

Materials Science

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Course overview

UCAS code: FJ22
 Entrance requirements: A*AA (with the A* in Maths, Physics or Chemistry).
 Course duration: 4 years (MEng)

Subject requirements

Required subjects: Maths and Physics
 Recommended subjects: Chemistry
 Helpful subjects: Further Maths, Design and Technology (Resistant Materials)

Other course requirements

Admissions tests: PAT
 (/www.ox.ac.uk/admissions/undergraduate/applying-to-oxford/guide/admissions-tests/pat) Written Work: None

Admissions statistics*

Interviewed: 70%
 Successful: 26%
 Intake: 41
 *5-year average 2021-23

Contact

Tel: +44 (0) 1865 275682
 Email: undergraduate.admissions@materials.ox.ac.uk (<mailto:undergraduate.admissions@materials.ox.ac.uk>)

Unistats information for this course can be found at the bottom of the page (#unistats)

Please note that there may be no data available if the number of course participants is very small.

About the course

Materials Science is an interdisciplinary subject, spanning the physics and chemistry of matter, engineering applications and industrial manufacturing processes.

Modern society is heavily dependent on advanced materials, for example:

- lightweight composites for more efficient vehicles
- optical fibres for telecommunications
- and silicon microchips for the continuing revolution in digital technology.

Materials scientists study the relationships between the structure and properties of a material and how it is made. They also develop new materials and devise advanced processes for manufacturing them. Materials Science is vital for developments in nanotechnology, quantum computing, energy storage and nuclear energy, as well as medical technologies such as bone replacement materials and drug delivery.

This diverse programme spans the subject from its foundations in physics and chemistry to the mechanical, electrical, magnetic and optical properties of materials, and the design, manufacture and applications of metals, alloys, ceramics, polymers, composites and biomaterials. This work is supported by excellent laboratory and teaching facilities.

The programme also offers an opportunity to develop an introductory understanding of entrepreneurship (learning how to write a business plan, raise capital and start a company). There are also voluntary options to learn a foreign language with the University's Language Centre (<https://www.lang.ox.ac.uk/>).

The Oxford Materials degree includes in its fourth year the special feature of an eight-month full-time research project. For this fourth year research project you will join a research team either here at Oxford in one of the strongest Departments of Materials in the UK or, occasionally, at an overseas university or in an industrial laboratory (additional costs may be associated with a project outside Oxford). You will learn how to break down a complex problem, design an experiment or model, manage a project and communicate your results. These research skills are transferable to many career paths and are valued highly by employers.

Work placements/international opportunities

Students are encouraged to undertake a voluntary summer project in industry or a research laboratory. Recent locations for overseas summer projects have included Beijing, Zhejiang, Shanghai and Tokyo. A voluntary industrial tour to an overseas destination is organised in some Easter holidays. Recent destinations include Germany, Singapore, France, China and Sweden.

Astrophoria Foundation Year

Applying for Materials Science with a Foundation Year might be right for you if you're interested in studying this course but your personal or educational circumstances mean you are unlikely to achieve the grades typically required for Oxford courses.

Visit our Foundation Year course pages ([/www.ox.ac.uk/admissions/undergraduate/courses/course-listing/fyems](https://www.ox.ac.uk/admissions/undergraduate/courses/course-listing/fyems)) for more details.



'Being a Materials Scientist is rather like being a chemist, physicist, engineer and mathematician all rolled into one: perfect for the all-round scientist! It is challenging, and requires a lot of effort and perseverance, but we get to carry out fun experiments involving orange jelly, molten metal and bubbles, so all the effort seems worth it. Practical classes are particularly good for developing a hands-on approach, and then we also have industrial visits where you get to see where all the work is leading you.'

APPLY ([/www.ox.ac.uk/admissions/undergraduate/applying-to-oxford](https://www.ox.ac.uk/admissions/undergraduate/applying-to-oxford))

FIND OUT MORE

- Visit the department's undergraduate admissions webpages (<https://www.materials.ox.ac.uk/admissions/undergraduate>)
- Visit the department's 'outreach to schools' webpages (<https://www.materials.ox.ac.uk/admissions/schools.html>) and virtual outreach page (<https://www.materials.ox.ac.uk/admissions/schools/virtual-outreach%20>)



Our 2025 undergraduate Open Days will be held on 2 and 3 July and 19 September.

