

# Physics Courses in Ireland 2019

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# What physics is about

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Physicists want to understand how the world works, in every detail and at the deepest level.

This includes everything from elementary particles to nuclei, atoms, molecules, macromolecules, living cells, solids, liquids, gases, plasmas, living organisms, the brain, complex systems, supercomputers, the atmosphere, planets, stars, galaxies and the universe itself.

In addition to the pursuit of knowledge, physicists study questions facing today's science and technology, and work at the forefront of solutions for instrumentation, measurement techniques and innovation in areas such as:

- Lasers and optics (laser materials, telecommunications)
- Medicine (medical imaging, radiation treatment, lasers)
- Space science (mission specialists, satellite design, astrophysics, telescopes)
- Environmental science (weather, oceanography, pollution control, meteorology)
- Electricity and magnetism (electronics, antenna design, instruments, semiconductors)
- Nuclear science (reactor design, waste management, medical applications)

## What you do in a physics degree

The topics listed opposite cover a broad area of knowledge, and no physics degree includes all of them. The particular flavour of a physics degree is determined by the emphasis given to different areas of physics (this varies between colleges), but all physics degrees have these core topics in common – the nature of matter and radiation, the laws governing their properties, and how they interact with each other. The additional elements of a physics degree include specialised knowledge in some areas of physics, and advanced scientific and engineering skills, which are useful for working in industry, business, education and research.



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See [iopireland.org](http://iopireland.org) for further careers information.

When trying to decide what to study at third level, probably the most important question to ask is “do you like the subject?”.

In a 2012 Institute of Physics in Ireland survey of first-year physics undergraduates, 83% said that they chose their degree because of their interest in the fundamental/big questions of physics, such as astronomy and particle physics, which are leading to some of the most impressive technology spin-offs, with rapid advances in computing, imaging, medicine and the environment.

In a 2010 Institute of Physics in Ireland survey of the previous five years of physics graduates, 13% were earning between €40,000 and €50,000.

The following course information and details on the universities and institutes of technology in Ireland were taken from the website [myphysicscourse.org](http://myphysicscourse.org) in August 2018. This website is updated regularly, so it is important to check the most recent information or visit the physics website of each university/institution.

The Institute of Physics in Ireland is not responsible for any incomplete or inaccurate information printed in this document.

# Degree listings

## Guide

The following pages list physics degree courses in Northern Ireland and Ireland.

### Degree

The course name, type and length of degree offered by each university/college are listed under the “degree” section. Unless stated otherwise, the degree courses are full-time programmes.

### Degree type

Degrees can be awarded with or without honours. Generally, a degree without honours, or an unclassified degree, is awarded if a student has completed a full degree course but has not met the minimum requirements to merit a third-class honours degree. However, the meaning of ordinary and honours degrees can vary between colleges. In Ireland, an ordinary degree is usually a three-year full-time course given at Level 7 on the National Qualifications Authority of Ireland framework, whereas an honours degree is usually a four-year full-time course given at Level 8 on the framework.

Degree			Entry requirements	
Course name	Type	Duration (years)	A-levels	Irish Leaving Certificate
Applied Physics and Instrumentation <sup>[2]</sup>	BSc (Hons)	4 <sup>[6]</sup>	CDD	350 POINTS <sup>[5]</sup>
Applied Physics and Instrumentation <sup>[2]</sup>	BSc/HC <sup>[3]</sup>	3 <sup>[1]</sup>	CDD	350 POINTS <sup>[5]</sup>
Instrument Engineering <sup>[2]</sup>	BSc (Hons)	4	CCC	365 POINTS <sup>[4]</sup>
Environmental Science and Sustainable Technology <sup>[2]</sup>	BSc (Hons)	4	CCC	400 POINTS <sup>[4]</sup>

<sup>[1]</sup> Duration is two years for Higher Certificate.

<sup>[2]</sup> Students have the option of a placement abroad in the third year for a minimum of eight weeks. It is also possible for the project in the fourth year to be carried out abroad.

<sup>[3]</sup> Students who successfully complete year two of the BSc may exit with a Higher Certificate.

<sup>[4]</sup> Last year's average points provided for guidance only. At least two subjects at grade C3 minimum (Higher-level) together with a further four subjects at grade D3 minimum (Ordinary- or Higher-level). The six subjects must include mathematics and either English or Irish. Admission is via [www.cao.ie](http://www.cao.ie).

<sup>[5]</sup> Last year's average points provided for guidance only. Grade D3 at Ordinary- or Higher-level in five subjects including mathematics and either English or Irish. Admission is via [www.cao.ie](http://www.cao.ie).

<sup>[6]</sup> Admission is dependent on successful completion of the three-year BSc Applied Physics and Instrumentation course with a minimum-award classification of Merit 2.

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## Entry requirements

Typical grade offers for A-level and Irish Leaving Certificate points required for entry are listed under “Entry requirements”. For information about alternative qualifications, please contact the university.

## Abbreviations

### Qualifications

<b>HLC</b>	Honours Leaving Certificate
<b>OLC</b>	Ordinary-Level Leaving Certificate
<b>A-level</b>	GCE Advanced-level (full A-level)
<b>AS</b>	GCE Advanced Subsidiary (first half of a full A-level)
<b>AH</b>	(Scottish) Advanced Highers
<b>SH</b>	Scottish Highers

If you are thinking of becoming a professional physicist, you may want to check if your degree is accredited by the Institute of Physics. Accredited IOP degrees give a solid grounding in all of the core areas of physics. If you complete such a degree, you will be eligible for professional awards such as Chartered Physicist. Check whether your degree is accredited at [myphysicscourse.org](http://myphysicscourse.org).

