

Course Information Sheet for entry in 2025-26: MSc in Quantum Technologies



Course facts

Mode of study	Full Time Only
Expected length	1 year

About the course

The MSc in Quantum Technologies is an interdisciplinary course providing a technical overview of modern quantum technologies for computing, sensing and communications, with an emphasis on industry connections, practical training and research projects.

Quantum technologies (across quantum computing, sensing and communications) have the potential to bring transformative changes across different sectors from scientific research to industrial applications.

The MSc in Quantum Technologies will provide you with the central technical background in these technologies, combined with hands-on practical training through short modules and research experience through an extended four-month project.

At the end of the course, it is expected that you will have achieved the following learning objectives:

- to have a technical overview of the principles underpinning quantum technologies
- to understand the principles of quantum computing, sensing and communications
- to have an overview of the state-of-the-art in hardware for quantum technologies
- to have further detailed knowledge of specific topics within quantum technologies and their applications (through chosen option courses)
- to appreciate the challenges and opportunities of translating quantum technologies to applications across different setups
- to complete short training in transferable skills including presenting work
- to have practical hands-on experience in practical techniques underpinning quantum technologies chosen from options ranging from laboratory techniques and control systems to programming of quantum computers
- to have demonstrated competence in completing and presenting a research project, both in written and oral form

Course structure

The academic year is split into three terms of eight weeks but work on the MSc course continues throughout the year and is not restricted just to term time.

During the three terms of the course, you will choose from modules on various aspects of quantum technologies.

Core modules

There are two seminar-based compulsory modules comprising an Industry Seminar and a Graduate Public Engagement element. The Industry Seminar is assessed by a coursework report.

Term one (Michaelmas term)

- Quantum Mechanics for Quantum Technologies (optional for students with previous quantum mechanics courses)
- Introduction to Quantum Technologies

Term two (Hilary term)

- Quantum Technologies and their applications
- Hardware for Quantum Technologies

Terms one and two (Michaelmas and Hilary)

- Industrial Seminar
- Quantum Technologies Practical Training

Summer term (Trinity term) and summer vacation

- Quantum Technologies Project, with a dissertation to be submitted on the first Tuesday in September

Optional modules

The options that are offered may vary from year to year as the course develops, and according to the interests of teaching staff. These modules will be available in terms one and two (Michaelmas and Hilary), typical modules will include:

- Quantum Processes and Computation
- Quantum Information
- Materials for Quantum Technologies
- Experimental Techniques Seminar
- Quantum Optics and Atomic Physics
- Additional Quantum Technologies Practical Training
- Many-body Physics

Research project

You will work on a four-month research project and will be placed either within a University research team, or at an industrial partner organisation.

The course will be strongly connected to the emerging international quantum technologies industry, with regular industry seminars highlighting the opportunities and challenges of translating these technologies across different sectors, as well as entrepreneurship and IP management. Some projects will be directly connected to or based within industry research teams.

Attendance

The course is full-time and requires attendance in Oxford. Full-time students are subject to the University's Residence requirements.

The majority of research projects are expected to be based in Oxford and the surrounding area, but some may be based further afield. Any student who prefers to be allocated a project based in or near Oxford will be given that option.

Resources to support your study

As a graduate student, you will have access to the University's wide range of world-class 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.

Academic Resources

The University of Oxford has over 70 academics working in quantum science and technologies and related areas, including in Physics, Engineering Science, Materials, Computer Science, Mathematics, and Chemistry. You will benefit from teaching laboratory facilities during practical training components, and the resources of these research teams (including laboratory and computing facilities), and those of our industrial partners, during the four-month project phase of the course.

Non-Academic Resources

There is a range of welfare and academic support available in the Department of Physics. The Course Director and Graduate Administrator are available to offer support and signpost, and there are several support networks in the department, all of which are available to our graduate students.

Oxford Physics Gender Equity Network (OPGEN), which is run by a committee drawn from across the students, academics and staff in the Department of Physics and organises events and campaigns to promote gender equity in the department.

The Graduate Liaison Committee (GLC). The GLC's purpose is to discuss issues that may concern graduate students in the department such as the quality of graduate courses, availability of skills training, accessibility to library and IT services, and general student welfare.

The Graduate Peer Support Network, which is a subgroup of the informal mentoring network Physics Thrive.

Mental health first aiders are an initial point of contact for students experiencing a mental health issue or emotional distress. They are members of staff of our department, and have completed a two-day mental health first-aid training course, accredited by Mental Health England. They are trained to recognise the symptoms of mental ill health, provide initial help and guide a person towards appropriate professional help. Mental Health First Aiders are not trained to be therapists, but they are taught how to respond in a crisis.

