Bachelor / Aerospace Engineering

Are you ready to make a difference?
How do you make an aircraft climate neutral? How do you design satellites that can monitor climate change? How will you dispose of them when they fail? How can you make aircraft quieter? These are questions you will encounter during the Aerospace Engineering bachelor’s programme.

What does the programme look like?
The programme starts off with a series of introductory courses in the field of Aerospace Engineering, as well as general engineering topics such as calculus and mechanics. Quickly you will realise that every course builds upon the foundations provided by previous courses, which requires you to really keep up the pace in order to be successful. Lectures are taught by experienced lecturers and professors, who use examples to illustrate the importance of their disciplines. Extensive group projects are employed to integrate the skills and knowledge you acquired during lectures. During the projects you will solve design challenges, based on real-life cases, such as ultra-efficient new aircraft designs and drone swarms. You learn how to work in international teams, think outside the box and communicate effectively.

Study environment
You will study alongside more than 2500 BSc and MSc students at the Faculty of Aerospace Engineering. The Faculty is unique in Europe and enjoys worldwide acclaim.

Aside from the theoretical part of the BSc programme, the Faculty is able to offer you access to state-of-the-art facilities over the course of several practicals, including an advanced flight simulator, our own jet aircraft as a flying classroom, subsonic, supersonic and hypersonic wind tunnels and a large laboratory for the development, manufacturing and testing of structures and materials.

"The study is actually broader than you think, you learn mathematics, physics, aerodynamics, structures and apply these skills to aerospace related modules."

Noortje
Master's student Aerospace Engineering

Admission requirements
Selection procedure
Language
English
Numerus Fixus - Selection procedure
Yes. 440 first year students
Binding Study Advice
60-65% of students get a positive BSA
Average study week (42 hours)
Lectures: 16 hours
Projects and laboratory courses: 8 hours
Self-study/tutorials: 18 hours
What will you learn?

First year
From the very first day of your studies, you will be able to dive into the specifics of aerospace engineering. While you are also taught the basic engineering sciences such as mechanics and calculus, the programme focuses on how to apply these engineering disciplines to aerospace design problems as soon as possible. In the first year this occurs mainly in the aerospace design projects, which will take up a significant portion of your weekly schedule.

Second year
In the second year, you will learn more about designing systems and processing measurement data. A series of intensive mathematics courses will provide you with the tools required to tackle the aerospace courses. Topics that were discussed briefly in the first year are now explored in depth providing you with a solid theoretical background in subjects such as aerodynamics and orbital mechanics. The aerodynamics courses are supplemented by two wind tunnel practicals.

Third year
The first semester of the third year allows you to broaden the scope of your education by means of a minor programme. You can choose to do this at other TU Delft faculties, at other universities in the Netherlands or at one of our many partner universities abroad.

Your last semester consists of the final BSc courses as well as a flight practical in the faculty’s flying classroom, a Cessna Citation aircraft, which you will use to carry out measurements in flight. Everyone finishes their third year with the Design Synthesis Exercise (DSE). During a ten-week period, you will work with a team of students on an original and relevant design assignment, in many cases commissioned by aerospace companies or research organisations.

What is the profile of an AE student?
• Good at acquiring new maths and physics skills at a rapid pace
• Likes solving multidisciplinary design problems with a group of fellow students
• Able to study in a very internationally-oriented environment with English as the main language

Follow-on Master’s programmes
• Aerodynamics & Wind Energy
• Aerospace Structures & Materials
• Control & Operations
• Flight Performance & Propulsion
• Space
• European Wind Energy Master

Job prospects
• 88% of MSc graduates find a job they like within 6 months after graduating
• 40% become employed in the Aerospace sector
• 60% find a job within other engineering sectors, consultancy or management
<table>
<thead>
<tr>
<th>First quarter</th>
<th>Second quarter</th>
<th>Third quarter</th>
<th>Fourth quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineering Drawing</td>
<td>Introduction to Aerospace Engineering I</td>
<td>Introduction to Aerospace Engineering II</td>
<td>Linear Algebra</td>
</tr>
<tr>
<td>Introduction to Aerospace Engineering I</td>
<td>Statics</td>
<td>Aerospace Materials</td>
<td>Aerospace Mechanics of Materials</td>
</tr>
<tr>
<td>Calculus I.a</td>
<td>Calculus I.b</td>
<td>Physics: Thermodynamics, Waves and Electromagnetism</td>
<td>Calculus II</td>
</tr>
<tr>
<td>Dynamics</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

First year

Second year

Third year

Fourth quarter

<table>
<thead>
<tr>
<th>System Design</th>
<th>Test, Analysis and Simulation</th>
<th>Oral Presentations</th>
<th>Scientific Writing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerospace Design and Systems Engineering II</td>
<td>Flight and Orbital Mechanics</td>
<td>Low Speed Wind Tunnel Test</td>
<td>Artificial Intelligence for Aerospace Engineering</td>
</tr>
<tr>
<td>Aerodynamics I</td>
<td>Propulsion and Power</td>
<td>Aerodynamics II</td>
<td>Computational Modeling</td>
</tr>
<tr>
<td>Differential Equations</td>
<td>Structural Analysis and Design</td>
<td>Structural Analysis and Design</td>
<td></td>
</tr>
<tr>
<td>Probability and Statistics</td>
<td>Vibrations</td>
<td>Applied Numerical Analysis</td>
<td></td>
</tr>
</tbody>
</table>

Second year

Third year

Fourth quarter

Minor Programme

Simulation, Verification and Validation
Production of Aerospace Materials
Systems Engineering & Aerospace Design
Aerospace Flight Dynamics & Simulation
Design Synthesis Exercise

Aerospace Design Projects
Academic Development
Aerospace Engineering and Technology
Basic Engineering Sciences
Mini-MOOC

What will you learn?
A selection of first year BSc topics, including a basic history of flight, the atmosphere and how aircraft fly.

Why take the course?
The mini-MOOC gives a good impression of the level of difficulty and the material taught in the first year of the BSc Aerospace Engineering at TU Delft. It can help you decide whether this BSc is right for you and if it is, it will give you a head start to the programme.

Is it compulsory?
Everybody can take part in the free online course voluntarily. But it is compulsory for all students taking part in the decentralised selection procedure to enrol in the BSc.

Important Dates & Deadlines

January 15th  Registration deadline
Complete the mini-MOOC, an online introduction course, to get acquainted with the first year material.

End of January  Deadline mini-MOOC
Work on the Questionnaire on Motivation and Academic Attitude.

End of February  Deadline Motivational Questionnaire
Work on the three part academic test and write a reflection on your application procedure.

End of March  Deadline Academic Test
Wait for your ranking number.

April 15th  Receive ranking number

This information is based on the selection procedure for the academic year of 2022/2023 and is subject to change. For up-to-date information, please check our website.