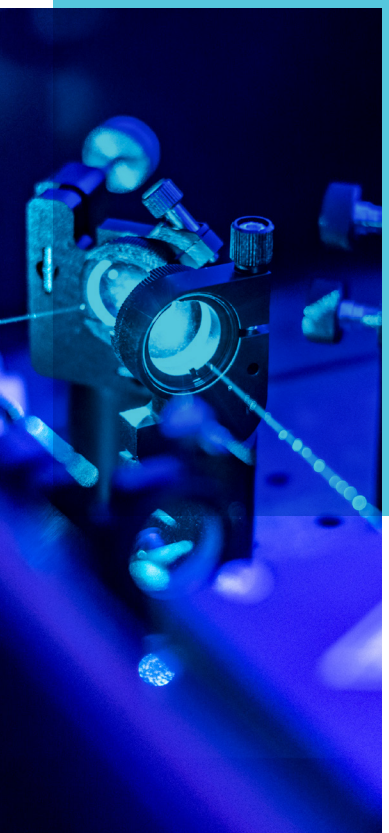
DCU
Ollscoil Chathair
Bhaile Átha Cliath
Dublin City University

INTRA Programme
BSc Physics with Astronomy

The Objective of this four-year, full-time degree is to produce graduates with a thorough understanding of physics and all the transferable skills associated with a physics degree and associated skills in IT and mathematics, combined with a good background in astronomy and astrophysics as a specialisation (ie a physics "major", astronomy "minor"). The courses taught within the degree programme provide the students with skills in the following areas:

- Computer programming and computational physics
- Image processing and analysis
- Signal acquisition instrumentation
- Optical instrumentation and photonics design, validation etc.
- Statistical analysis



Programme Outline

During the first two years, courses are provided in classical and modern physics as well as in mathematics, electronics and computing. From second year on, in addition to core physics modules students take courses in subjects such as instrumentation, optics, computing, mathematics, space science and technology, astronomy and astrophysics and have options to take further modules in advanced areas such as digital signal processing. There is a strong emphasis on developing practical laboratory skills and other generic, transferable skills such as report writing, oral presentation, group work and project planning skills throughout the course. An important element of Physics programmes at DCU is the emphasis placed on project work, report writing, oral presentations and laboratory skills throughout the four-year programme.

Work Areas

Students from the BSc Physics with Astronomy will have the ability to work in roles listed below:

- Manufacturing
- Optoelectronics
- Medical Physics
- Radiation Protection
- Energy Sources & Conservation
- Optical instrumentation/design
- Electronics n Information Technology
- Aerospace Engineering
- Meteorology
- Signal acquisition/processing
- Statistical analysis
- Telecommunications
- Software Engineering
- Environmental Monitoring
- Process Control and Instrumentation
- Image processing and analysis

Student Availability

Students are available for interview from early October onwards. For further information, please contact:

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Dublin City University, Glasnevin, Dublin 9, Ireland.
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in dcu-intra-office

INTRA (Integrated TRAining) Work placements

Students from the BSc Physics with Astronomy are eligible to participate in an eight month INTRA placement at the end of third year, from February to September inclusive, or alternatively February to May period to prepare for, execute, and then report on work performed during and after a field trip to a foreign observatory.

Year 1	Year 2	Year 3	Year 4
Introduction to Programming	Digital and Analogue Electronics I	INTRA (Physics)	Image Processing and Analysis
Inorganic and Physical Chemistry	Linear Mathematics	Introduction to Differential Equations	Mechanics
Calculus	Calculus of Several Variables	Quantum Physics II	Topics in Astrophysics
Motion and Energy	Quantum Physics I	Statistical Physics	Cosmology and Exoplanets
Light and Optics	Electromagnetism	Wave Optics	Electrodynamics
Electricity and Magnetism	Solid State Physics I	Astronomical Techniques	Applied Spectroscopy
Thermal and Physical Properties of matter	Relativity, Nuclear and Particle	Stellar Physics	Final Year Project
The Universe	Physics		Year 4 Optional Modules: Digital Signal Processing — Plasma Science and Technology — Materials Growth & Characterisation: — Semicond — Nonlinear Dynamics and Modeling for — Scientists — Uaneen Non-Contributing Module
Physics Laboratory I	Space Science and Technology		
Introduction to Computing	Vibrations and Waves		
	Laboratory General Physics		
	Year 2 Optional Module: — Advanced Programming — Programming		