Register ([/www.ox.ac.uk/admissions/undergraduate/open-days-and-visits/open-days-registration-form](https://www.ox.ac.uk/admissions/undergraduate/open-days-and-visits/open-days-registration-form)) to find out more about our upcoming Open Days.

Materials Science in person open days: These usually take place in February and March. Please visit the Materials Science website (<https://www.materials.ox.ac.uk/materials-science-open-days>) for the latest information.

ACCREDITATION

The MEng degree is accredited by the Institute of Materials, Minerals and Mining (IOM3) on behalf of the UK Engineering Council, towards the achievement of Chartered Engineer status. Accreditation for 2025 entry is currently pending review.

MATERIALS RESEARCH

The final year of this course is a full-time eight-month research project.

RELATED PAGES

- Which Oxford colleges offer my course? ([/www.ox.ac.uk/admissions/undergraduate/colleges/which-oxford-colleges-offer-my-course](https://www.ox.ac.uk/admissions/undergraduate/colleges/which-oxford-colleges-offer-my-course))
- Interviews ([/www.ox.ac.uk/admissions/undergraduate/applying-to-oxford/guide/interviews](https://www.ox.ac.uk/admissions/undergraduate/applying-to-oxford/guide/interviews))
- Your academic year ([/www.ox.ac.uk/admissions/undergraduate/courses/academic-year](https://www.ox.ac.uk/admissions/undergraduate/courses/academic-year))
- UCAS (<http://www.ucas.com/>)
- Financial support ([/www.ox.ac.uk/admissions/undergraduate/fees-and-funding/2020support](https://www.ox.ac.uk/admissions/undergraduate/fees-and-funding/2020support))
- Foundation Year ([/www.ox.ac.uk/admissions/undergraduate/increasing-access/foundation-year](https://www.ox.ac.uk/admissions/undergraduate/increasing-access/foundation-year))

RELATED COURSES

- Chemistry ([/www.ox.ac.uk/admissions/undergraduate/courses/course-listing/chemistry](https://www.ox.ac.uk/admissions/undergraduate/courses/course-listing/chemistry))
- Earth Sciences (Geology) ([/www.ox.ac.uk/admissions/undergraduate/courses/course-listing/earth-sciences-geology](https://www.ox.ac.uk/admissions/undergraduate/courses/course-listing/earth-sciences-geology))
- Engineering Science ([/www.ox.ac.uk/admissions/undergraduate/courses/course-listing/engineering-science](https://www.ox.ac.uk/admissions/undergraduate/courses/course-listing/engineering-science))
- Foundation Year (CEMS) ([/www.ox.ac.uk/admissions/undergraduate/courses/course-listing/fyphysicalsciences](https://www.ox.ac.uk/admissions/undergraduate/courses/course-listing/fyphysicalsciences))
- Physics ([/www.ox.ac.uk/admissions/undergraduate/courses/course-listing/physics](https://www.ox.ac.uk/admissions/undergraduate/courses/course-listing/physics))

I would definitely recommend Oxford as a place to read Materials Science, as there are so many resources and the course is just so varied, with extra options such as languages or 'Building a Business'. Everyone really gets to know each other, and personally I have made some amazing friends on the course.'

Jodie

Unistats information

Discover Uni (<https://discoveruni.ox.ox.ac.uk/>) course data provides applicants with Unistats statistics about undergraduate life at Oxford for a particular undergraduate course.

Please select 'see course data' to view the full Unistats data for Materials Science.

Please note that there may be no data available if the number of course participants is very small.

Visit the Studying at Oxford ([/www.ox.ac.uk/admissions/undergraduate/courses/course-listing/materials-science#content-tab--6](https://www.ox.ac.uk/admissions/undergraduate/courses/course-listing/materials-science#content-tab--6)) section of this page for a more general insight into what studying here is likely to be like.

Materials Science

100% in work or doing further study 15 months after the course.

Data for Materials Science (4 years) (Full time) at Oxford University

For more official course information visit Discover Uni

See course data

A typical week

During Years 1 and 2, your work will be divided between lectures (about ten a week), tutorials/classes (about two a week) and practicals (two or three afternoons a week). Typically the work in preparation for each tutorial or class will be expected to take six to eight hours.

Year 3 starts with a two-week team design project, and about eight lectures and two classes/tutorials a week for the first two terms, while most of the third term is set aside for revision.

