MSc Space Science & Technology
(1 Year Full Time)

This programme is ideal for graduates of Physics, Engineering and related disciplines, who want to transfer their expertise to the fast-growing global space sector. Ireland is a member of the European Space Agency (ESA) and dozens of Irish companies and researchers are involved in major international space missions. UCD is building Ireland’s first satellite, EIRSAT-1.

Course highlights include a hands-on CubeSat lab, payload development and satellite systems engineering of a high-altitude balloon experiment and participation in an international mission design team project. A 3-month internship provides relevant training and can lead to employment. Students have completed internships at the European Astronaut Centre (EAC), ESA, NASA-Ames, Cosine, ENBIO, InnaLabs, Skytek, Eblana Photonics and Réaltra.

Course Content and Structure

90 credits taught masters = 60 credits taught modules + 30 credits internship

Topics available include:

Core modules:
- The Space Environment & Spacecraft
- Applications of Space Science
- Space Sector Professional Skills
- Space Detector Laboratory
- Satellite Subsystems Laboratory
- Space Mission Design Field Trip
- Industry or Research Internship

Optional modules:
- Planetary Geomorphology
- Remote Sensing
- Stellar Astrophysics
- Galaxies and Observational Cosmology
- Data Science in Python

Modules and topics shown are subject to change and are not guaranteed by UCD.

Career Opportunities

The programme is space industry focussed, while also preparing graduates to pursue careers in related sectors. Satellite operator, test engineer, mission specialist, payload scientist and systems engineer are all roles that are in demand globally. Earth observation and environmental monitoring (especially to meet sustainable development goals), navigation, telecommunications and meteorology are application areas that rely heavily on graduates with satellite expertise.

The MSc can act as a stepping-stone to PhD research in areas such as atmospheric physics, space physics, aeronautics, propulsion and astrophysics, and to traineeships at European Space Agency establishments.

Entry Requirements

- An upper second class honours degree or the international equivalent in any area of physics or engineering is required. Entrants should have an analytical background, and a basic level of programming skills.
- Applicants whose first language is not English must also demonstrate English language proficiency of IELTS 6.5 (no band less than 6.0 in each element), or equivalent, such as TOEFL (iBT) score of 90 or PTE score of 63. Applicants with an IELTS score of at least 5.5 may apply for admission to the UCD Pre-Masters Pathway programme.

Graduate Profile

Katelin Smith

Coming from a primarily physics background, this course provided me with great exposure to engineering and design aspects of the space industry. I completed my internship at Eblana Photonics Ltd., a company which produces semiconductor laser diodes. Eblana currently produces some exciting contracts with ESA and a wide range of products for space-based sensing applications. Following my internship I was hired by Eblana and now work as an R&D test engineer.