# Information about universities and colleges

The following pages provide further information about physics departments in Northern Ireland and Ireland, and the physics-related courses that they offer.



## Women in Physics: Project Juno

A university department can achieve one of three levels of Juno award if they take steps to be more inclusive and ensure equality of opportunity for staff and students. If a department has a Juno award, this is indicated at the top of the departmental entry\*.

**IOP Juno Supporter** departments have made a commitment to start meeting the Juno principles and looking at these issues within the department.

**IOP Juno Practitioner** departments are those that have been assessed as reaching a good level of gender awareness, according to the Juno principles.

**IOP Juno Champion** departments are those that have reached the highest level of inclusion and gender awareness, according to the Juno principles.

For more information about Project Juno, visit [iop.org/juno](http://iop.org/juno) or email [diversity@iop.org](mailto:diversity@iop.org).

\* Correct at time of going to press. Please see [iop.org/juno](http://iop.org/juno) for an up-to-date list of Juno departments.

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## University/college

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**IOP Juno Practitioner**

### School of Physics

Campus Building, University of Example  
University Road, Any Town, A1 1AA

### Teaching

All physics courses provide students with a detailed understanding of the principles...

### Further information:

Dr A Example  
Email [admissions@physics.university.ac.uk](mailto:admissions@physics.university.ac.uk)

Further details about what you will learn on the courses offered by the college.

Contact details for enquiries.

# Cork Institute of Technology

Degree			Entry requirements	
Course name	Type	Duration (years)	A-levels	Irish Leaving Certificate
Applied Physics and Instrumentation <sup>[2]</sup>	BSc (Hons)	4 <sup>[5]</sup>	CDD	280 POINTS <sup>[4]</sup>
Applied Physics and Instrumentation <sup>[2]</sup>	BSc/HC	3 <sup>[1]</sup>	CDD	280 POINTS <sup>[4]</sup>
Instrument Engineering <sup>[2]</sup>	BSc (Hons)	4	CCC	300 POINTS <sup>[3]</sup>
Environmental Science and Sustainable Technology <sup>[2]</sup>	BSc (Hons)	4	CCC	300 POINTS <sup>[3]</sup>
Industrial Physics (Joint UCC/CIT)	BSc (Hons)	4	–	Approx. 450 POINTS

<sup>[1]</sup> Duration is two years for Higher Certificate.  
<sup>[2]</sup> Students have the option of a placement abroad in the third year for a minimum of eight weeks. It is also possible for the project in the fourth year to be carried out abroad.  
<sup>[3]</sup> Last year's average points provided for guidance only. At least two subjects at grade C3 minimum (Higher-level) together with a further four subjects at grade D3 minimum (Ordinary- or Higher-level). The six subjects must include mathematics and either English or Irish. Admission is via [www.cao.ie](http://www.cao.ie).  
<sup>[4]</sup> Last year's average points provided for guidance only. Grade D3 at Ordinary- or Higher-level in five subjects including mathematics and either English or Irish. Admission is via [www.cao.ie](http://www.cao.ie).  
<sup>[5]</sup> Admission is dependent on successful completion of the three-year BSc Applied Physics and Instrumentation course, with a minimum award classification of Merit 2.

## Cork Institute of Technology

Department of Applied Physics and Instrumentation  
 Rossa Avenue, Bishopstown, Cork, Ireland  
 +353 21 433 5870

### Teaching:

Course lectures and laboratory classes are delivered within a modularised and semesterised framework. All courses feature a third-year placement in industry and a final-year project that may be based in industry or a research group. The department's courses are all based on a firm foundation of physical science and mathematics. These essential principles provide the basis for developing the knowledge, skills and competence needed for the specialist course applications.

### Special facilities/resources:

The departmental resources include specialist laboratories in instrumentation, automation, computing, applied physics, electronics and environmental instrumentation with a focus on applications in industry and society. Students have access to other specialist laboratories within the Institute. The department has strong links to other European universities. Major research interests include astronomy, nanotechnology and photonics.

### Special features of courses:

The BSc in Applied Physics and Instrumentation (three years full-time) and the BSc (Hons) in Applied Physics and Instrumentation (one-year full-time add-on to BSc) form a ladder structure that also includes a step-off award of Higher Certificate in Science in Applied Physics and Instrumentation after year two of the ladder. Step-off awards also exist in the BSc (Hons) in Instrument Engineering. Graduates from the BSc in Applied Physics and Instrumentation may also progress to the final year of the BSc (Hons) in Instrument Engineering.

### Progression:

Progression from the BSc to the BSc (Hons) requires a minimum overall average in the BSc of 50%. For all other stages, progression requires a minimum overall average of 40%.

### Postgraduate:

MSc and PhD by research opportunities exist within the department.

### Further information:

Dr Donagh O'Mahony  
 Donagh.OMahony@cit.ie  
 physics.cit.ie

# Dublin City University

Degree			Entry requirements	
Course name	Type	Duration (years)	A-levels	Irish Leaving Certificate
Applied Physics	BSc (Hons)	4	BCC <sup>[4]</sup>	423 POINTS <sup>[1]</sup>
Physics with Astronomy <sup>[2]</sup>	BSc (Hons)	4	BCC <sup>[4]</sup>	444 POINTS <sup>[1]</sup>
Physics with Biomedical Sciences	BSc (Hons)	4	BCC <sup>[5]</sup>	465 POINTS <sup>[1]</sup>
Science Education (Physics/Chemistry/Mathematics) <sup>[3]</sup>	BSc (Hons)	4	BCC <sup>[6]</sup>	444 POINTS <sup>[1]</sup>

<sup>[1]</sup> CAO Points in 2017 given as a guide. Places offered by Central Applications Office, Galway, on the basis of Irish Leaving Certificate results. Direct applications may be made through the Office for Academic Affairs at the university.

