University College Dublin
Ireland's Global University

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MSc Space Science & Technology
(1 Year Full Time)

This programme is ideal for any graduate of Science, Engineering, Computing or Mathematics who wants to apply their expertise in the Space sector.

Why Space?
- The Space sector is growing fast, driven by the increasing demands of space exploration, Earth observation, telecommunications and satellite navigation.
- It offers a huge diversity of career opportunities.
- Employers have difficulty finding graduates with "Space expertise".

Why Ireland?
- Ireland's space industry is on the rise, with currently 30-40 companies operating in the sector.
- Ireland provides strategic access to Europe for US multinationals, such as Curtiss-Wright and Moog who have bases in Dublin and Cork.
- Ireland is a long-standing member of the European Space Agency (ESA), with 70 companies participating in ESA contracts since 2000. Irish companies and researchers are involved in contracts for the Herschel and Planck Space Observatories, as well as the Rosetta mission, Solar Orbiter, Gaia and the James Webb Space Telescope.

What are the course highlights?
- Open to all graduates of Science, Engineering, Computing and Mathematics.
- Design your own curriculum
- Unique access to senior industry practitioners in workshop sessions
- Placement opportunities with industry leaders
- Highly relevant to recruitment needs of employers

How will I benefit ?
You will enhance your CV with "Space expertise", which is much sought after by employers in the sector. Modules are taught by a combination of experienced academic staff and senior industry practitioners to provide students with knowledge and skills which are highly relevant to recruitment needs.

Key Fact
Past placements include NASA, ESA, Curtiss-Wright, Cosine, EnBio, InnaLabs.

Why study at UCD?

Tradition
Established 1854, with 160 years of teaching & research excellence

Global profile
UCD is ranked in the top 1% of higher education institutions worldwide

Global community
Over 6,000 international students from over 120 countries study at UCD

Global careers
Degrees with high employability; dedicated careers support; 1 year stay-back visa

Safety
Modern parkland campus with 24 hour security, minutes from Dublin city centre

Course Content and Structure

90 credits taught masters	60 credits taught modules	30 credits research project

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
- Industrial or Academic Placement

Optional modules:
- Planetary Geomorphology
- Remote Sensing
- Stellar Astrophysics
- Galaxies and Observational Cosmology
- Data Science in Python
- Numerical Algorithms
- Geographic Information Systems

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

Course code: F060

Career Opportunities

Career opportunities include space research (mission specialist, payload scientist, mission planner), space-based applications (Earth observation and environmental monitoring, satellite navigation, telecommunications, space weather, radiation science, spacecraft engineering, manned space flight, space tourism), and enabling technology propulsion (simulations and testing orbital mechanics and materials). Top European employers include Airbus, Thales, Moog, Curtiss-Wright, and the European Space Agency. The MSc can also be used as a stepping stone to PhD research.

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Facilities and Resources

- Laboratory facilities and equipment are available for training in space detectors and small satellites, e.g., CubeSat and CanSat, with the opportunity for students to launch their own experiment on a high-altitude balloon. Mission design internationalises the student experience through collaboration with students from two other universities, in the design of a gamma-ray experiment modelled on the European Space Agency's concurrent design facility.

Apply Now

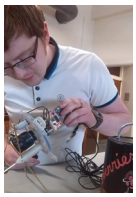
This programme receives significant interest so please apply early online at www.ucd.ie/apply

Entry Requirements

- Entrance requires an honours degree in any area of science, engineering, computing or mathematics. 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. For IELTS 5.5, there is a pre-masters option, which guarantees access to the MSc after one year.

Graduate Profile

Conor O'Toole MSc



MSc Space Science & Technology graduate Conor O'Toole did his research internship at NASA Ames Research Centre in California, adapting a space debris simulation to examine the potential of CubeSat technologies for a space-based Near-Earth Asteroid survey. After his MSc, Conor spent five months working at the European Space Agency, and is now applying to UCD for a PhD in gravitational waves.

Graduate Profile

Daniel Vagg MSc

"My favourite part was the Space Mission Design field trip to Tenerife. We worked in competing international teams. This was an incredible and unique experience. My industry placement was with the US multinational Curtiss-Wright, who provide data-handling for rockets such as the SpaceX Dragon capsules." Dan is now working for a new UCD spin-out company as software systems architect for accessing data from ESA's Gaia satellite mission.

Fees and Scholarships

Tuition fee information is available on www.ucd.ie/fees. Please note that UCD offers a number of postgraduate scholarships for full-time, self-funding international students, holding an offer of a place on masters programmes. Please visit www.ucd.ie/international/scholarships for further information.

Accommodation

UCD has accommodation for over 2,500 students across five locations. Places are limited and more information is available at www.ucd.ie/residences/
For information and advice on living off campus, please contact the UCD Residences Off-Campus Office or the UCD Student Union Accommodation Services. Please visit www.ucd.ie/residences/accommodation-booking-support/ for further details.

Related Masters Programmes of Interest

- MSc Physics (Negotiated Learning)
- MSc Nanotechnology
- MSc NanoBio Science
- MSc Computational Physics
- MSc Applied Mathematics & Theoretical Physics

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