

The Objective of this four-year, full-time degree is to produce graduates with a thorough understanding of physics, with an emphasis on modern technological applications, well-developed skills in modern laboratory techniques and the capacity to adapt to new developments. The courses taught within the degree programme provide substantial specialisation in the following areas:

- Computer programming, mathematics and computational physics
- Electronics and instrumentation
- Lasers, optics, spectroscopy and optoelectronics
- Semiconductor materials, physics, devices & technology

Programme Summary

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 modules students can choose from a suite of specialist areas including, for example, computational physics, sensors and digital signal processing. *There is a strong emphasis on developing practical laboratory skills*. Several final year Applied Physics students have received national awards from the Institute of Physics and the Instrument Society of America for their project work.

An important element of Applied Physics at DCU is the emphasis placed on project work, report writing, oral presentations and laboratory skills throughout the four-year programme.

Relevant Work Experience

DCU's work experience programme *INTRA* (INtegrated TRaining) is a central feature of education at DCU and an integral part of most undergraduate and some postgraduate degree programmes.

Students from the B.Sc. Applied Physics are eligible to participate in an eight month *INTRA* placement at the end of third year, from February to September inclusive.

Work Areas

Students from the B.Sc. Applied Physics will have the ability to work in the roles listed below:

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|--------------------------|-----------------------------|------------------------|
| ■ Manufacturing | ■ Semiconductor Fabrication | ■ Electronics |
| ■ Process Control | ■ Instrumentation | ■ Telecommunications |
| ■ Optoelectronics | ■ IT Support | ■ Software Engineering |
| ■ Medical Physics | ■ Environmental Monitoring | ■ Radiation Protection |
| ■ Meteorology | ■ Energy Sources | ■ Conservation |
| ■ Education and Training | ■ Laboratory Research | ■ Desk Research |

Student Availability

Students are available for interview from October onwards. Please post vacancies on the *INTRA* online website at www.intra.dcu.ie, or send details to:

INTRA Unit, Student Support & Development,
Dublin City University,
Glasnevin, Dublin 9, Ireland.

Phone: 00 353 1 700 5514

Fax: 00 353 1 700 5505

Website: www.intra.dcu.ie



B.Sc. Applied Physics

Year 1	Year 2	Year 3		Year 4
Physics Laboratory Physics 1 Introduction to Computing Inorganic & Physical Chemistry Mathematics for Physicists The Universe Thermal & Physical Properties of Matter Introduction to Programming Electricity & Magnetism	Quantum Physics Advanced Programming Calculus of Several Variables Digital & Analogue Electronics Linear Mathematics Vibrations & Waves Electromagnetism Physics of Renewable Energy Solid State Particles Laboratory General Physics Relativity, Nuclear & Particle Physics	Semester 1 Core Modules Quantum Physics II Physics Laboratory V Statistical Physics Wave Optics Optional Modules Introduction to Numerical Methods Semiconductor Physics 1 Stellar Physics	Semester 2 I N T R A	Core Modules Introduction to Differential Equats & Apps to Mechanics Quantum Electronics Electrodynamics Applied Spectroscopy Professional Development Final Year Project Optional Modules High Energy Astrophysics Biophotonics Advanced Biomaterials & Processing Techniques