Year 4 consists of a supervised research project spanning three extended terms.

Lectures throughout Years 1-2 may be attended by the full year groups of around 40 undergraduate students. Normally Materials Year 3 Options Courses lectures will be attended by a smaller number of undergraduates plus a small number of research students.

Some Year 1 classes, which support the lectures, are attended by the full year group of around 40. Tutorials supporting the Year 1 and Year 2 Materials lecture courses are usually 2 to 4 students with a tutor. The Year 1 and 2 Mathematics lectures are supported by small group tutorial classes, typically up to 6 students per group. The Year 3 Options lectures are supported by small group tutorial classes, typically 8-12 students per group.

The majority of tutorials and lectures are delivered by staff who are Professors or Associate Professors, many of whom are world-leading experts with years of experience in teaching and research. Some teaching may also be delivered by post-doctoral researchers or postgraduate research students.

To find out more about how our teaching year is structured, visit our Academic Year ([/www.ox.ac.uk/admissions/undergraduate/courses/academic-year](https://www.ox.ac.uk/admissions/undergraduate/courses/academic-year)) page.

Course structure

Year 1

Courses	Assessment
- Physical foundations of materials - Structure and mechanical properties of materials - Transforming materials - Mathematics for materials science - Computing for materials science (MATLAB) - Crystallography classes - Practical course - Foreign language (optional)	First University examinations: four written papers; continual assessment components equivalent to a fifth paper

Year 2

Courses
- Lifecycle, processing and engineering of materials - Electronic properties of materials - Mechanical properties of materials - Structure and thermodynamics of materials - Foreign language (optional) - Supplementary subject (optional) - Mathematics



FEEL INSPIRED?

Why not have a look through the introductory reading for prospective students (<http://www.materials.ox.ac.uk/admissions/undergraduate/booklist.html>) on the department's website?

You might also like to read the New Scientist (<https://www.newscientist.com/>) magazine which may be available in your school or local library.

FOLLOW US ON SOCIAL MEDIA

Follow us on social media to get the most up-to-date application information throughout the year, and to hear from our students.



(<https://www.youtube.com/channel/UC-huTevVUqITKcD0Jcry1Jw>)



(<https://www.youtube.com/channel/UC-huTevVUqITKcD0Jcry1Jw>)



(<https://www.instagram.com/studyatoxford/>)



(<https://www.instagram.com/studyatoxford/>)



(<https://twitter.com/OxOutreach>)



(<https://twitter.com/OxOutreach>)

• Practical course • Entrepreneurship course • Industrial visits and talks • Communication skills
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Year 3

Courses	Assessment
• Materials options courses 1 • Materials options courses 2 • Team design project • Introduction to materials modelling module • Characterisation of materials or Atomistic modelling module • Industrial visits Examples of current options courses are available via the Materials Science website (http://www.materials.ox.ac.uk/admissions/undergraduate/) . At the start of Year 3 it is possible to transfer to a 3-year BA degree in Materials Science, graduating at the end of Year 3. Read essential further information about this on the Materials Science website (http://www.materials.ox.ac.uk/admissions/undergraduate/) . The BA is not accredited.	Final University examinations, Part I: six written papers; continual assessment components equivalent to a further two papers

Year 4

Research	Assessment
Research project (full-time). Additional elements include Project management, Ethics and sustainability, Presentation skills and an optional foreign language course. (Students are required to achieve 50% minimum in the Part I assessment in order to progress to Part II.) Examples of project titles are available via the Materials Science website (http://www.materials.ox.ac.uk/admissions/undergraduate/) .	Final University examinations, Part II (equivalent to 4 papers): project dissertation submitted and assessed; oral examination of project dissertation

Visit the Materials Science website (<http://www.materials.ox.ac.uk/admissions/undergraduate/>) for important additional detail on course content, progression and assessment.

This programme outline is for illustrative purposes and details may change from time to time.

The content and format of this course may change in some circumstances. Read further information about potential course changes (<http://www.ox.ac.uk/admissions/undergraduate/courses/important-legal-information-about-potential-course-changes>) .

