projects. The work is usually performed individually. Regular status meetings will be held through the entire project period. The diploma will be evaluated solely based on a final written report.
Language of instruction and examination	English
Internationalisation	A Master's in Aerospace Engineering has an international perspective, as the aerospace field itself is indeed very international. The students get an international perspective through the English instruction language, international lecturers, and different learning activities. The online study program is primarily intended for Nordic applicants but is also open to international students residing in Norway. Individual courses may be taught in Norwegian when appropriate.
Student exchange	N/A
Supervised professional training	N/A
Administrative responsibility and academic responsibility	Faculty of Engineering Science and Technology, Department of Electrical Engineering
Quality assurance	The study plan is subject to revision and quality assurance in accordance with the quality assurance program at IVT with regards to the conditions on use of the protected tittle Sivilingeniør (Siv. Ing.) acknowledged by NRT.
Other regulations