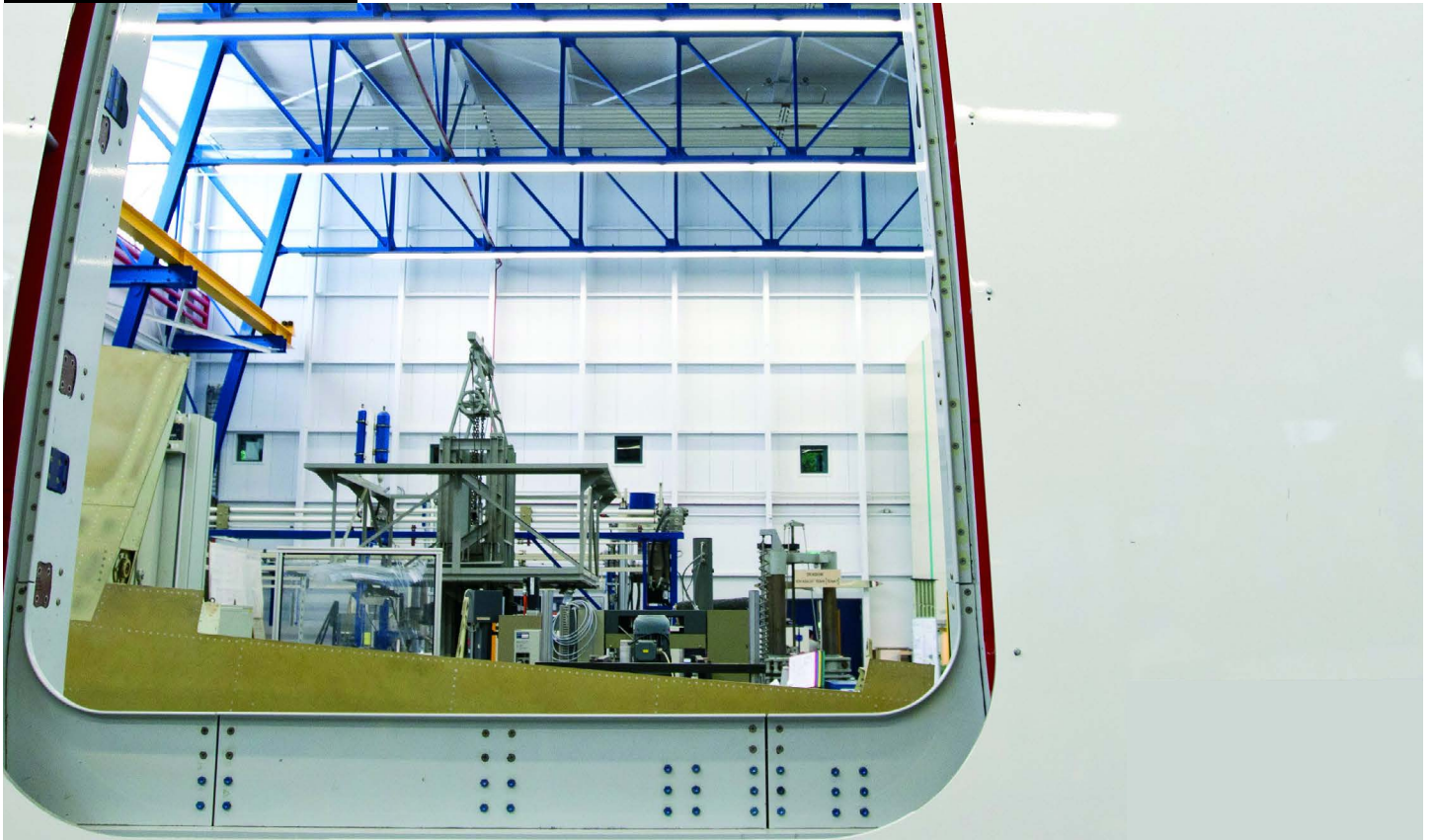


Master Aerospace Engineering Aerospace Structures and Materials (ASM)

