Welcome to the Department of Physics at the University of Warwick.

Physics is a practical subject full of beautiful ideas. If you study physics as an undergraduate, you will be exploring deep questions about the nature of the Universe and developing many useful skills.

This booklet should give you a feeling for what studying with us is like. We look forward to hearing from you and answering any further questions you may have about our courses and the University.

Neil Wilson
Head of Undergraduate Admissions
HONOURS DEGREE COURSES OFFERED by the Department of Physics

PHYSICS
F300 (BSc) and F303 (MPhys)

PHYSICS WITH ASTROPHYSICS
F3F5 (BSc) and F3FA (MPhys)

MATHEMATICS AND PHYSICS
GF13 (BSc) and FG31 (MMathPhys)

PHYSICS WITH BUSINESS STUDIES FN31 (BSc)

Mathematics and Physics and Physics with Business Studies are taught jointly with the Department of Mathematics and the Warwick Business School respectively.
IDEAS
and skills

Physics is about ideas and skills. An important idea is that systems can be understood by identifying a few fundamental quantities, such as energy and momentum, and the universal principles governing them.

One of the joys of physics is seeing how a simple principle, established after studying one problem, can go on to explain seemingly unrelated phenomena. For example, the laws of thermodynamics were discovered in the 19th century by people trying to design better steam engines. They turned out to apply to everything in the Universe from the Big Bang onwards. Einstein himself is quoted as saying that thermodynamics “is the only theory of universal content which I am convinced ... will never be overthrown”.

Physics teaches us ways of thinking about and tackling problems. This is just as true when studying the laws governing interactions between individual particles, as it is when studying the implication of these laws for complicated systems made up of many particles. In all cases, the process involves making measurements, trying to solve models of what might be happening, and, hopefully, celebrating when a coherent picture emerges.

Studying physics gives an excellent preparation for many different careers. Our graduates work in nearly all parts of the public and private sectors including IT, finance, journalism, and management. Some of our graduates also go on to postgraduate study in physics, usually working towards the research degree of PhD.

www.warwick.ac.uk/physics
The courses are built around a flexible curriculum, which, particularly after the first year, allows you to choose a sizeable proportion of your modules from lists of options. You might choose to concentrate on particular areas in physics (and mathematics if you are on the joint course) or try to keep your studies as broad as possible. The need to make choices about which modules to take will encourage you to think about physics in the context of science as a whole, and to develop your own ideas about the relative importance of the various strands within the discipline.

Optional modules are largely concerned with seeing how the basic concepts can explain the phenomena we observe. Examples include the light emitted and absorbed by stellar matter, and the response of the liquids, solids and gases, which we meet on a daily basis, to the mechanical, electrical and thermal forces acting on them.

As a physics graduate, you should be a practical person. The laboratory work in the course helps you to develop important experimental skills and goes together with other more general skills training in computing, communication and problem solving.

A feature of Warwick is that Departments keep many of their modules open to students from other disciplines. You can opt to take modules in related sciences including mathematics, computing and statistics, or from outside of science altogether. There are modules in business studies, modern languages, philosophy, and other areas.

Physics Degree
The structure of the course reflects the structure of the subject. You will take core lecture modules (concentrated mainly in the first two years), which introduce and develop the fundamental concepts, such as those of quantum theory and electromagnetism, and cover the mathematics used in physics.
"One of the things that I was most looking forward to about studying at Warwick was being part of a serious community of physicists - feeling like I was surrounded by people as keen to learn as I was."

MPhys graduate 2018
Energy Consultant, Arup
TEACHING

We provide a supportive and friendly environment in which to study. You will learn not just from the lectures and laboratories but also from interacting with others on the course, research students and your friends from outside physics.

Lectures

Lectures are an effective way of presenting information to a large group of students. The 50-minute lectures introduce the material, which you then study further on your own. The core modules in the first year are supported by weekly classes, at which you and your fellow students meet in small groups with a member of the research staff or a postgraduate student. These classes have two main purposes: to discuss any problems of understanding, which arise from the lectures, and to go through any written work associated with the module. They also provide an important indirect route back to the lecturer for your comments about the lectures.

