

## Year in industry.

If you do a Year in Industry course, you spend a year between level two and level three on a work placement. You can apply your physics knowledge in a scientific organisation, or apply the transferable skills from your degree to a role outside science.

You'll pay reduced fees for the year you're on placement, and earn a salary throughout.

Organisations where physics students have done their placements include:

- CERN, Switzerland
- Daresbury Laboratory, Science and Technology Facilities Council
- IBM
- Sellafield Ltd

## Study abroad.

If you do the Study Abroad course, instead of completing our standard level three, you will spend your third year studying physics at a top university in the USA, Canada, Australia or New Zealand.

Universities our students have gone to include:

- Australian National University, Canberra
- McMaster University, Ontario, Canada
- Monash University, Melbourne, Australia
- University of Auckland, New Zealand
- University of Illinois at Urbana-Champaign, USA
- University of Texas at Austin, USA

## Be Sheffield Made.

The information given here is based on the current academic year. There may be some changes before you start your course. For the latest information, visit our website.

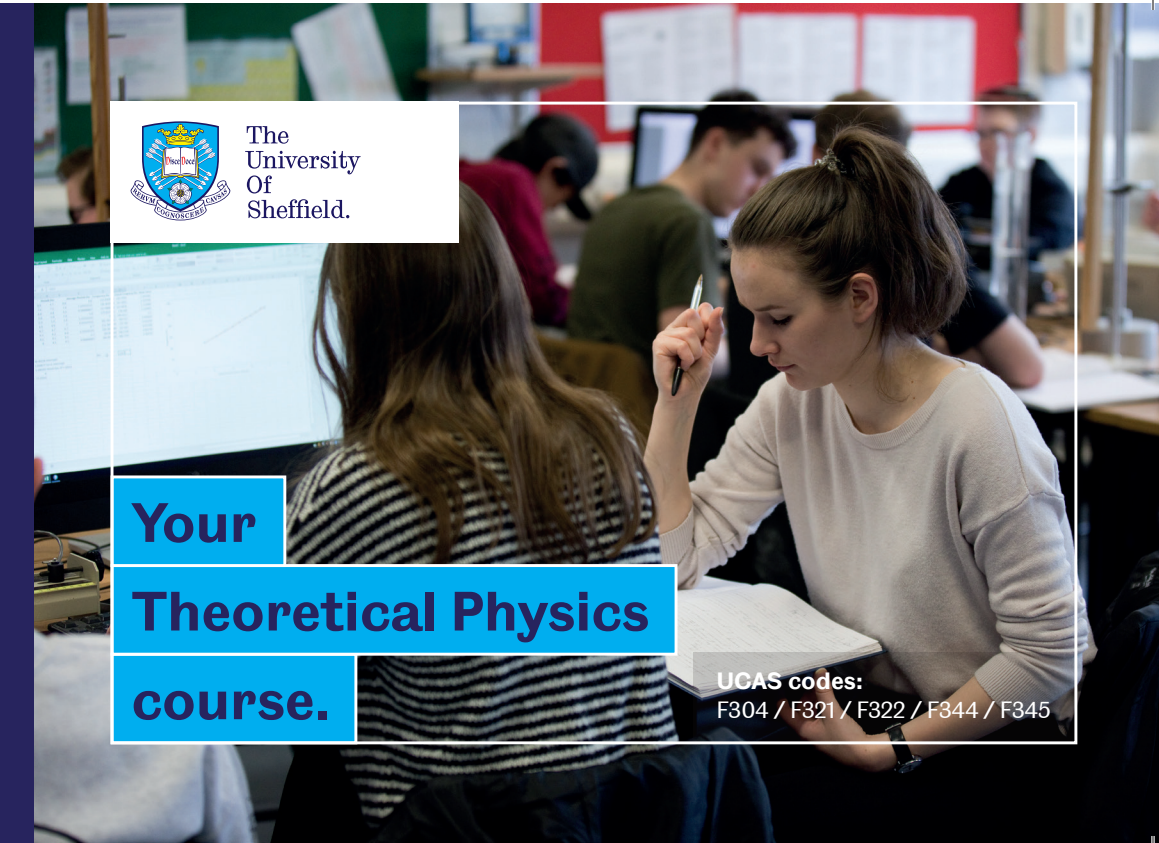
[www.sheffield.ac.uk/physics](http://www.sheffield.ac.uk/physics)  
[www.youtube.com/sciencesheffield](http://www.youtube.com/sciencesheffield)



The University Of Sheffield.