<sup>[2]</sup> Includes a field trip to a foreign observatory.

<sup>[3]</sup> Graduates will have a teacher qualification.

<sup>[4]</sup> Physics and mathematics and also a third subject from chemistry, biology or physical science.

<sup>[5]</sup> Must include mathematics and also a second subject in either physics, chemistry or biology.

<sup>[6]</sup> Must include mathematics and physics.

## IOP Juno Supporter

### Dublin City University

School of Physical Sciences  
Glasnevin, Dublin 9, Ireland  
+353 1 700 5297

### Teaching:

Four-year honours degree programmes containing a balanced blend of lectures, tutorials, modern laboratory sessions and industrial experience, which together provide the basic understanding and develop the analytical problem-solving and laboratory skills appropriate for modern scientists and engineers.

### Special facilities/resources:

Excellent teaching laboratories and specialist laboratories in photonics, high-power lasers, plasmas, semiconductors, surface science, nanomaterials, sensors and astronomy. Windows and high-end UNIX computer laboratories. Thin client system. High-speed wireless broadband throughout the physics school.

### Special features of courses:

Emphasis on laboratory-skills development; specialisms include: optoelectronics, semiconductors and computational physics; industry orientation programme including paid eight-month placement; undergraduate research placement; group and individual undergraduate research projects. The Physics with Astronomy degree includes a field trip to a foreign observatory.

### Undergraduate degrees:

BSc in Applied Physics, BSc in Physics with Astronomy, BSc in Physics with Biomedical Sciences, BSc Science Education (teaching qualification), BSc Environmental Science and Health.

### MSc in Plasma Science and Technology:

A part-time web-based taught masters programme aimed at scientists and engineers in the workplace.

### Postgraduate research opportunities – MSc and PhD degrees by research in:

Optical chemical sensors and biosensors, low-temperature and industrial plasmas, laser-matter interactions, atomic physics, condensed matter, surface and interface science, physics education, astronomy and astrophysics.

### Further information:

Dr Eamonn Cunningham  
Eamonn.Cunningham@dcu.ie  
dcu.ie/physics

# Dublin Institute of Technology

Degree			Entry requirements	
Course name	Type	Duration (years)	Irish Leaving Certificate	Irish Leaving Certificate
Physics Technology	BSc (Hons)	4	CCC <sup>[2]</sup>	330-360 POINTS <sup>[1]</sup>
Physics with Medical Physics and Bioengineering	BSc (Hons)	4	CCC <sup>[2]</sup>	320-350 POINTS <sup>[1]</sup>
Science with Nanotechnology	BSc (Hons)	4	CCC <sup>[2]</sup>	340-370 POINTS <sup>[1]</sup>
Industrial and Environmental Physics	BSc (Ord)	3	CDD <sup>[6]</sup>	200-300 POINTS <sup>[3]</sup>
Clinical Measurement Science	BSc (Hons)	3	–	450-490 POINTS <sup>[4]</sup>
Optometry	BSc (Hons)	3	–	490-520 POINTS <sup>[5]</sup>
Physics with Energy and Environment	BSc (Hons)	4	–	330-360 POINTS <sup>[1]</sup>

<sup>[1]</sup> Irish Leaving Certificate: must have either mathematics, physics, chemistry, biology or engineering (plus five other subjects). Places offered by Central Applications Office, Galway, on basis of Irish Leaving Certificate results. Mature applicants welcome.

<sup>[2]</sup> Must have either mathematics, physics, chemistry, biology or engineering.

<sup>[3]</sup> Irish Leaving Certificate: must have mathematics (plus four other subjects). Places offered by Central Applications Office, Galway, on basis of Irish Leaving Certificate results. Mature applicants welcome.

<sup>[4]</sup> C3 at Higher-level in two subjects, one of which must be: physics, chemistry, physics and chemistry, biology, mathematics, applied mathematics, agricultural science, engineering, or technology. A minimum grade of B3 in Ordinary-level mathematics and D3 Irish or English also required.

<sup>[5]</sup> Irish Leaving Certificate in six subjects with grade C3 or higher in at least three of physics, biology, chemistry, physics and chemistry (combined). Must also include mathematics and either English or Irish; at either B3 or better at Ordinary-level, or D3 or better at Higher-level.

<sup>[6]</sup> Must include mathematics.

## Dublin Institute of Technology

School of Physics

Kevin Street, Dublin 8, Ireland

+353 1 402 3304

### Teaching:

We offer four-year honours degree programmes in Physics Technology, Physics with Medical Physics and Bioengineering, Science with Nanotechnology, and Physics with Energy and Environment. We also offer an ordinary degree in Industrial and Environmental Physics. Physics in the first and second years is delivered through the medium of problem-based learning. The emphasis throughout is on applied and experimental aspects, with laboratory work and problem-solving highlighted.

### Special facilities/resources:

Mainframe DEC computer system, workstations, modern laboratories for optics, medical physics and clinical measurement science, instrumentation, computing and computational physics.

### Special features of courses:

Main topics are medical physics, nanotechnology, environmental physics, renewable energy, instrumentation and solid-state physics, computational physics, digital systems, sensors, optical and quantum technologies; options are medical-imaging

systems, optical communications, radiation and nuclear physics, microwaves, acoustics, materials spectroscopy, applied biophysics, statistical process control, holography and fluid dynamics. There is a major project in the final year. Professional development and key transferable skills, including modules on entrepreneurship, innovation, intellectual property and commercialisation are included in all of our programmes.

