Physics MSc

Year of entry: 2019
Duration: full-time: one year, part-time: two years
Study mode: full-time, part-time

www.kcl.ac.uk/study/postgraduate/taught-courses/physics-msc.aspx

The Physics MSc will give you experience in conducting complex research tasks in the rapidly developing and exciting fields of particle physics and cosmology, experimental biophysics and nanotechnology, and the theory and simulation of condensed matter. It will also provide you with the background knowledge and skills required to become an active scientist.

Key benefits
- Located in the heart of London, giving unparalleled access to research facilities.
- You will be studying innovative modules covering modern theories of physics.
- Research-led course taught by staff who are recognised leaders in their field.
- For students whose interests lie in experimental physics, the opportunity to study the state of the experimental art nanosystems, bio-imaging, near-field optics and nanophotonics, with access to the laboratories of the London Centre for Nanotechnology (LCN). You will be offered our flagship module in Advanced Photonics.
- For students whose interests lie in theoretical physics, the opportunity to take our flagship modules in Standard Model & Beyond and Advanced Condensed Matter.
- Excellent tutorial support, extensive course-specific interactive teaching and extensive project work.

Course details
The Physics MSc is an interdepartmental course that covers significant research elements of rapidly developing and exciting fields of particle physics and cosmology, experimental biophysics and nanotechnology as well as theory and simulation of condensed matter. This course will equip you with expertise in planning, administration, execution and dissemination of research, and will also provide you with the background knowledge and skills required to become an active scientist.

The Physics MSc offers you the choice to study either full or part-time and is made up of required and optional modules including the research module in your second year.

You will study modules offering group projects, literature reviews and there are opportunities to explore an extensive range of innovative optional modules, allowing you the freedom to develop your study pathway to reflect your interests.
Teaching
We use lectures, seminars and group tutorials to deliver most of the modules on the course. You will also be expected to undertake a significant amount of independent study.

<table>
<thead>
<tr>
<th>Module</th>
<th>Lectures, seminars, self-study and feedback (hours)</th>
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<tbody>
<tr>
<td>Per 15-credit taught module</td>
<td>150</td>
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<tr>
<td>Dissertation module</td>
<td>600</td>
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Typically, one credit equates to 10 hours of work.

Assessment
The primary method of assessment for this course is a combination of written examinations, essays, coursework and individual or group projects and oral presentations. The research project and dissertation will be assessed on an extended piece of writing.

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

Course structure
Courses are divided into modules, and students on this course take modules totalling 180 credits.

Required modules
You are required to take:
- Scientific Communications (15 credits)
- Advanced Topics in Physics (15 credits)
- Research Project in Physics (60 credits)

Optional modules
You are required to take at least 30 credits from a range of optional modules, which may typically include:
- Advanced Photonics (15 credits)
- Mathematical Methods for Theoretical Physics (15 credits)
- Theoretical Treatment of Nano-systems (15 credits)
- Experimental Techniques in Condensed Matter Physics (15 credits)
- Bio & Nanomaterials in the Virtual Lab (15 credits)
- Standard Model Physics & Beyond (15 credits)
- Astroparticle Cosmology (15 credits)
- Advanced Condensed Matter (15 credits)
- Cellular Biophysics (15 credits)
- Dark Matter & Dark Energy (15 credits)
- Simulation Methods for Non-equilibrium Systems (15 credits)

Additionally, you are required to take sufficient credits to bring your total for the year to 180, from a range of optional modules, which may typically include:

Modules offered by the King’s College London Department of Mathematics:
- Lie Groups & Lie Algebras
- String Theory & Branes
- Elements of Statistical Learning
- Mathematical Biology
- Dynamical Analysis of Complex Systems
- Equilibrium Analysis of Complex Systems
- Theory of Complex Networks
- Supersymmetry

Modules offered by Royal Holloway, University of London:
- Statistical Mechanics
- Superfluids, Condensates & Superconductors
- Nuclear Magnetic Resonance
- Physics at the Nanoscale

Modules offered by University College London:
- Advanced Quantum Theory
- Atom & Photon Physics
- Quantum Computation & Communication
- Molecular Physics
- Particle Physics
- Order & Excitations in Condensed Matter
- Planetary Atmospheres
- Solar Physics
- Space Plasma & Magnetospheric Physics
- Molecular Biophysics

Modules offered by Queen Mary, University of London:
- Relativistic Waves & Quantum Fields
- Electromagnetic Theory
- Stellar Structure & Evolution
- Relativity & Gravitation
- Solar System
- The Galaxy
- Astrophysical Plasmas

Part-time students should plan to take a minimum of 60 credits in their first year since they are required to have passed a minimum of 60 credits to progress into the second year.

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 that you keep an eye on the course finder on our website for updates.
Location
The majority of learning for this degree takes place at the King’s College London Strand Campus, with occasional lectures and practical sessions taking place at the Waterloo Campus. Please note that locations are determined by where each module is taught and may vary depending on the optional modules you select.

Career prospects
Many of our graduates go on to study for a PhD in Physics, work in scientific research, teaching or work in the financial sector.

Fees and funding
Full-time and part-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 and part-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 of study may be subject to increases in line with King’s terms and conditions.

Full-time and part-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
When you receive an offer for this course you will be required to pay a non-refundable deposit to secure your place. The deposit will be credited towards your total fee payment.

The UK/EU deposit is £500.

The International deposit is £2,000.

For further information, please visit the fees and funding section of our website: www.kcl.ac.uk/study/postgraduate/fees-and-funding/index.aspx

Additional costs
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
• course packs, which are a vital part of your learning at King’s and normally contain extracts from books and other useful documents that will inform your study.
• library fees and fines
• personal photocopies
• printing course handouts
• society membership fees
• stationery
• travel costs for travel around London and between campuses
• graduation costs.

Disclaimer
Although this PDF was up-to-date at the time it was produced, please make sure you check our website www.kcl.ac.uk/study or contact us directly for the very latest information before you commit yourself to any of our courses.

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