Academic requirements

Qualification	Requirement
A-levels:	A*AA (including Mathematics and Physics, with an A* in either Mathematics, Physics or Chemistry)
Advanced Highers:	AA/AAB (with AA in Mathematics and Physics)
International Baccalaureate (IB):	40 (including core points) with 766 at HL (including Mathematics and Physics, with 7 at HL in either Mathematics, Physics or Chemistry)
Any other equivalent qualification:	View information on other UK qualifications (http://www.ox.ac.uk/admissions/undergraduate/courses/admission-requirements/uk-qualifications) , and international qualifications (http://www.ox.ac.uk/admissions/undergraduate/applying-to-oxford/for-international-students/international-qualifications) .

Wherever possible, your grades are considered in the context in which they have been achieved.

Read further information on how we use contextual data (<http://www.ox.ac.uk/admissions/undergraduate/applying-to-oxford/decisions/contextual-data>) .

Subject requirements

 Essential:	Candidates must be studying Maths and Physics to A-level or equivalent. GCSE-level Chemistry, or an equivalent, is also required.
 Recommended:	It is highly desirable to have Chemistry to A-level or equivalent, and if it is not studied to this level it is strongly recommended that it is studied to AS-level or equivalent.
 Helpful:	Further Mathematics (FM) can be helpful to students completing this degree programme but is not required for admission.

For candidates studying Maths, Physics, Chemistry and FM to A-level, normally our conditional offer will require A*AA in the first three (the A* in any of these) and an expectation that you continue to study FM. An analogous offer will apply if instead of FM you are studying a different A-level in addition to the first three.

If a practical component forms part of any of your science A-levels used to meet your offer, we expect you to pass it.

If English is not your first language you may also need to meet our English language requirements

(<http://www.ox.ac.uk/admissions/undergraduate/applying-to-oxford/for-international-students/ELR#content-tab--2>) .

If your personal or educational circumstances have meant you are unlikely to achieve the grades listed above for undergraduate study, but you still have a strong interest in the subject, then applying for Materials Science with a Foundation Year might be right for you. Visit the Foundation Year course pages (<http://www.ox.ac.uk/fyps>) for more details of academic requirements and eligibility.

Applying

All candidates must follow the application procedure as shown on our Applying to Oxford

(<http://www.ox.ac.uk/admissions/undergraduate/applying-to-oxford>) pages.

The following information gives specific details for students applying for this course.

Admissions test

Test:	PAT (http://www.ox.ac.uk/admissions/undergraduate/applying-to-oxford/tests/pat)
Test date:	28 October 2024

	15 August to 4 October 2024
Registration window:	

All candidates must take the Physics Admissions Test (PAT) (<http://www.ox.ac.uk/admissions/undergraduate/applying-to-oxford/guide/admissions-tests/pat>) as part of their application.

All the information you need to arrange to take your test as well as how best to prepare can be found on your test page (<http://www.ox.ac.uk/admissions/undergraduate/applying-to-oxford/guide/admissions-tests/booking>) .

Written work

You do not need to submit any written work when you apply for this course.

What are tutors looking for?

At interview, tutors are aware that students may not have encountered Materials Science at school or college. Tutors look for an ability to apply logical reasoning to problems in physical science, and an enthusiasm for thinking about new concepts in science and engineering.

Visit the Materials Science website for more detail on the selection criteria for this course (<http://www.materials.ox.ac.uk/admissions/undergraduate/admissions-criteria.html>) .

Careers

Many of our graduates apply their technical knowledge in the manufacturing industry, both in management and in research and development positions. Others enter the financial, consultancy and IT sectors. A significant proportion of graduates undertake research degrees in universities in the UK and abroad.

Katherine says: 'After leaving university I started work for Rolls-Royce (on aeroplanes, boats and power stations) as a graduate engineer, moving engineering roles within the company and around the globe every three months.'

We don't want anyone who has the academic ability to get a place to study here to be held back by their financial circumstances. To meet that aim, Oxford offers one of the most generous financial support packages available for UK students and this may be supplemented by support from your college.

Fees

Fee status	Annual Course fees
Home	£9,535
Overseas	£59,260

Further details about fee status eligibility (<https://www.ox.ac.uk/ugfeestatus>) can be found on the fee status webpage.

