Our Physics with Astrophysics and Cosmology MSci course will give you an understanding of fundamental aspects of physics, astrophysics and cosmology covering areas such as special and general relativity, quantum mechanics, fields and waves, the physics of planets, stars, galaxies and the universe as a whole. Approximately one quarter of the course is astrophysics and cosmology related. You will carry out extensive astrophysics or cosmology related project work in your fourth year to gain an insight into the skills and conduct of scientific research. You will be taught by academic staff with links to the Large Hadron Collider at CERN and the LIGO gravitational wave observatory. Your studies will take place in a friendly and supportive environment in the heart of London.

**Key benefits**

- Award winning – six former staff and students in the department have won Nobel Prizes.
- Internationally-renowned academic staff in the fields of particle physics and cosmology, nanotechnology and the interface between physics and biology.
- Friendly and supportive learning environment.
- 90 per cent of our research was classed as world leading or internationally excellent in the 2014 Research Excellence Framework.
- Central location gives you easy access to major libraries and many leading societies, including the Institute of Physics.

**Course details**

For your first three years of the course you will follow very similar modules as those taking our Physics with Astrophysics and Cosmology BSc. This will give you an excellent grounding in the fundamental aspects of physics you will need for further study and research. You will study subjects such as relativity, quantum mechanics, nuclear and particle physics, stellar and galactic evolution and structure (touching on unsolved problems such as the nature of dark matter and dark energy). In your fourth year, you will access a wide range of specialised physics options chosen from our Physics Department, our Maths Department, or modules at other University of London institutions, and the MSci project will give you experience of a genuine large-scale research project. Problem solving and project work is an important part of this course, and you will learn about team work, group organisation, and the skills of oral and poster presentations.

You will be assigned a personal tutor to support your development and the Department encourages an atmosphere in which students feel able to easily approach academic staff. Our Student-Staff Liaison Committee provides a forum for the exchange of ideas and feedback on teaching. Staff and students are members of the Maxwell Society, which is the Department of Physics’ social and lecture society.

**Flexibility in course choice**

Students who enrol on the MSci/BSc (Hons) Physics with Astrophysics and Cosmology, can typically change to most of the other Physics courses at the end of their first year. Similarly, students who have initially enrolled on other Physics courses can change to Physics with Astrophysics and Cosmology at the end of the first year provided that they have taken the first year module “Introduction to Astrophysics”.

Students can switch between the BSc and MSci versions of the course until their third year of...
study but progression into the final year of the MSci is contingent on performing at upper second class level or better in the first three years of study.

Teaching
We will teach you through a combination of lectures and laboratory classes, tutorials and project work. All of our academic staff are involved with the undergraduate teaching course. You are expected to spend approximately 10 hours work per credit for each module you attend in your degree, e.g. 150 hours work for a 15 credit module. These hours cover every aspect of the module.

Assessment
We will assess you primarily through written exams, although occasionally also through practical laboratory examinations, laboratory reports, class tests, coursework and oral presentations.

Regulating body
King’s College London is regulated by the Office for Students.

Course structure
Each course is divided into modules. You will normally take modules totalling 120 credits.

Year 1
Required modules
You are required to take:

- Physics Skills and Techniques (30 credits)
- Mathematics & Computation for Physics (30 credits)
- Classical Physics (30 credits)
- Introduction to Modern Physics (15 credits)
- Introduction to Astrophysics (15 credits)

Optional modules
There are no optional modules in your first year.

Year 2
Required modules
You are required to take:

- Experimental Physics (15 credits)
- Mathematical Methods for Physics (15 credits)
- Thermal Physics & Properties of Matter (15 credits)
- Quantum Mechanics I (15 credits)
- Electromagnetism (15 credits)
- Relativity and Sub-atomic Physics (15 credits)
- Stellar Structure and Evolution (15 credits)

Optional modules
In addition, you are required to take 15 credits from a range of optional modules, which may typically include:

- Mathematical Methods for Theoretical Physics (15 credits)
- Galactic Dynamics and Interstellar Medium (15 credits)
- Symmetry in Physics (15 credits)

