Course Information Sheet for entry in 2026-27: MSc in Medical Physics with Radiobiology

Course facts

Mode of study	Full Time Only
Expected length	1 year

About the course

The MSc in Medical Physics with Radiobiology is a one-year, full-time course, combining physics, radiobiology, and clinical applications. It is accredited by the Institute of Physics and Engineering in Medicine (IPEM).

This course is designed for individuals interested in a careers in medical physics from either a clinical or academic research perspective, or in professions that require a knowledge of medical physics, such as radiation protection.

The main aim of the course is to discuss how ionising and non-ionising radiation are used in clinical practice, both in the context of radiotherapy and medical imaging. This is combined with principles of radiobiology at molecular and cellular level, to give graduates a better understanding of the effects of radiation than is achieved in other medical physics courses.

The course is based on a series of overarching learning outcomes, which you will be able to demonstrate on completion of your studies:

- Explain the underpinning physics which governs the interactions between ionising radiation and biological tissues
- Critically analyse the effects of ionising radiation on DNA and the associated DNA damage response, with respect to their effects on cell survival
- Critically appraise the irradiation response of cells and tissues, including the factors that modify this response, with respect to how this may affect clinical practice
- Critically discuss the implementation of radiation safety precautions, with respect to the mechanism of damage from radiation exposure, and the legislative requirements which govern radiation protection
- Explain the mechanisms of action of a range both ionising and non-ionising radiation imaging technologies, with respect to their clinical use
- Use fundamental physics of radiation action to analyse the effects of clinical radiotherapy technologies and techniques
- Critically evaluate new developments in ionising and non-ionising imaging, and clinical radiotherapy
- Critically appraise the role of simple and advanced analytical techniques within medical physics research
- Explain and evaluate the research approaches used in applied and translational research within the field of medical physics
- Apply the scientific method to address research questions within the field of medical physics

Most students on this course will have a physics undergraduate degree.

Course structure

An overview of the course structure is provided below. Details of the compulsory elements of the course are provided in the *Course components* section of this page.

Prior to the start of Michaelmas term, you will be signed up to two online, self-paced, short courses which cover all of the basic principles of biology and human anatomy that you will need to know to help you with the biology elements of the course. You will need to pass a short online test on these concepts part way through the term.

You will take eight compulsory modules and can expect to receive seven to eight lectures and two to four tutorial or practical classes per module on average. There will also be preparatory reading, independent study tasks, and formative assessments set throughout the course, to be completed in the non-contact hours.

Alongside the module specific tutorials, you will also attend a series of compulsory Directors' Tutorials throughout the year. These cover overarching themes such as critiquing a scientific paper, or presentation skills, and help to prepare you for specific assessment methods, including the dissertation.

Attendance

The course is full-time and requires attendance in Oxford. Full-time students are subject to the University's Residence requirements. (//www.ox.ac.uk/admissions/graduate/after-you-apply/accommodation/residence-requirements)

Resources to support your study

As a graduate student, you will have access to the University's wide range of resources including libraries, museums, galleries, digital resources and IT services.

The Bodleian Libraries is the largest library system in the UK. It includes the main Bodleian Library and libraries across Oxford, including major research libraries and faculty, department and institute libraries. Together, the Libraries hold more than 13 million printed items, provide access to e-journals, and contain outstanding special collections including rare books and manuscripts, classical papyri, maps, music, art and printed ephemera.

The University's IT Services is available to all students to support with core university IT systems and tools, as well as many other services and facilities. IT Services also offers a range of IT learning courses for students to support with learning and research, as well as guidance on what technology to bring with you as a new student (https://www.it.ox.ac.uk/what-to-bring) at Oxford.

You will have access to the Oncology Education Hub, which includes dedicated lecture and tutorial rooms at the heart of the department, alongside an open plan, unassigned seating workspace for masters and first year DPhil students.

There is a programme of departmental seminars and poster presentation events, which are open to staff and students. The Oncology Student Network coordinate a programme of student only activities, including both academic and social events.

Supervision

The allocation of graduate supervision is the responsibility of the Department of Oncology and it is not always possible to accommodate the preferences of incoming graduate students to work with a particular member of staff. A supervisor may be found outside the Department of Oncology.

You will be assigned a Director of Studies from the course team, who will help you review your progress, and discuss any concerns you have; your Director of Studies and the course administration team will usually be your first port of call for any queries about your studies. You will also have an advisor at your Oxford college, to whom you can turn if you feel you need to discuss your progress, or anything else pertinent to your study, away from the course team.

During the research project you will be allocated a project supervisor who will be responsible for your supervision and training. This supervisor will usually be from the Department of Oncology or the Oxford University Hospitals NHS Trust. We would recommend arranging meetings with your supervisor to take place at least every two weeks.

Assessment

Taught modules are assessed by a mixture of submitted coursework, presentations, and timed assessments such as examinations. The taught modules are assessed at the end of the term in which they are delivered. The dissertation is assessed by a written thesis and a poster presentation at the end of the academic year.

You will have the opportunity to submit formative assignments to develop your writing and presenting skills and receive feedback prior to completing your summative assessed work.

Course components

Compulsory study

You will take eight compulsory courses which are delivered in two-week blocks, following on from each other.

1. Physics of Radiation Interactions
2. Molecular Radiation Biology
3. Radiobiology of Cells and Tissues
4. Radiation Safety
5. Ionising Radiation Imaging Technologies
6. Radiation Therapy Physics
7. Non-ionising Radiation Technologies
8. Translational Research Methods and Applications.

