WHY CHOOSE PHYSICS & ASTRONOMY AT SUSSEX?

OUR GRADUATES ARE IN HIGH DEMAND
We are ranked 1st amongst all Physics departments for graduate employment prospects (The Guardian University Guide 2018.)

YOU WILL STUDY AT ONE OF THE UK’S TOP PHYSICS DEPARTMENTS
We are ranked 15th in The Guardian University Guide 2018.

YOU WILL BE PART OF THE STIMULATING AND ENGAGING LEARNING ENVIRONMENT
Our departmental community helps you get the most out of your degree. This is one of the reasons why our students scored us 92% for overall satisfaction in the most recent National Student Survey (2016).

YOU WILL BE INSPIRED BY WORLD-LEADING PHYSICISTS AND ASTRONOMERS, WHO WILL TEACH YOU ALL ABOUT ESTABLISHED THEORIES AND THE LATEST DEVELOPMENTS
Physics research at the University of Sussex has been ranked as 13th in western Europe and seventh in the UK and has been profiled as one of its top-25 “rising stars” worldwide (source: Nature).

OUR COURSES
We offer a wide range of Physics and Astronomy courses. All of our undergraduate degree courses are accredited by the Institute of Physics, which means that the standard and content are continuously monitored.

Youths one and two of our Physics degrees provide you with a firm foundation of Physics and the core principles of the subject. Subsequent years allow you to apply the core principles in a broad range of important areas such as nuclear and particle physics and quantum physics. There is more emphasis on choice in later years enabling you to specialise in the areas that interest you most.

WE OFFER THE FOLLOWING COURSES:
• Physics and Astronomy (with a foundation year) BSc
• Physics BSc
• Physics MPhys
• Physics (with an industrial placement year) BSc
• Physics (with an industrial placement year) MPhys
• Physics (research placement) MPhys
• Theoretical Physics BSc
• Theoretical Physics MPhys
• Physics with Astrophysics BSc
• Physics with Astrophysics MPhys
• Astrophysics MPhys
MPhys OR BSc?

Our MPhys degrees best suit students who are interested in a career in science, or who want to go on to a higher research degree. The first three years of the course are very similar to the BSc, but the additional research-focused fourth year enables you to graduate with a Masters degree whilst being eligible for undergraduate financial support.

The BSc course gives you the same broad range of knowledge and skills and is ideal for those who want to explore a wider range of options early on in their careers.

INDUSTRIAL PLACEMENT YEAR

We also offer the BSc and MPhys as courses with an industrial placement year. The industrial placement provides you with the opportunity to spend an additional year working in industry. You can choose from a range of companies and benefit from our links with employers through the South East Physics Network (SEPlnet).

RESEARCH PLACEMENT

For our most able MPhys students we offer the opportunity to do summer research placements. Undergraduates on the MPhys Physics (research placement) course spend their summers working in close contact with world-leading physicists and astronomers on a paid research placement. If you are planning a research career, this course provides a unique opportunity to learn about research methods and practices whilst developing your practical physics and/or astrophysics knowledge.

STUDY ABROAD

Studying abroad makes you stand out from other students when entering the job market. Students on our MPhys and BSc courses have the option of spending some of their degree studying abroad. Our exchange partners include world leading universities such as the University of California, Tsinghua University in Beijing, China, the Technical University and the Ludwig Maximilian University in Munich, Germany. Research placement students have the option to do their summer placement abroad.

“I really enjoyed the opportunity to try out research in an interdisciplinary environment. My final year project aimed at improving analysis of medical MRI gave me a real insight into one of the many open doors presented by studying physics – research doesn’t have to be limited to a narrow field.”