Laboratories

The laboratory modules teach the essential skills of experimental physics. In broad terms every scientist needs to know how to carry out an investigation, assess its significance and report the results clearly and concisely. As well as developing the techniques of experimental physics, time spent in the laboratory helps illustrate the theoretical aspects of the subject presented in the lectures.

Projects

In your final year, you will work on a research-style project. This is often a very satisfying part of the degree course. It gives you the opportunity to develop your own ideas in a particular field of interest. Usually you will work in a pair, within one of our research groups and alongside postgraduate students and other members of staff. Sometimes the project work can involve interacting with people from other disciplines or from industry.
**Personal Tutor**

Your personal tutor will be an important contact with the academic staff in the Department. During the first two years, you will meet your personal tutor at weekly tutorials in the first two terms to discuss coursework and to reflect on your studies and planning for future years. Normally your tutor would also be the first person to see about any problem. In the case of more serious worries, your personal tutor will direct you to the University’s Dean of Students, who runs a team of professional counsellors and the student support services.

**Assessment**

Your performance is assessed on the basis of written examinations and coursework. In any year about 30% of the overall mark is assigned to coursework. Coursework components of a degree course include problems set in association with lecture modules, laboratory and computational projects, and modules assessed on the basis of one or more reports.

**Feedback**

Our staff and student representatives meet regularly on a Staff Student Liaison Committee (SSLC) to discuss any changes and improvements, which can be made to the teaching.
The Physics COMMUNITY

Apart from teaching, the University’s main role is to carry out research.

Warwick is consistently ranked amongst the top universities for research in the UK and the Department of Physics is itself rated highly in the Research Excellence Framework 2014.

The interaction with the research community within the Department brings you into contact with the latest innovations and ideas and is particularly valuable in your final year when you carry out project work.

The Department of Physics has a number of areas of research excellence including: astronomy, the physics of condensed matter, elementary particle physics, plasma physics and theoretical physics.

The other departments which teach physics-based undergraduates – Mathematics, Statistics and WBS (Warwick Business School) – have all been rated highly for their research.
“Since childhood I had always maintained an interest in energy and electricity, and this was piqued both by the excellent Second Year Module on the Physics of Electrical Power Generation at Warwick and through reading Sustainable Energy without Hot Air.

I now work as a staff scientist at Japan Atomic Energy Agency on various radiation and environmental analyses related to the recovery from the 2011 Fukushima Daiichi meltdowns.”

Alex Malins
Staff Scientist, Japan Atomic Energy Agency
BSc Maths and Physics graduate 2007
FIND OUT MORE

HOW TO APPLY
Applications are made through UCAS ucas.com

If you are made and accept an offer, and obtain the required grades in your exams we will confirm your place. We will look forward to welcoming you at the start of your life here at Warwick.

warwick.ac.uk/study/undergraduate/apply

OVERSEAS APPLICANTS
We welcome applications from international students. Local advice about the application procedure is available from all British Council offices and Warwick representatives.

warwick.ac.uk/study/international

STUDENT FEES AND FUNDING
We want to ensure that, wherever possible, financial circumstances do not become a barrier to studying at Warwick and therefore we provide extra financial support for qualifying students from lower income families. For more information about fees and funding for both home/EU and Overseas students see warwick.ac.uk/study/undergraduate/studentfunding

VISIT US
The university organise four open days in early summer and in autumn for students wishing to visit the university, including opportunities to visit the academic departments of your choice warwick.ac.uk/opendays

If you receive an offer from us, you will also be invited to one of our Offer Holder Days giving you a chance to learn more about the course and student life in the Department of Physics.

ACCOMMODATION
Warwick Accommodation has over 6000 rooms across a range of well-managed, self-catering residences. We also have an excellent network of support staff in the Residential Life Team.

warwick.ac.uk/accommodation

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This course information was accurate at the time of printing. Our course and module content and schedule is continually reviewed and updated to reflect the latest research expertise at Warwick, so it is therefore very important that you check the website for the latest information before you apply and when you accept an offer.