Modules one to four are delivered in Michaelmas term and build a picture of the biological responses to radiation from the sub-atomic level through to the effects on whole tissues, in both tumours and normal tissue, and will link this to radiation protection requirements for both patients and workers.

Modules five to eight are delivered in Hilary term and cover the application of physics in clinical practice across both imaging and radiotherapy. This will include discussion of new and emerging modalities and how these approaches are translated from the lab into clinical practice.

Research Project

During Trinity Term and the Long Vacation, students who have successfully met the academic progression criteria through examination performance will be eligible to undertake a supervised research project in medical physics and/or radiobiology or a closely related field. This component culminates in the submission of a research dissertation, not exceeding 10,000 words, by the designated deadline in August. Students will then present a scientific poster summarising their research at the Department of Oncology Masters Showcase held in September.

Changes to this course

The University will seek to deliver this course in accordance with the description set out in this course page. However, there may be situations in which it is desirable or necessary for the University to make changes in course provision, either before or after registration. The safety of students, staff and visitors is paramount and major changes to delivery or services may have to be made if a pandemic, epidemic or local health emergency occurs. In addition, in certain circumstances, for example due to visa difficulties or because the health needs of students cannot be met, it may be necessary to make adjustments to course requirements for international study.

Where possible your academic supervisor will not change for the duration of your course. However, it may be necessary to assign a new academic supervisor during the course of study or before registration for reasons which might include illness, sabbatical leave, parental leave or change in employment.

For further information please see our page on changes to courses (//www.ox.ac.uk/admissions/graduate/courses/changes-to-courses) and the provisions of the student contract (//www.ox.ac.uk/admissions/graduate/after-you-apply/your-offer-and-contract) regarding changes to courses.

Costs

Annual course fees

The fees for this course are charged on an annual basis.

Fees for the 2026-27 academic year at the University of Oxford

Fee status	Annual Course fees
Home	£15,800
Overseas	£36,170

What do course fees cover?

Course fees cover your teaching as well as other academic services and facilities provided to support your studies. Unless specified in the additional information section below, course fees do not cover your accommodation, residential costs or other living costs. They also don't cover any additional costs and charges that are outlined in the additional costs information below.

How long do I need to pay course fees?

Course fees are payable each year, for the duration of your fee liability (your fee liability is the length of time for which you are required to pay course fees). For courses lasting longer than one year fees will usually increase annually, as explained in the University's Terms and Conditions (//www.ox.ac.uk/students/new/contract) .

Our fees and other charges (//www.ox.ac.uk/admissions/graduate/fees-and-funding/fees-and-other-charges) pages provide further information, including details about:

- course fees and fee liability (//www.ox.ac.uk/admissions/graduate/fees-and-funding/fees-and-other-charges/courses-fees-and-liability) ;
- how your fee status is determined (//www.ox.ac.uk/admissions/graduate/fees-and-funding/fees-and-other-charges/fee-status) ; and
- changes to fees and other charges (//www.ox.ac.uk/admissions/graduate/fees-and-funding/fees-and-other-charges/changes-to-fees-and-charges) .

Information about how much fees and other costs will usually increase each academic year is set out in the University's Terms and Conditions (//www.ox.ac.uk/students/new/contract) .

Additional costs

There are no compulsory elements of this course that entail additional costs beyond fees and living costs. However, please note that, depending on your choice of research topic and the research required to complete it, you may incur additional expenses, such as travel expenses, research expenses, and field trips. You will need to meet these additional costs, although you may be able to apply for small grants from your department to help you cover some of these expenses.

Living costs

In addition to your course fees and any additional course-specific costs, you will need to ensure that you have adequate funds to support your living costs for the duration of your course.

Living costs for full-time study

For the 2026-27 academic year, the range of likely living costs for a single, full-time student is between £1,405 and £2,105 for each month spent in Oxford. We provide the cost per month so you can multiply up by the number of months you expect to live in Oxford. Depending on your circumstances, you may also need to budget for the costs of a student visa and immigration health surcharge (//www.ox.ac.uk/admissions/graduate/fees-and-funding/living-costs) and/or living costs for family members or other dependants (//www.ox.ac.uk/admissions/graduate/fees-and-funding/living-costs#field_listing_content_content-item--2) that you plan to bring with you to Oxford (if dependant visa eligibility criteria (//www.ox.ac.uk/students/visa/before/family) are met).

Further information about living costs

The current economic climate and periods of high national inflation in recent years make it harder to estimate potential changes to the cost of living over the next few years. For study in Oxford beyond the 2026-27 academic year, it is suggested that you budget for potential increases in living expenses of around 4% each year – although this rate may vary depending on the national economic situation.

A breakdown of likely living costs for one month during the 2026-27 academic year are shown below. These costs are based on a single, full-time graduate student, with no dependants, living in Oxford.

Likely living costs for one month in Oxford during the 2026-27 academic year

	Lower range	Upper range
Food	£315	£545
Accommodation	£825	£990
Personal items	£160	£310
Social activities	£50	£130
Study costs	£35	£90
Other	£20	£40
Total	£1,405	£2,105

For information about how these figures have been calculated as well as tables showing the likely living costs for nine and twelve months, please refer to the living costs (//www.ox.ac.uk/admissions/graduate/fees-and-funding/living-costs) page of our website.

Document accessibility

If you require a more accessible version of this document please contact Graduate Admissions and Recruitment by email (graduate.admissions@admin.ox.ac.uk).