Year 3
Required modules
You are required to take:

- Statistical Mechanics (15 credits)
- Optics (15 credits)
- Condensed Matter I (15 credits)
- Quantum Mechanics II (15 credits)
- Particle Physics (15 credits)
- Relativistic High Energy Astrophysics (15 credits)

Optional modules
In addition, you are required to take 30 credits from a range of optional modules, which may typically include:

- General Relativity and Cosmology (15 credits)
- Advanced Mathematical Methods for Theoretical Physics (15 credits)
- 3rd year Project in Physics (Astrophysics/Cosmology related) (15 credits)

Year 4
Required modules
You are required to take:

- Literature Review (Astrophysics/Cosmology related) (15 credits)
- Project (Astrophysics/Cosmology Related) (30 credits)

Optional modules
In addition, you are required to take 75 credits from a range of optional modules, including the 40+ modules offered by the University of London colleges as part of the intercollegiate MSci. Examples offered by King’s include, amongst many others:

- Dark Matter and Dark Energy (15 credits)
- Astroparticle Cosmology (15 credits)
- Standard Model and Beyond (15 credits)
King’s College London reviews the modules offered on a regular basis to provide up-to-date, innovative and relevant programmes of study. Therefore, modules offered may change. We suggest you keep an eye on the course finder on our website for updates.

**Location**

This course is primarily taught at the King’s College London Strand campus. Our Department is located on the 7th floor with views over the Thames to the London Eye and Westminster. This central location gives you easy access to major libraries and many leading societies including the Institute of Physics, as well as the extensive cultural and social offerings of one of the world’s most vibrant and dynamic cities.

**Career prospects**

Our Physics graduates are in high demand because employers recognise the wide range of skills that they possess. We train physicists to be good problem solvers, to think logically and to apply mathematical and computational techniques to real problems. Recent physics graduates found employment or further study as:

- PhD student (in Astrophysics, Biophysics, Condensed Matter etc.), at KCL, UCL, Imperial etc.
- Scientist, Oxford Nanopore Technologies
- Publishing Editor, Royal Society of Chemistry
- Mathematical Modeller, Bryden Woods
- Actuarial Analyst, Willis
- Physics Teacher, London

**Fees and funding**

**Full time tuition fees UK**

The UK tuition fees for the 2019-20 academic year are available on the course web page. Please note that the tuition fees for subsequent years of study may be subject to increases in line with King’s terms and conditions.

**Full time tuition fees EU**

Students starting their programme in 2019/20 (September 2019) who are eligible to pay EU fees will pay the same rate of tuition fees as UK students. This will apply for the duration of their programme but may be subject to change by the UK Government for subsequent cohorts from 2020/21.

The UK tuition fees for the 2019-20 academic year are available on the course web page. Please note that the tuition fees for subsequent years may be subject to increases in line with King’s terms and conditions.

**Full time tuition fees International**

The international tuition fees for the 2019-20 academic year are available on the course web page. Please note that the tuition fees for subsequent years of study may be subject to increases in line with King’s terms and conditions.

**Deposit**

All international applicants to undergraduate programmes are required to pay a deposit of £2,000 against their first year’s tuition fee. This deposit is payable when you firmly accept an unconditional offer to study with us and will be offset against your tuition fees when you join King’s.

**Additional costs/expenses**

In addition to your tuition fees, you can also expect to pay for:

- books if you choose to buy your own copies
- clothing for optional course related events and competitions
- library fees and fines
- personal photocopies
- society membership fees
- stationery
- graduation costs
- travel costs for travel around London and between campuses
- alternative venue [examination fees](#)

**Disclaimer**

Although this PDF was accurate at the time it was produced, please make sure you check our website or contact us directly for the very latest information before you commit yourself to any of our courses.

**Contact us**

+44 (0)20 7836 5454

For further information, please visit the fees and funding section of our website: [kcl.ac.uk/study/undergraduate/fees-and-funding/index.aspx](http://kcl.ac.uk/study/undergraduate/fees-and-funding/index.aspx)