RHIANNON HARRIES, MPHYS PHYSICS
# Course structure

<table>
<thead>
<tr>
<th>AUTUMN TERM</th>
<th>SPRING TERM</th>
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<tbody>
<tr>
<td><strong>YEAR TAKEN BY STUDENTS</strong></td>
<td><strong>YEAR ON FOUNDATION YEAR ONLY</strong></td>
</tr>
<tr>
<td>Physics Foundation Year Laboratory</td>
<td>Physics Foundation Year Laboratory</td>
</tr>
<tr>
<td>Foundation Mechanics</td>
<td>Optics, Waves and Modern Physics</td>
</tr>
<tr>
<td>Foundation Mathematics A</td>
<td>Foundation Mathematics B</td>
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<tr>
<td>Properties of Matter</td>
<td>Electricity and Magnetism</td>
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<tr>
<td>Electrodynamics</td>
<td>Mathematical Methods for Physics 3</td>
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<tr>
<td>Mathematical Methods for Physics 3</td>
<td>*Physics Year 2 Laboratory</td>
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<tr>
<td>*Physics Year 2 Laboratory</td>
<td>*Theoretical Physics students take Analysis 1</td>
</tr>
<tr>
<td>Scientific Computing</td>
<td>*Advanced Physics Laboratory</td>
</tr>
<tr>
<td>*Theoretical Physics students take Analysis 2</td>
<td>**A choice of three options</td>
</tr>
<tr>
<td><strong>YEAR 1</strong></td>
<td><strong>YEAR 2</strong></td>
</tr>
<tr>
<td>Classical Mechanics</td>
<td>Quantum Mechanics 1</td>
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<tr>
<td>Mathematical Methods for Physics 1</td>
<td>Skills in Physics 2</td>
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<tr>
<td>Oscillations, Waves and Optics</td>
<td>Thermal and Statistical Physics</td>
</tr>
<tr>
<td>Physics in Practice</td>
<td>*Option choice</td>
</tr>
<tr>
<td>*Theoretical Physics students take Analysis 2</td>
<td>*Astrophysics students take Stars and Planets</td>
</tr>
<tr>
<td>*Theoretical Physics students take Analysis 2</td>
<td>*Advanced Physics Laboratory</td>
</tr>
<tr>
<td><strong>YEAR 3</strong></td>
<td><strong>YEAR 4 MPHYS STUDENTS – MPHYS FINAL YEAR PROJECT (45 CREDITS)</strong></td>
</tr>
<tr>
<td>*Advanced Physics Laboratory</td>
<td>*Astrophysics students take Introduction to Cosmology</td>
</tr>
<tr>
<td>Atomic Physics</td>
<td>**A choice of three options</td>
</tr>
<tr>
<td>Condensed State Physics</td>
<td>**Astrophysics students take Extragalactic Astronomy and Quantum Mechanics 2</td>
</tr>
<tr>
<td>Nuclear and Particle Physics</td>
<td>Mphys with Research Placement – 4 week summer placement (optional)</td>
</tr>
<tr>
<td>Choice of a two-term BSc Project or take Education modules Communicating STEM and Research STEM</td>
<td>Students take 5 options from a range across the two terms</td>
</tr>
<tr>
<td>*Theoretical Physics students produce a Mathematical Physics Project</td>
<td>Students on MPhys do not do a BSc Project in year 3</td>
</tr>
</tbody>
</table>

This outline of the Physics & Astronomy curriculum is based on 2017 entry.
HOW WILL YOU LEARN?

You will learn through a wide variety of teaching methods:

• Lectures last 50 minutes and typically there will be two or three per week for each module. Lectures take place in groups of between 10 and 140, with one lecturer responsible for each module.
• Exercise classes are used to explain and discuss the solutions to weekly problem sheets.
• For further help with solving example problems, there are dedicated help desks once a week.
• Lecturers arrange feedback hours in their offices, during which students may discuss particular problems with them on an individual basis.
• Laboratory work is done during one term in years 1 and 2 (two terms in year 3 for MPhys students). Faculty and postgraduate students are present to guide the work and mark the reports.
• All students carry out a research project normally during two terms of their final year. You will be supervised closely by a member of faculty, often as part of a team of graduate students and research fellows.

All courses are regularly monitored to ensure the highest possible quality, both by assessing student feedback and by an analysis of student achievement.

Lecturers are available to help and advise you, encourage questions and respond to suggestions.

FINAL YEAR PROJECT

The final-year project is a very important part of your degree. It is in the project that you have a chance to put your studies into practice and experience academic research. You will be closely supervised by a faculty member and in many cases you will interact with postdoctoral researchers and PhD students. Projects vary enormously from the purely experimental, through numerical projects using a supercomputer, to theoretical projects where the only equipment needed, is a pencil.

AFTER YOUR DEGREE

Our degrees will equip you with a wide range of skills and knowledge specific to physics and astronomy, as well as more general vocational skills. You will understand fundamental physics laws and principles and be able to apply them, have an analytical approach to problem solving, and be able to effectively use IT to analyse data. In addition, you will develop the ability to work independently, to tight deadlines and develop skills to communicate scientific information. All of these skills are highly prized by employers.

The department actively engages with employers in the South East region, through the South East Physics Network (SEPnet). This ensures that the skills and versatility our students develop during their degree are an excellent match to employers’ requirements. Many of our graduates also go on to pursue further studies, both here and at other institutions.

Our Physics graduates are able to enter a wide variety of vocational fields. Many become professional scientists in industry, government or academia, where their broad training means they are often able to cross over into other scientific and technological disciplines. Other career destinations of past graduates have included teaching, IT and technology, and the financial sector, where a physicist’s ability to handle complex abstract models is highly valued. The analytical training we provide our students with, has also made them highly suitable for careers in data analytics, consultancy and business management.

“We’re given so much support, from the open door policy with lecturers, to the fantastic student study spaces and student mentors, so you are never at a loss for someone to ask for help.”

ANJELAH BALACHANDRAN, THEORETICAL PHYSICS MPhys
FURTHER INFORMATION

APPLICANT VISIT DAYS

All applicants who receive an offer and meet the advisory UCAS applications deadline are invited to attend an Applicant Visit Day. You will get a first-hand impression of what it is like to study here, a fuller picture of your chosen degree course, and an idea of what life is like as a student at the University of Sussex. There will be general and departmental talks, tours of the campus, accommodation and Brighton, and plenty of opportunities to meet lecturers and current students.

MORE QUESTIONS?

See our online prospectus at www.sussex.ac.uk/study/ug for more information, including the latest on:

• entry requirements
• how to apply
• fees, scholarships, bursaries and other financial support
• how to arrange to visit us.

“The department has a really happy, friendly atmosphere. I personally wouldn’t want to go anywhere else to study physics.”

FRANCIS JANS,
PHYSICS WITH ASTROPHYSICS BSC