In addition to the resources available within the department, there is additional support available via the Oxford University Student Union (OUSU) and your college.

New students will also be welcome in the wider Oxford Physics community, with multiple opportunities of mutual support and social interactions.

Supervision

The allocation of graduate supervision for this course is the responsibility of the Department of Physics and it is not always possible to accommodate the preferences of incoming graduate students to work with a particular member of staff. Under exceptional circumstances a supervisor is often found outside the Department of Physics.

All projects will be supervised by experts in quantum technologies and underpinning areas across different Mathematical, Physical, Engineering and Life Sciences (MPLS) departments.

You will be matched with a supervisor ahead of your final dissertation project. Some projects may be based with industry partners, in which case a university-side supervisor will also be appointed for the project. Students can typically expect to interact with University supervisors regularly, eg weekly or, in some cases (such as where the project is based in industry), monthly. Most supervisors run an extended research group, including several DPhil students and post-docs, who interact frequently (usually on a daily basis in laboratory or office settings).

Assessment

You will be assessed for all taught modules, research and business case studies, and individual dissertations.

There will be one combined exam for the core modules, which will be held at the beginning of the second term (Hilary term).

Elective modules will be assessed as appropriate to the module, which will be a combination of examinations, mini-projects, reports and/or presentations.

A dissertation of 20,000 words, completed independently under the guidance of an expert supervisor, focusing on the four-month research project and approved by the supervisor and MSc Course Director will be submitted at the end of the course.

Changes to this course

The University will seek to deliver this course in accordance with the description set out above. 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 you commence your course. These might include significant changes made necessary by any pandemic, epidemic or local health emergency. For further information, please see the University's Terms and Conditions (<http://www.graduate.ox.ac.uk/terms>) and our page on changes to courses (<http://www.graduate.ox.ac.uk/coursechanges>).

Costs

Annual fees for entry in 2025-26

Fee status	Annual Course fees
Home	£14,910
Overseas	£38,410

Information about 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, please be aware that fees will usually increase annually. Information about how much fees and other costs may increase is set out in the University's Terms and Conditions (<http://www.graduate.ox.ac.uk/terms>).

Course fees cover your teaching as well as other academic services and facilities provided to support your studies. Unless specified in the additional cost information (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 cost information.

Graduate students who have reached the end of their standard period of fee liability may be required to pay a termly University and/or a college continuation charge.

The University continuation charge, per term for entry in 2025-26 is £672, please be aware that this will increase annually. For part-time students, the termly charge will be half of the termly rate payable by full-time students.

If a college continuation charge applies (not applicable for non-matriculated courses) it is likely to be in the region of £100 to £600. Please contact your college for more details, including information about whether your college's continuation charge is applied at a different rate for part-time study.

Additional cost information

There are no compulsory elements of this course that entail additional costs beyond fees and living costs. However, as part of your course requirements, you may choose a project with an industrial partner outside Oxford. Please note that, depending on your choice of project and the location of the industrial partner, you may incur additional expenses, such as travel expenses. Funding contribution for travel will be offered if the project is based outside Oxford, and projects in Oxford will be available for any student who wishes to remain in Oxford.

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.

The likely living costs for the 2025-26 academic year are published below. These costs are based on a single, full-time graduate student, with no dependants, living in Oxford. We provide the cost per month so you can multiply up by the number of months you expect to live in Oxford.

Likely living costs for one month

	Lower range	Upper range
Food	£330	£515
Accommodation	£790	£955
Personal items	£200	£335
Social activities	£45	£100
Study costs	£40	£90
Other	£20	£40
Total	£1,425	£2,035

Likely living costs for nine months

	Lower range	Upper range
Food	£2,970	£4,635
Accommodation	£7,110	£8,595
Personal items	£1,800	£3,015
Social activities	£405	£900
Study costs	£360	£810
Other	£180	£360
Total	£12,825	£18,315

Likely living costs for twelve months

	Lower range	Upper range
Food	£3,960	£6,180
Accommodation	£9,480	£11,460
Personal items	£2,400	£4,020
Social activities	£540	£1,200
Study costs	£480	£1,080
Other	£240	£480
Total	£17,100	£24,420

When planning your finances for any future years of study at Oxford beyond the 2025-26 academic year, it is suggested that you allow for potential increases in living expenses of 4% each year – although this rate may vary depending on the national economic situation.

More information about how these figures have been calculated is available at www.graduate.ox.ac.uk/livingcosts.

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) or via the online form (<http://www.graduate.ox.ac.uk/ask/form>).