

Master Aerospace Engineering Control and Operations (C&O)

MSc Programme



Our programme provides a fundamental background in modern flight control, human machine systems, air traffic management systems, noise and climate effects, safety and air transport operations research.

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

Control and Operations is focused on the through-life operations associated with aerospace industry. It studies airports, the avionics systems of individual aircraft, flight control and flight deck design, airline operations and support (maintenance), air traffic control and air traffic management, as well as operations and noise and emissions associated with air transport as a whole.

By selecting one of the three C&O profiles, the student chooses an educational programme that contains a particular balance of these elements. Theory and practice are combined in exciting and challenging fields of study for talented and

ambitious students. You will build experience through courses, practicals, a directed internship and a supervised final research project. The C&O profiles incorporate a research project that builds on the learning gained from the taught modules. C&O research projects focus on academic quality, the contribution to the body of knowledge in the field and feature high societal and industrial impact.

Profiles

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

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FIRST YEAR	SECOND YEAR
ETHICS COURSE	INTERNSHIP OR J.I.PROJECT
CORE + PROFILE COURSES	MASTER THESIS PROJECT
PROFILE ELECTIVES	
FLEX ELECTIVES	

Control and Simulation (C&S)

The Control and Simulation section strives to improve the safety of aerospace operations through the design and experimental evaluation of automatic flight control systems, human-machine systems, sense & avoid and air traffic management systems. By modelling the dynamic behaviour of flying vehicles, C&S explores the entire scope of control options, ranging from manual towards fully autonomous control. The C&S section houses the Micro-Air Vehicle laboratory, the research flight simulator SIMONA and the Cessna Citation laboratory aircraft. In these laboratories many of the theoretical innovations are experimentally tested in real or simulated flight

Sustainable Air Transport (SAT)

The section Sustainable Air Transport is a combination of the former two sections: Aircraft Noise and Climate Effects (ANCE) and Air Transport and Operations (ATO). This combined section studies the environmental impact of aviation through developing accurate models for the prediction of aircraft noise, emissions and climate effects as well as the efficiency, safety and resilience of aerospace operations through mathematical models and simulations that analyse, explain, predict and optimise the performance of air transport operations and processes.

You will learn how to deal with questions like 'How can we define how efficient operations are?' or 'What is the contribution of aviation to greenhouse gasses in the atmosphere?' Through the different profile courses you will be introduced to the important and widely used concept of agent-based modelling of complex distributed dynamic systems and the concept of

randomness, accounting for the unpredictability of daily life. You will also learn how to be able to quantify the effects of aviation on the atmosphere, both near-the airport and globally (climate effects).

In the end you will be equipped to respond to future needs to make aircraft operations such as aircraft maintenance schedules, network and fleet planning, airport and airline operations and safety and risk analysis of large scale air traffic operations, more environmentally friendly.

Career Prospects

The job perspectives for C&O students continue to be extremely bright, and many students have several job offers before they graduate. The versatile character of the MSc track leads to high-quality graduates with a great variety of where they start their societal career. Examples are large multinational industries (Boeing, Airbus/EADS, Eurocopter, BMW, Mercedes, Shell, ASML, AirFrance/KLM), established research laboratories (NLR, DLR, Eurocontrol, Max Planck, NASA), and consultancy and finance (McKinsey, Bain, BCG, ING, Deutsche Bank). A considerable number of students go and work directly in air transport, entering air traffic control, or even become pilots. Finally, a significant number of our students enter academic life and become a PhD student at high-ranking universities such as MIT and Georgia Tech.



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.