

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	scholarships.tudelft.nl

Programme

The Control and Operations core course programme provides a fundamental background in operations research, avionics systems, flight control and automation. The profile courses are associated with one of three sections (research groups) the student has joined. The elective courses are chosen after consulting with the responsible Section head. After completing the required course programme and the internship, the student performs the literature survey associated with the thesis. The literature survey and final thesis project are performed with the same supervisor, working on a specific project of current relevance to the field.

Profiles

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 full 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

Control and Operations (C&O)

FIRST YEAR	SECOND YEAR
CORE COURSES (≥ 18 EC)	INTERNSHIPS (18 EC)
PROFILE COURSES (≥ 13 EC)	
LITERATURE STUDY (12 EC)	MASTER THESIS PROJECT (42 EC)
RESEARCH METHODOLOGIES (2 EC)	
ELECTIVE COURSES (± 15 EC)	

Aircraft Noise and Climate Effects (ANCE)

The section Aircraft Noise and Climate Effects (ANCE) studies the environmental impact of aviation through developing accurate models for the prediction of aircraft noise, emissions and climate effects. Aircraft noise continues to be a very serious source of disturbance to the public. Current contribution of aircraft emissions to global warming is estimated to lie in between 1.5 and 5.5%, but is predicted to increase significantly. In addition, the level of scientific understanding of the climate effects of aviation is low. The vision of ANCE is that for the growth of aviation (5% per year) to be sustainable with a decreasing impact on the environment, more accurate modelling of the impact due to noise and emissions is required.

Interesting about ANCE is that its profile courses are limited, providing you more freedom to explore other track topics and electives, while being fully equipped to respond to future needs to make aircraft operations more environmentally friendly.

Air Transport Operations (ATO)

The section Air Transport and Operations (ATO) studies 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. These include, amongst others: aircraft maintenance

schedules, network and fleet planning, airport and airline operations and safety and risk analysis of large scale air traffic operations.

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 GA Tech.



4th

QS World Ranking (faculty)



45%

International students

Career perspective



79%

Job within 3 months