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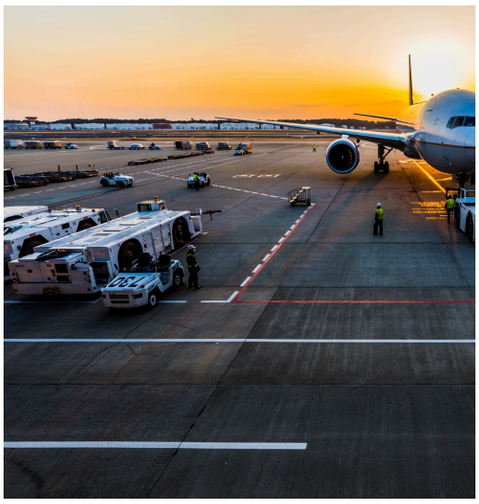
MINOR
AEROSPACE MANAGEMENT & OPERATIONS



The Minor Aerospace Management & Operations studies the civil aviation industry and its global development in conjunction with technological advances, focussing on managerial decisions that airlines and airports face. Particular attention is drawn to the interplay between airlines, airports, aircraft, the economy, society, and the environment.

WHAT IS A HTHT MINOR?

A HTHT-minor fits within the UT profile: High Tech, Human Touch. The minor is offered in English and accessible for both national and international students. The goal of the HTHT-minor is to illuminate specific societal themes for which the UT develops High Tech Human Touch solutions. These solutions are created by conducting high-quality research. Both the form and the content of the minors are High Tech Human Touch (multidisciplinary) and are profiling for the student.

The UT offers most HTHT-minors in a coherent package of 2 (30 EC). There are also HTHT minors of 15 EC that do not belong to a package. You can choose one of these minors and combine this with one minor of a package. If possible, you can even choose 2 minors from different packages.

We approach the civil **aviation industry** from multiple angles. We study its macro-level development in conjunction with technological advances, macroeconomic, and political developments, but we also analyze the micro-level problems and decisions that airlines and airports face, such as route structures, business models, operations, costs and revenue management. We thereby create a healthy mix of **qualitative and quantitative elements**.

The Minor Aerospace Management & Operations and the Minor Aircraft Engineering together form the HTHT package 'Aeronautical Engineering & Management'. The minor Aircraft Engineering explores the technical aspects of aircraft design and maintenance: aerodynamics, structures and systems, while the minor Aerospace Management & Operations focuses on the **utilization** of aircraft, the industrial and management processes involved.

We address questions like: Which strategic choices determine airlines' successes, and how do they best

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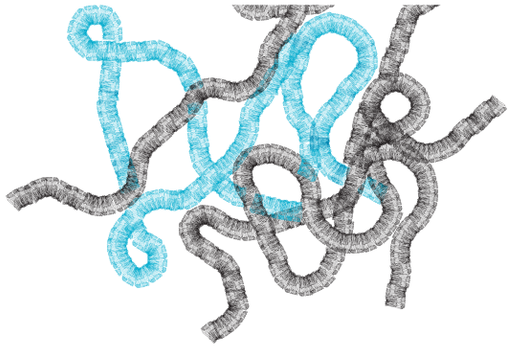

Ready for departure, cleared for take-off!

plan their day-to-day operations? Why are profit margins of airlines so razor-thin, despite air travel having been a continuous growth market? How do airlines best plan their day-to-day operations? How can aircraft be utilized efficiently? Why do different airports have different governance structures, and how do they actually earn their money? How do airlines and airports interplay with the environment and what is the role of the government in that? Why do governments attach so much value to having an aerospace industry, despite the massive investments that it requires?

At the start of the minor, we discuss the development of the **global aviation industry** and the factors that drive it. On several moments you will discuss currently relevant topics in group assignments. Thereafter, we go into **airline management**. We discuss business models, strategic decisions, route structures, product choices, but especially also operational decisions, like fleet scheduling, maintenance, and revenue management.

For the **quantitative operational topics**, basic knowledge of mathematics, probability theory, and statistics is required, and some refresher exercises will be made available. Theory will be alternated with **guest lectures** from important players in the aerospace industry, for which you will prepare questions. There will be an assignment on **maintenance**, applying the theory by solving maintenance-related problems (calculating downtime as a function of spare parts availability, failure rates of multi-element systems, etc.), and an assignment on **revenue management**, where you gain insight in the ways airlines set prices for groups of seats so as to optimize revenues.

All knowledge gained about the aerospace industry and airline management will be directly applied in a management game where in groups you run your **own, virtual airline** in a **live competition** against your peers throughout the minor. You will take decisions concerning, for example, routes to fly, ticket prices, reacting to a workers' strike or a safety incident. You will motivate and reflect on your decisions in various assignments and a final presentation.

The final point of focus is the **airport**. We study a.o. the structure of the airport industry, airport economics, the relationship between airports and airlines, airport operations, and the impact of airports on the economy, society, and environment. This knowledge prepares you for the airport analysis project. You choose an airport and describe its structure, its functions, its strengths and weaknesses compared to competitors, and make recommendations for its future strategy.

After completing this module, you know how the global aerospace industry developed to the state in which it is now, what challenges lie ahead, how airlines and airports run their businesses, and how the aerospace industry connects to the broader economy, society, and environment. Two written exams will complete the assessment.

MORE INFORMATION

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For more information about this minor and for general information about minors:
www.utwente.nl/minor