### Other programmes:

Ordinary-level degree in Industrial and Environmental Physics, with progression to honours degree; honours degrees in Physics Technology; Clinical Measurement Science (with one-year placement in third year); Physics with Medical Physics & Bioengineering; Science with Nanotechnology; and Optometry. Mature-student applications welcome. Funded postgraduate research opportunities.

### Regulation on transfer between courses:

Advanced entry welcomed. Credit/distinction graduates of ordinary degree may transfer to honours degree programme. Other applicants assessed individually.

### Further information:

Admissions Tutor  
frank.costello@dit.ie  
physics.dit.ie

# Galway-Mayo Institute of Technology

Degree			Entry requirements	
Course name	Type	Duration (years)	A-levels	Irish Leaving Certificate
Physics and Instrumentation (GA783)	BSc (Hons)	4	CCC	315 POINTS
Physics and Instrumentation (GA773)	BSc (Hons)	3	CDD	290 POINTS

## IOP Juno Supporter

### Galway-Mayo Institute of Technology

Department of Computer Science and Applied Physics  
Dublin Road, Galway, Ireland  
+353 91 742143

### Teaching content and philosophy:

The delivery of both programmes is focused on teaching applied physics and instrumentation through the how-and-why approach of a physicist. There is an emphasis on developing flexible thinking together with the ability to both synthesise and develop new ideas. A key feature is the balance between lectures, where theory is presented, and strongly linked lab sessions, where theory is put into practice and real understanding is further enhanced. This approach means that the graduate will be readily able to understand, use and adapt to both new and existing technologies. It also means that the graduate enjoys strong career opportunities in a wide range of areas (see sample placement destinations).

### Special facilities/resources:

Physics and Instrumentation students enjoy a suite of well-equipped labs/project rooms that they are also free to use outside of their scheduled class times. Fourth years have their own dedicated group learning room with adjoining project labs.

### Special features of course:

Project work is a strong feature throughout. This provides the student with the valuable opportunity to develop, pursue and exhibit their own particular interests through their project work. There is a project module in the second year, a team project in the third year and a major final year project in the fourth year (see web link below). Third year also features an extended student placement in industry (medical devices, instrumentation services–pharmaceutical/chemical sector, hospitals–health sector instrument systems, semiconductor device sector etc) or with a research group (marine research, laser applications, medical devices etc).

### Further information:

Dr Brian Ashall  
scienceoffice@gmit.ie  
gmit.ie/physics-and-instrumentation/bachelor-science-honours-physics-and-instrumentation

# Maynooth University

Degree			Entry requirements	
Course name	Type	Duration (years)	A-levels	Irish Leaving Certificate
Experimental Physics	BSc	4	DD <sup>[3]</sup>	360 POINTS <sup>[1]</sup>
Physics with Astrophysics	BSc	4	CC <sup>[3]</sup>	423 POINTS <sup>[1]</sup>
Experimental Physics and Chemistry	BSc	4	DD <sup>[3]</sup>	360 POINTS <sup>[1]</sup>
Experimental Physics and Mathematics	BSc	4	DD <sup>[3]</sup>	360 POINTS <sup>[1]</sup>
Experimental Physics and Biology	BSc	4	DD <sup>[3]</sup>	360 POINTS <sup>[1]</sup>
Experimental Physics and Computer Science	BSc	4	DD <sup>[3]</sup>	360 POINTS <sup>[1]</sup>
Experimental Physics and Mathematical Physics	BSc	4	DD <sup>[3]</sup>	360 POINTS <sup>[1]</sup>
Science Education	BSc	4 <sup>[2]</sup>	CC <sup>[3]</sup>	441 POINTS <sup>[1]</sup>

<sup>[1]</sup> These are last year's points and a guideline only. Students require six subjects at Ordinary- or Higher-level, including at least two HC3. Irish, English, mathematics and a science subject are required.

<sup>[2]</sup> To qualify to teach, students must progress into year five, which will be a Professional Master of Education (PME).

<sup>[3]</sup> Including physics and mathematics.

## IOP Juno Supporter

### Maynooth University

Department of Experimental Physics  
Maynooth University, Maynooth, Co. Kildare, Ireland  
+353 1 708 3641

#### Teaching:

Lectures, laboratory classes, problem-solving tutorials. Students are introduced to a broad range of topics, including astronomy. Honours class sizes are small, and individual and group projects are offered to students in their final year. Computational physics and interfacing to PCs are emphasised in the laboratory curriculum.

#### Special facilities/resources:

The department is well stocked with a broad range of modern equipment in new and purpose-built undergraduate and postgraduate laboratories, opened in the summer of 1998. Honours students at third and fourth level have their own group rooms with full computer and study facilities.

#### Special features of courses:

The programme offers single honours in Experimental Physics and in Physics with Astrophysics, as well as combined honours in Experimental and Mathematical Physics (or in combination with biology, chemistry, computer science and mathematics). The department has a policy of special emphasis on individual attention at all levels, to help the student attain his/her full potential.

#### Further information:

Professor J Anthony Murphy  
physics.department@mu.ie  
maynoothuniversity.ie/experimental-physics

# National University of Ireland Galway

Degree			Entry requirements	
Course name	Type	Duration (years)	A-levels	Irish Leaving Certificate
Physics and Applied Physics (GY320) <sup>[2]</sup>	BSc (Hons)	4	A*AB <sup>[1]</sup>	452 POINTS <sup>[1]</sup>
Physics with Biomedical Physics (GY320) <sup>[2]</sup>	BSc (Hons)	4	A*AB <sup>[1]</sup>	452 POINTS <sup>[1]</sup>
Physics with Astrophysics (GY320) <sup>[2]</sup>	BSc (Hons)	4	A*AB <sup>[1]</sup>	452 POINTS <sup>[1]</sup>
Physics with Theoretical Physics (GY320) <sup>[2]</sup>	BSc (Hons)	4	A*AB <sup>[1]</sup>	452 POINTS <sup>[1]</sup>
BSc Science (Undenominated) (GY301)	BSc (Hons)	4	ABB <sup>[1]</sup>	400 POINTS <sup>[1]</sup>

<sup>[1]</sup> Including mathematics at GCSE-level. Places offered by Irish Central Applications Office (CAO), 2017 requirements given as a guide.