## Your Theoretical Physics course.

UCAS codes:  
F304 / F321 / F322 / F344 / F345



You'll study the essential physics that all physics students cover. Plus, you can take advanced maths modules, to give you a much more detailed understanding of the tools and ideas that underpin all of physics.

There are optional modules from the start of your degree and the choice only expands from there. We offer a range of project modules in level three, and MPhys students spend half of their final year working in one of our leading research groups.

### Level one.

#### Core modules:

- Fields and Quanta
- Mathematics Core
- Mathematics for Physicists and Astronomers
- Motion and Heat
- Supplementary Mathematics for Theoretical Physicists

#### Optional modules:

- Frontiers in Physics
- Introduction to Astrophysics
- Introduction to Electric and Electronic Circuits
- Our Evolving Universe
- Physics of Living Systems 2
- The Solar System
- The Physics of Sustainable Energy

### Level two.

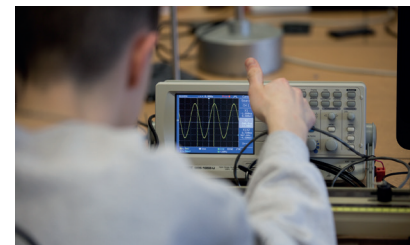
#### Core modules:

- Classical and Quantum Physics for Theoretical Physics
- Programming in Python
- Special Relativity and Subatomic Physics

#### Optional modules:

- Advanced Calculus and Linear Algebra
- Aspects of Medical Imaging and Technology
- Astronomical Spectroscopy
- Detection of Fundamental Particles
- Differential Equations
- Galaxies

- Mechanics and Fluids
- Physics of Materials
- Physics with Labview (Study Abroad / Year in Industry only)
- Stellar Structure and Evolution
- The Physics of Music



### Level three.

#### Core modules:

- Atomic and Laser Physics
- Mathematical Physics
- Particle Physics
- Problem Solving and Advanced Skills in Physics
- Solid State Physics
- Statistical Physics

#### Optional modules:

- Advanced Programming in Python
- Astrobiology
- Continuum Mechanics

- Dark Matter and the Universe
- Differential Geometry
- Fluid Mechanics I
- Industrial Group Project in Physics
- Introduction to Cosmology
- Introduction to Soft Condensed Matter and Biological Physics
- Mathematical Biology
- Mathematical Modelling of Natural Systems
- Microscopy and Spectroscopy Laboratory

- Nuclear Physics
- Origin of the Chemical Elements
- Physical Computing
- Physics Education and Outreach
- Research Project in Physics
- Quantum Information Laboratory
- Semiconductor Physics and Technology

### Level four (MPhys only).

#### Core modules:

- Advanced Electrodynamics
- Advanced Quantum Mechanics
- Research Project

#### Optional modules:

- Advanced Particle Physics
- Advanced Soft Condensed Matter and Biological Physics

- Analytical Dynamics and Classical Field Theory
- An Introduction to General Relativity
- Dark Matter and the Universe
- Introduction to Cosmology
- Magnetohydrodynamics
- Mathematical Modelling of Natural Systems (Advanced)

- Optical Properties of Solids
- Physics in an Enterprise Culture
- Quantum Optics and Quantum Computing
- The Development of Particle Physics
- The Physics of Soft Condensed Matter
- Topics in Advanced Fluid Mechanics