

Master Aerospace Engineering Space Flight (SF)

MSc Programme



The Space Flight MSc track is offered to graduates that are looking for an academic programme that prepares them well for an exciting career in the international space sector. The master curriculum covers the full life cycle of space missions, from conceptual design to implementation and utilisation. This track focuses on space engineering and space exploration.

Degree	Master of Science
Starts	September
Type	Full-time
Credits	120 ECTS, 24 months
Language	English
Application deadline	
- Dutch degree	May 1 st
- Non-Dutch degree	
• EU/EFTA	April 1 st
• Non-EU/EFTA	January 15 th
Scholarships	tudelft.nl/scholarships

! The number of students who can start this track in 2021-2022 is limited. Please check the website for more information.

Astronautics is quite different from aeronautics because each space mission is uniquely designed to perform a specific task related to its operational or scientific objectives. This requires an “end-to-end” approach where the objectives drive the design of the mission and data processing is an integral part of the mission. Within this track, you are offered opportunities to participate in ongoing engineering and scientific projects at the participating chairs.

You will develop skills to carry out an engineering or research project independently and individually. This will be achieved by a highly focused MSc thesis project under strict supervision. In addition, you will acquire broad knowledge in the field of space and its

applications. These objectives will make you a broad aerospace engineer with generally applicable engineering and research skills and with a clear focus area.

Profiles

The track consists of two profiles, Space Engineering and Space Exploration. Each profile has a different focus, but they are also interrelated. On the one hand you will become an all-round space professional, but on the other hand you will acquire generic skills that enable you to pursue a career in a broad spectrum of industrial and research environments.

Master Aerospace Engineering Space Flight (SF)

FIRST YEAR	SECOND YEAR
CORE COURSES (15 EC)	INTERNSHIP (18 EC)
PROFILE COURSES SPACE ENGINEERING (14 EC) SPACE EXPLORATION (16 EC)	MASTER THESIS PROJECT (42 EC)
LITERATURE STUDY (12 EC)	
RESEARCH METHODOLOGIES (2 EC)	
ELECTIVE COURSES SPACE ENGINEERING (12 EC) SPACE EXPLORATION (10 EC)	

Space Engineering

Space Engineering is the field of engineering concerned with the end-to-end engineering of space systems and system components. Areas of interest include the engineering of advanced/innovative space missions, space vehicles and instruments, sensors, actuators, mechanisms, and thrusters. In Space Engineering, applying state-of-the-art technologies and providing innovative solutions is daily business. End-to-end engineering generally covers the full product cycle from conceptualisation, design, development and operations, i.e. "from the cradle to the grave". In the Space Engineering profile you will learn how to engineer complex space systems on their constituting elements, subsystems, instruments and components using a systematic approach. You will gain expertise on every phase of a spacecraft system's development including design, integration, verification/testing and operations. You will also learn about management aspects of engineering including scheduling and planning, and about working in multi-disciplinary design teams to formulate spacecraft system solutions using a concurrent engineering approach. This will enable you to apply your gained knowledge also to other complex technical systems outside of Aerospace Engineering.

Space Exploration

The Space Exploration profile addresses many aspects of satellite missions: from concept to applications, and from launch to end-of-life. This profile aims at delivering skilled space mission engineers and scientists. You will learn about techniques and methods to track, predict, optimize and very precisely compute satellite

trajectories, both for spacecraft around the Earth and planetary missions in our Solar System. You will also learn about methods and tools to exploit satellites for a wide range of scientific and societally relevant issues and applications, including monitoring all kinds of aspects that are related to Earth's climate such as sea level and the ice caps, methods for mitigating the growing problem of space debris and retrieving properties of other celestial bodies in our Solar System. Because of its generally theoretical nature, this profile is quite challenging but might pave the way into an academic career.

Career Prospects

The prospects of finding a job with an MSc degree in Aerospace Engineering and a specialization "Space Flight" are typically very good. Many of our graduates find work in leading aerospace and space industries and institutes (Dutch and international). This includes companies and institutions such as Airbus Defence and Space Netherlands, NLR, TNO, SRON, ISIS, ESA, NASA and many others. Other graduates remain in the academic world by doing a PhD, begin their own firm, or find employment in other sectors (technical advisory companies, energy companies, banking, et cetera). The increasing dependence of business on systems engineering technologies continues to increase the demand for highly qualified aerospace engineers.



21st
QS World Ranking (faculty)



1.263
MSc students



43%
international MSc students



100%
English-language programme

Career Perspective



79%
job within 3 months



40%
job in Aerospace sector



60%
job in other sectors such as
Engineering, Management,
Consultancy, etc.