<sup>[2]</sup> The degree GY320 Physics with Options in Applied Physics, Astrophysics, Biomedical Physics and Theoretical Physics.

There is a common first year, and students begin to specialise in the second year, with a final choice between the four streams taken in the third year.

## IOP Juno Practitioner

### National University of Ireland Galway

School of Physics

University Road, Galway, Ireland

+353 91 492490

#### General information:

Accredited degree courses on offer in the School of Physics encompass the study of the universe from the largest galaxies to the smallest subatomic particles, and include topics ranging from the atmosphere and environment to medical physics. However, the importance of physics isn't limited to the hard sciences. Increasingly, physicists are turning their talents to diverse fields such as molecular biology, archaeology, medicine, the arts and even the world of finance. In Galway, we have a strong tradition of providing hands-on degrees in physics, and our graduates are much in demand.

Teaching in the School of Physics is strongly influenced by programmes of advanced research and graduate education. These programmes are based on our research clusters: Photonics (Applied Optics, Laser Applications and Biophotonics); Atmospheric and Environmental Physics; and the Centre for Astronomy.

Our Denominated Physics programme (GY320) allows students to study core physics, but also specialist options in applied physics, astrophysics, biomedical physics and theoretical physics. Alternatively, you may enter via the Science programme (GY301).

#### Further information:

Rebecca Nolan

rebecca.nolan@nuigalway.ie

nuigalway.ie/physics

# Queen's University Belfast

Degree			Entry requirements	
Course name	Type	Duration (years)	A-levels	Irish Leaving Certificate
Physics	BSc (Hons)	3	ABB <sup>[1]</sup>	H3H3H3H3H4H4 <sup>[1]</sup>
Physics	MSci	4	AAB <sup>[2]</sup>	H2H3H3H3H3H3 <sup>[2]</sup>
Applied Mathematics and Physics	BSc (Hons)	3	ABB <sup>[1]</sup>	H2H3H3H3H3 <sup>[1]</sup>
Applied Mathematics and Physics	MSci	4	AAA <sup>[2]</sup>	H2H2H3H3H3H3 <sup>[2]</sup>
Physics with Astrophysics	BSc (Hons)	3	BBB <sup>[1]</sup>	H3H3H3H3H4H4 <sup>[1]</sup>
Physics with Astrophysics	MSci	4	AAB <sup>[2]</sup>	H2H3H3H3H3H3 <sup>[2]</sup>
Theoretical Physics	BSc (Hons)	3	ABB <sup>[1]</sup>	H2H3H3H3H3 <sup>[1]</sup>
Theoretical Physics	MSci	4	AAA <sup>[2]</sup>	H2H2H3H3H3H3 <sup>[2]</sup>
Physics with Medical Applications	BSc (Hons)	3	BBB <sup>[1]</sup>	H3H3H3H3H4H4 <sup>[1]</sup>
Physics with Medical Applications	MSci	4	AAB <sup>[2]</sup>	H2H3H3H3H3H3 <sup>[2]</sup>
Physics with Extended Studies in Europe	BSc (Hons)	4 <sup>[3]</sup>	BBB <sup>[1]</sup>	H3H3H3H3H4H4 <sup>[1]</sup>
Physics with Extended Studies in Europe	MSci	5 <sup>[3]</sup>	AAB <sup>[2]</sup>	H2H3H3H3H3H3 <sup>[2]</sup>

<sup>[1]</sup> BSc courses require mathematics and physics at A-level or Irish Leaving Certificate H3. Apart from Applied Mathematics and Physics and Theoretical Physics, which require an A at A-level mathematics and a B in physics or a H2 in mathematics and a H3 in physics.

<sup>[2]</sup> MSci courses require: A-level AAB or Irish Leaving Certificate H2H3H3H3H3H3 including Higher-grade H2 and H3 in any order in mathematics and physics. With the exception of Applied Mathematics and Physics and Theoretical Physics: AAA including mathematics and physics or A\* (mathematics) AB including physics or Irish Leaving Certificate H2H2H3H3H3H3 including Higher-level grade H2 in mathematics and physics.

<sup>[3]</sup> Includes a year in Europe.

## IOP Juno Champion

### Queen's University Belfast

School of Mathematics and Physics  
University Road, Belfast, BT7 1NN, Northern Ireland  
+44 02890 973941

### Teaching content and philosophy:

Students may choose from a range of degree courses designed to meet the skills and scholarship needs, and to facilitate the career aspirations of most physics graduates. Our courses also exploit the academic strengths and skills of staff across the breadth of the School of Mathematics and Physics. Computing and transferable skills are taught as integral components of all physics courses and are also available as specialist options. Teaching methods comprise lectures, laboratories, tutorials and problem/analysis classes. These initially provide a broad introduction to fundamental aspects of physics and subsequently, in final years, facilitate a critical and in-depth study of many of its modern developments.

### Further information:

Dr Tom Field/Admissions Co-ordinator, physics@qub.ac.uk, qub.ac.uk/mp.

