



BSc (Hons)

in Physics with Computing



Are there minimum entry level requirements?

Candidates must have 6 passes; Maths OB3/HD3, English or Irish OD3/HD3, two higher C3 or better.

What points do I need to get?

2005
270

How do I apply?

You apply through the CAO system. The code for this course is WD132.

How do I find out more?

Contact your careers advisor or Waterford Institute of Technology for a copy of the prospectus on 051 302000.

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Did you know?

- Physics and computing play a crucial role in medical and health science. Cancer therapies, key-hole surgery, patient monitoring systems, X-rays, MRI and CT scans are all applications of physics.
- Physicists are actively involved in research aimed at better understanding and protecting our environment investigating alternative sources of energy, e.g. wind, solar and geothermal building models to determine tomorrow's weather and predicting the effects of global warming.
- Physics graduates are highly regarded in the computer software industry due to their advanced problem-solving skills.
- Physics and computing is a very productive combination. As an example, the Internet was developed by a physics graduate, Tim Berners-Lee, at CERN, the European Particle Physics Laboratory in Geneva.

Department of Computing, Mathematics and Physics

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Your Questions Answered

What is the BSc (Hons) in Physics with Computing?

This is a four-year honours degree programme, which in the first two years will introduce you to the broad areas of physics, computing and mathematics.

Why Physics with Computing?

Physics with computing is a very exciting combination. In the past 10 years developments in science & technology have resulted in virtually everyone carrying around an advanced computer with them - and using it virtually every day. This is of course the mobile phone and it contains more processing power than the computer that put people on the moon!

Computers are extensively used by physicists to model and predict the behaviour of many physical systems including planetary motion, satellite navigation, earthquakes and nano-scale devices.

What subjects will I study?

Year 1 & 2

- Classical Physics
- Modern Physics including Relativity, Quantum Physics and Astrophysics
- Electronics and Instrumentation
- Computer Architecture and Networks
- Mathematics

Year 3 & 4

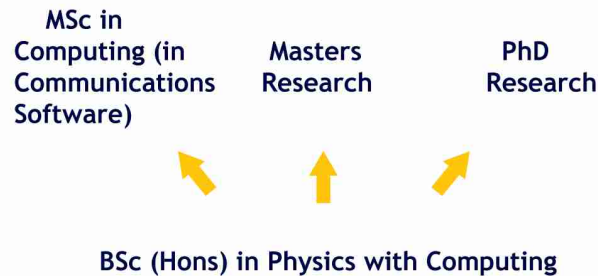
- Photonics, Laser and Optical Systems
- Semiconductor Device Technology
- Computational Physics
- Instrumentation and Measurement Systems
- Advanced Programming
- Networks and Telecommunications

Year 3 includes a 6-month work placement in industry and year 4 features a major research project. This will allow you to integrate various skills and knowledge acquired throughout the course.



What follow-on study opportunities are available?

A successful graduate can pursue a masters programme and a Phd programme



What career opportunities will I have?

Physics is an amazingly broad subject. As a physics student your studies will range from the very large (the universe) to the infinitesimally small (the elementary particles contained within the atom), from the very old (the creation of the universe with the big bang) to the most up to date developments in new technologies. Physics underpins all modern technology - iPods, mobile phones, DVD and satellite TV, and a host of other gadgets and devices.

During this course you will develop a range of transferable skills which are valued and much sought after by employers in both industry and research across a broad and diverse range of sectors.

What area could I expect to work in?

The combination of physics with computing will provide you with skills much sought after by both industry and research in a range of sectors including:

- Telecommunications/Photonics
- Semiconductors
- Medical Physics
- Biomedical Devices
- Teaching
- Meteorology
- Astronomy
- Software Development
- Advanced Manufacturing
- Information & Communications Technology