MSc Programme



No structure is indestructible. Time, environment, repeated use, and misuse all take their toll on everyday structures, bringing them closer to failure. This is no comforting thought when walking onto an airplane, but it is a reality that structural designers must face:

**“How do you design something that you do not want to fail while accepting it eventually will?”
The answer is: very carefully.**

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 challenges structural engineers are faced with are as follows: First, they must understand the raw materials and the level of engineering already applied in their creation. Second, they need to synthesize material behaviour and required structural function into a working design. Third, compromises in the working design need to be made to address manufacturability. Finally, all of this must be completed while continually assessing the impact of usage on the durability and longevity of the final structure.

The Aerospace Structures and Materials (ASM) MSc track aims to equip students with the necessary knowledge and practical skills necessary to tackle this challenge in an industrial

or research environment. From an educational standpoint, students will be exposed to a broad range of courses examining this entire process in the context of the design, manufacturing, and analysis of a composite aircraft wing. This will provide the foundation for subsequent specialisation in one of four thematic profiles.

Profiles

Students can graduate within one of four thematic profiles, which determines the courses followed in the first year of the MSc.

Material Analysis

For students planning to develop materials from micro to macro level and design state-of-the-art

Master Aerospace Engineering Aerospace Structures and Materials (ASM)

FIRST YEAR	SECOND YEAR
CORE COURSES (15 EC)	INTERNSHIP (18 EC)
PROFILE COURSES (±17 EC)	MASTER THESIS PROJECT (42 EC)
LITERATURE STUDY (12 EC)	
RESEARCH METHODOLOGIES (2 EC)	
ELECTIVE COURSES (±14 EC)	

solutions in terms of durability of materials as well as their self-healing capacity.

Structural Analysis

For students who plan to become structural designers or stress engineers. They learn to accurately calculate and predict the occurring stresses in structures and come up with clever structural solutions through advanced design techniques and optimisation.

Manufacturing

For students who aim to become a design-for-manufacturing engineer or work in production surroundings and integrate the needs of the design to production and vice versa.

Durability of Structures and Materials

For students who aim to work for air- and spacecraft manufacturers, and regulators and design for and monitor the structural health of structures & materials or work as certification engineers or crash investigator.

Each thematic profile is closely related to the research themes within the department and is supervised by experts in their field. You can select the theme of their choice during the first period of your MSc programme.

Thesis Projects

Thesis projects can be carried out with any of the research groups within the ASM department, regardless of the thematic profile selected by the student. Additionally, numerous opportunities exist to carry out research within industry under the close supervision of an ASM staff member. After completing the MSc track Aerospace Structures & Materials you will be able to:

- Develop design requirements for materials and structures.
- Design a lightweight structure and explain the reasoning and physics behind the design.

- Design a material suitable for aerospace application and explain the reasoning and physics behind the design.
- Analyse a structural design using Finite Element Methods.
- Explain the manufacturing processes and their applications.
- Select suitable manufacturing processes.
- Manufacture a prototype.
- Explain and predict how a design will perform over its lifetime and explain how the performance can be monitored.

The ASM Track is committed to making the MSc experience a memorable one. In addition to offering a world-class education many opportunities exist for students to expand their horizons through industry involvement, visits and guest lectures. Our students have organized themselves into their own ASM student society, 'Enlightness' which organizes lunch lectures, company visits, drinks and the annual ASM career event.

Career Prospects

Graduates from the ASM track are in high demand. Many find jobs even before they graduate and go on to work both within the field of Aerospace or other sectors. Many go on to work at Airbus, Fokker, Eurocopter or their many suppliers and contractors. Many others go to the automotive industry to work at Mercedes-Benz, BMW or McLaren. Other students start their own companies or work in other fields such as consultancy and finance. And some pursue a PhD degree either at TU Delft or somewhere else.



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.