### Special facilities/resources:

Our new Teaching Centre for Physics and Mathematics opened in September 2016, containing £1.7 m of experimental equipment plus extensive PC facilities for physics students. Where possible, final-year students are assigned to join one of our active research groups to perfect their laboratory skills and taste the flavour of postgraduate work. For relaxation, students have a choice of superb local sporting facilities, or they may indulge themselves in the vibrant university environment of theatres, pubs and bistros. 70% of first-year students (including all students from outside the Belfast area) are accommodated in Halls.

### Special features of courses:

Students are taught in small groups and special student needs are therefore more easily identified and readily catered for. In addition to defined core material, specialist options are available that reflect the extensive research interests of the department.

### Regulation on transfer between courses:

The modular structure allows students to leave decisions on degree options until the end of year one. In-course transfer between BSc and MSci degree courses is possible, if other attendant conditions are met. Entry is to the School of Mathematics and Physics and is into level 1 for a three-year BSc (Hons) or a four-year MSci (Hons) degree.

# Trinity College Dublin

Degree			Entry requirements	
Course name	Type	Duration (years)	A-levels	Irish Leaving Certificate
Physics Visit <a href="http://www.tcd.ie/Physics/study/prospective/undergraduate/">www.tcd.ie/Physics/study/prospective/undergraduate/</a>	BA (Hons)	4	– <sup>[1]</sup>	505 POINTS <sup>[3]</sup>
Theoretical Physics Visit <a href="http://www.tcd.ie/Physics/study/prospective/undergraduate/">www.tcd.ie/Physics/study/prospective/undergraduate/</a>	BA (Hons)	4	– <sup>[1]</sup>	555 POINTS <sup>[3]</sup>
Nanoscience, Physics and Chemistry of Advanced Materials Visit <a href="http://www.tcd.ie/Physics/study/prospective/undergraduate/">www.tcd.ie/Physics/study/prospective/undergraduate/</a>	BA (Hons)	4	– <sup>[1]</sup>	505 POINTS <sup>[2]</sup>
Physics and Astrophysics Visit <a href="http://www.tcd.ie/Physics/study/prospective/undergraduate/">www.tcd.ie/Physics/study/prospective/undergraduate/</a>	BA (Hons)	4	– <sup>[1]</sup>	505 POINTS <sup>[2]</sup>

<sup>[1]</sup> Offers are made based on the points required, as set by the Irish Central Admissions Office (CAO) in each year. Up to four subjects at A2- or AS-level may be counted. The points awarded are: A2-level grade A\*:180, A:150, B:130, C:100, D:65 for the applicants best three A-levels.  
The points required for each course are given above as a guide only. Including grade C in two science subjects at higher level or higher (refers to Irish Leaving Certificate only).

<sup>[2]</sup> Including grade C in two science subjects at Higher-level or higher (refers to Irish Leaving Certificate only). Not all applicants at this level were offered places.

<sup>[3]</sup> Including grade B in both mathematics and physics at Higher-level or higher (refers to Irish Leaving Certificate only).

## IOP Juno Practitioner

### Trinity College Dublin

School of Physics  
Dublin 2, Ireland  
+353 1 896 1675

### Teaching content and philosophy:

The school offers four-year courses leading to degrees in Physics, Physics and Astrophysics, Theoretical Physics, and Nanoscience, Physics and Chemistry of Advanced Materials. Structured teaching through lectures, tutorials and laboratory and project work provides a firm grounding in all branches of physics, and brings students into contact with the forefront of international research as practised in the school. About 70 students graduate each year from the school.

### Special facilities/resources:

Large and active research groups in areas that include surface and interface physics, magnetic materials, molecular electronics, lasers and optoelectronics, foam physics, environmental radiation, nanotechnology, astrophysics, and computational and theoretical physics. The school is closely integrated with an adjoining centre for nanoscience (opened in 2007). It is at a historic city-centre campus that provides a wide range of student facilities.

### Special features of courses:

Entry to the School of Physics is via TR035 Theoretical Physics, TR071 Science (Physics or Physics and Astrophysics), TR076 Nanoscience, Physics and Chemistry of Advanced Materials degree courses. The first two years of TR035 are 1/3 Physics and 2/3 Mathematics. The first two years of TR071 consist of a combination of Physics, Mathematics and another science (typically Chemistry or Geology). The first two years of TR076 are a combination of Physics, Chemistry and Mathematics. The last two years of each degree course allow specialisation in that area. All students undertake a research project in the final year. Some projects are carried out outside of Ireland (but not TR035 projects). College scholarships are available.

### Regulation on transfer between courses:

Flexible between all courses in the first two years (exception: no transfers are allowed into Theoretical Physics) – college tutors give advice.

### Further information:

School Administrator  
[physics@tcd.ie](mailto:physics@tcd.ie)  
[physics.tcd.ie](http://physics.tcd.ie)

# University College Cork

Degree			Entry requirements	
Course name	Type	Duration (years)	A-levels	Irish Leaving Certificate
Physics <sup>[1]</sup>	BSc (Hons)	4	– <sup>[2]</sup>	500+ POINTS <sup>[2]</sup>
Astrophysics <sup>[1]</sup>	BSc (Hons)	4	– <sup>[2]</sup>	500+ POINTS <sup>[2]</sup>
Mathematics and Physics <sup>[1]</sup>	BSc (Hons)	4	– <sup>[2]</sup>	500+ POINTS <sup>[2]</sup>
Physics and Applied Mathematics <sup>[1]</sup>	BSc (Hons)	4	– <sup>[2]</sup>	500+ POINTS <sup>[2]</sup>
Chemical Physics <sup>[1]</sup>	BSc (Hons)	4	– <sup>[2]</sup>	500+ POINTS <sup>[2]</sup>
Education in Physical Sciences	BSc (Hons)	4	– <sup>[2]</sup>	500+ POINTS <sup>[2]</sup>
BSc in Industrial Physics	BSc (Hons)	4	– <sup>[2]</sup>	425+ POINTS <sup>[2]</sup>

<sup>[1]</sup> 20–30 students study physics in each of the second, third and fourth years. Programmes are equivalent to a UK MSci. Course fees are not charged to EU students.  
<sup>[2]</sup> Students are selected through the CAO system, [www.cao.ie](http://www.cao.ie). Mathematics is a required subject.

## University College Cork

Department of Physics  
 Kane Building, College Road, Cork, Ireland  
 +353 21 490 2468

### Teaching content and philosophy:

Courses are taught through lectures and laboratory classes supplemented by tutorials, problem-solving sessions and seminars. Laboratory classes vary from classic experiments, through electronics and computer interfacing, to open-ended research projects. Fourth-year students do a 2–4-month research project in one of the research groups associated with the department. Competitive opportunities for research-related work experience are available in the summer following the second and third years.

### Special facilities/resources:

A major photonics and nanoelectronics research centre (Tyndall National Institute, [www.tyndall.ie](http://www.tyndall.ie)) is closely affiliated to the department and several physics academics are research-group leaders in Tyndall. The major research groups in the department are: laser spectroscopy, observational astrophysics, optoelectronics and nonlinear optics, photonics, plasma-fusion studies, quantum optics, and solid-state and electronic-structure theory. See [www.physics.ucc.ie](http://www.physics.ucc.ie) for details.

### Special features of courses:

A strong emphasis on fundamental physics at the beginning of the BSc degree programme ensures a secure foundation for modern physics later on. Physics majors may choose from a wide range of subsidiary subjects including pure or applied mathematics and computer science. Course fees are not charged to EU students.

### Regulation on transfer between courses:

See [www.ucc.ie](http://www.ucc.ie).

### Further information:

Professor John McInerney, Head of Department  
[physics@ucc.ie](mailto:physics@ucc.ie)  
[physics.ucc.ie](http://physics.ucc.ie)

# University College Dublin

Degree			Entry requirements	
Course name	Type	Duration (years)	A-levels	Irish Leaving Certificate
Physics	BSc (Hons)	4	A*A*A* <sup>[1]</sup>	505 POINTS <sup>[2]</sup>
Theoretical Physics	BSc (Hons)	4	A*A*A* <sup>[1]</sup>	505 POINTS <sup>[2]</sup>
Physics with Astronomy and Space Science	BSc (Hons)	4	A*A*A* <sup>[1]</sup>	505 POINTS <sup>[2]</sup>
Physics and Science/Mathematics subject	BSc (Jt Hons)	4	A*A*A* <sup>[1]</sup>	505 POINTS <sup>[2]</sup>

<sup>[1]</sup> GCSE-level grade B or above in mathematics, GCSE-level grade B or above in a laboratory-science subject (or applied mathematics or, from 2014, geography), and passes (GCSE-level grade C/A-level grade E or above) in English and three other recognised subjects are required.

<sup>[2]</sup> Places offered by Central Applications Office, Galway, on the basis of Irish Leaving Certificate results. Irish, English, mathematics (HD3/OB3) and a laboratory-science subject (HD3/OB3), where laboratory science, is agricultural science, biology, chemistry, physics and chemistry, physics, applied mathematics or geography.

## IOP Juno Supporter

### University College Dublin

School of Physics  
Belfield, Stillorgan Road, Dublin 4, Ireland  
+353 1 716 2210

#### Teaching content and philosophy:

Students wishing to pursue degrees in Physics, Physics with Astronomy and Space Science or Theoretical Physics should apply through CAO course DN200MPG. UCD Science provides a flexibility of choice in first-year subjects to include physics, mathematics and applied and computational mathematics. A minimum of 10 science modules must be taken at stage 1, allowing students to tailor their study plans to focus on physics or to sample more widely to explore their interests. Before commencing year 3, all physics students take a range of modules that are designed to provide a good foundation in the basic concepts and principles of physics, and the mathematics competency required to support their physics. There are specialised modules for Physics with Astronomy and Space Science and Theoretical Physics degree programmes.

#### Special facilities/resources:

Active research groups in astrophysics, space science, atomic and molecular physics, nanobiophysics, condensed-matter theory, radiation and medical physics, and particle physics. The school is part of a large campus with an expanding student village and excellent sports facilities. UCD Science recognises that students need support that extends beyond their academic needs, and a wide range of support services is provided. The School of Physics is a JUNO supporter.

#### Special features of courses:

In line with the UCD Horizons structure, students have a free choice of two modules from across the university in all years (except in year 4).

#### Regulation on transfer between courses:

No formal regulations, individual cases considered by heads of schools.

#### Further information:

The Secretary, UCD School of Physics  
bairbre.a.fox@ucd.ie  
ucd.ie/physics

# University of Limerick

Degree			Entry requirements	
Course name	Type	Duration (years)	A-levels	Irish Leaving Certificate
Physics (Common entry)	BSc	4	CE <sup>[1]</sup>	467 POINTS <sup>[2]</sup>

<sup>[1]</sup> To include a C in mathematics and a C in either applied mathematics or physics. In addition, four C grades at GCSE-level are required, which must include English and another language.  
<sup>[2]</sup> Refers to the 2017 entry points for BSc in Applied Physics.

## IOP Juno Supporter

### University of Limerick

Physics and Energy

University of Limerick, Castletroy, Limerick, Ireland

+353 61 202371

#### About you:

Are you the type of person who enjoys understanding the details of how current technologies work? Would you like to use this understanding to develop new technologies and applications? Do you want to have flexibility in choosing your career? If so, this programme might suit you.

#### Why study physics at the University of Limerick?

Applied Physics seeks to develop new technologies and practical applications through the use and improvement of our understanding of physical systems. Indeed, there are entire industries that have grown out of developments in areas of Applied Physics, such as semiconductor device physics, optics, laser physics, nuclear physics and medical physics. In addition to its importance to technology and industry, physics plays a fundamental role in affecting the attitudes and behaviour of society. The exploration of the solar system by manned and unmanned spacecraft and the discoveries made by advanced observatories such as the Hubble Space Telescope have greatly extended our understanding of the universe and our relation to it. Developments in modern physics have fundamentally changed the concepts of space, time, matter, cause and effect.

The BSc in Applied Physics degree programme recognises the importance of physics to many areas of modern industry and its impact on society. The course will provide you with a strong foundation in the fundamental principles of physics, together with an emphasis on the application of these principles to problems in industry and the real world. This programme ensures that graduates of the programme are uniquely qualified to contribute to the continued industrial, economic and social development of Ireland, while at the same time enjoying interesting careers.

#### Course structure:

The programme is four years in duration. The first two years provide you with a strong foundation in physics, chemistry, electronics, computing, and mathematics.

The third and fourth years of study provide core material in the following areas:

- Quantum mechanics
- Semiconductors
- Nanotechnology
- Optoelectronics
- Medical physics

An important element of the final year is an applied physics project, which gives you the opportunity to study a problem in depth. During the spring semester and summer of the third year, a period of co-operative education gives you experience of the application of physics in an industrial environment.

#### Further information:

Dr Ian Clancy  
ian.clancy@ul.ie  
physics.ul.ie

# Waterford Institute of Technology

Degree			Entry requirements	
Course name	Type	Duration (years)	A-levels	Irish Leaving Certificate
Physics for Modern Technology	BSc (Hons)	4	– <sup>[1]</sup>	333–460 POINTS <sup>[2]</sup>
<sup>[1]</sup> Including mathematics. Please consult admissions tutor for specific entry requirements.				
<sup>[2]</sup> Including mathematics O6/H7. Places offered by Central Applications Office, Galway, on the basis of Irish Leaving Certificate results. 2017 minimum-entry points are given as a guide.				

## Waterford Institute of Technology

Department of Computing, Mathematics and Physics  
Main Campus Cork Rd, Waterford, Ireland  
+353 51 30 2000

### Teaching content and philosophy:

The BSc (Hons) in Physics for Modern Technology is a four-year honours degree course offered by the Department of Science, which includes a six-month work placement in industry. This is an interdisciplinary course, which provides students with an understanding of the physics underlying a range of modern technologies such as semiconductors, optics/photonics, alternative energy, and sensor systems. It is designed to provide students with strong and complementary skills in the areas of physics, engineering, mathematics and programming. A strong emphasis is placed on the professional development of the student throughout the course, enabling the student to develop key transferable skills including independent thinking, analytical and design skills, problem-solving and communication skills. The course contains a balanced blend of lectures, laboratory classes, project work, group work and independent study.

### Special facilities/resources:

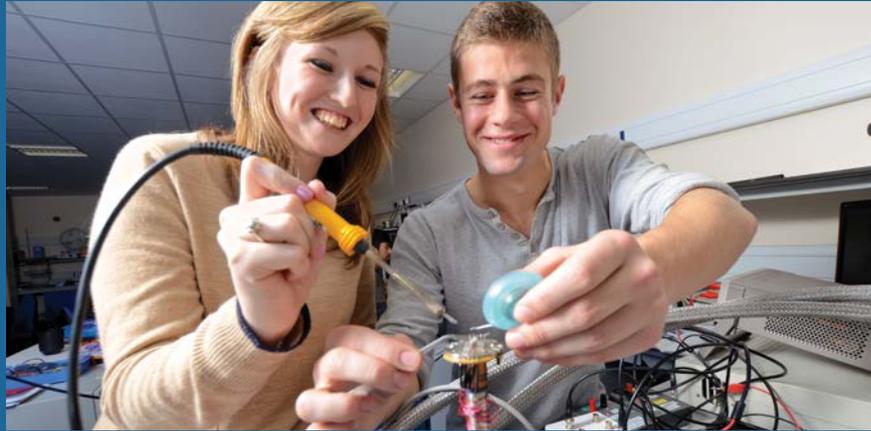
The school resources include a range of modern purpose-built undergraduate physics, instrumentation, optics and computing laboratories. Students also have access to specialist laboratories in other schools within the institute. Fourth-year students have a dedicated project laboratory with study facilities. Active research groups in the following areas contribute to teaching and project work on this course: optics/ photonics, nanotechnology, convergent technologies, materials characterisation, and automotive control.

### Special features of course:

In the third year, students undertake a work placement in industry (or in a research group). The placement allows the student to develop valuable professional skills within an organisation, eg working as part of a team, having responsibility for various tasks, and meeting deadlines (see [www.wit.ie/physics](http://www.wit.ie/physics) for more information). Electives in the fourth year allow the student to specialise in an area of interest to them. Students undertake an individual research project in the final year and write a dissertation.

### Further information:

Dr Claire Keary  
[ckeary@wit.ie](mailto:ckeary@wit.ie)  
[wit.ie/physics](http://wit.ie/physics)



The website **myphysicscourse.org** is your indispensable guide to physics degrees. Not only does the site list all IOP-accredited courses, but it also allows you to compare courses by:

- University
- Subject combination
- Entry grades
- Location

For everything from physics with mathematics to physics with music, across the UK and Ireland, visit **myphysicscourse.org**.

**Institute of Physics in Ireland**

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**[myphysicscourse.org](http://myphysicscourse.org)**