For more information please refer to our course fees page (<http://www.ox.ac.uk/admissions/undergraduate/fees-and-funding/course-fees>) . Fees will usually increase annually. For details, please see our guidance on likely increases to fees and charges. (<http://www.ox.ac.uk/admissions/undergraduate/fees-and-funding/changes-fees-and-charges>)

Living costs

Living costs at Oxford might be less than you'd expect, as our world-class resources (<http://www.ox.ac.uk/admissions/undergraduate/student-life/exceptional-education/learning-resources>) and college provision (<http://www.ox.ac.uk/admissions/undergraduate/colleges>) can help keep costs down.

Living costs for the academic year starting in 2025 are estimated to be between £1,425 and £2,035 for each month you are in Oxford. Our academic year is made up of three eight-week terms, so you would not usually need to be in Oxford for much more than six months of the year but may wish to budget over a nine-month period to ensure you also have sufficient funds during the holidays to meet essential costs. For further details please visit our living costs webpage (<http://www.ox.ac.uk/admissions/undergraduate/fees-and-funding/living-costs>) .

Financial support

Home	A tuition fee loan is available from the UK government to cover course fees in full for Home (UK, Irish nationals and other eligible students with UK citizens' rights - see below*) students undertaking their first undergraduate degree**, so you don't need to pay your course fees up front. In 2025 Oxford is offering one of the most generous bursary packages of any UK university to Home students with a family income of around £50,000 or less, with additional opportunities available to UK students from households with incomes of £32,500 or less. The UK government also provides living costs support to Home students from the UK and those with settled status who meet the residence requirements. *For courses starting on or after 1 August 2021, the UK government has confirmed that EU, other EEA, and Swiss Nationals will be eligible for student finance from the UK government if they have UK citizens' rights (i.e. if they have pre-settled or settled status, or if they are an Irish citizen covered by the Common Travel Area arrangement). The support you can access from the government will depend on your residency status. See further details (http://www.ox.ac.uk/admissions/undergraduate/fees-and-funding) .
Islands (Channel Islands and Isle of Man)	Islands students are entitled to different support to that of students from the rest of the UK. Please refer the links below for information on the support to you available from your funding agency: States of Jersey (http://www.gov.je/Working/Careers/16To19YearOlds/EnteringHigherEducation/FinancingHigherEducationCourses/FundingDegreeProfessionalQualifications/Pages/index.aspx) States of Guernsey (http://www.education.gg/unifunding) Isle of Man (https://www.gov.im/categories/education-training-and-careers/student-awards/financial-support/)
Overseas	Please refer to the 'Other Scholarships' section of our Oxford Bursaries and Scholarships page (http://www.ox.ac.uk/admissions/undergraduate/fees-and-funding/oxford-support#otherscholarships) .

**If you have studied at undergraduate level before and completed your course, you will be classed as an Equivalent or Lower Qualification student (ELQ) and won't be eligible to receive government or Oxford funding

Additional Fees and Charges Information for Materials Science

The fourth year is entirely devoted to research - a special feature of the Oxford MEng in Materials Science programme - consisting of a full-time individual research project under the supervision of a member staff.

This final year has three extended terms of 12 to 13 weeks and is 37 weeks in total so you will need to budget for higher living costs in the final year, as you will be required to be in Oxford for longer than the standard terms.

View the likely range of living costs (<http://www.ox.ac.uk/admissions/undergraduate/fees-and-funding/living-costs>) for an additional month in Oxford.

During the project you will learn how to:

- break down a complex problem
- design an experiment or model
- manage your time and project
- maintain systematic records
- present your work orally
- write a substantial report.

These research skills are transferable to other career paths and are valued highly by employers. On occasion significant scientific publications result from these projects.

Contextual information

Unistats course data from Discover Uni (<https://discoveruni.org.uk/>) provides applicants with statistics about a particular undergraduate course at Oxford. For a more holistic insight into what studying your chosen course here is likely to be like, we would encourage you to view the information below as well as to explore our website more widely.

The Oxford tutorial

College tutorials are central to teaching at Oxford. Typically, they take place in your college and are led by your academic tutor(s) who teach as well as do their own research. Students will also receive teaching in a variety of other ways, depending on the course. This will include lectures and classes, and may include laboratory work and fieldwork. However, tutorials offer a level of personalised attention from academic experts unavailable at most universities.

During tutorials (normally lasting an hour), college subject tutors will give you and one or two tutorial partners feedback on prepared work and cover a topic in depth. The other student(s) in your tutorials will be doing the same course as you. Such regular and rigorous academic discussion develops and facilitates learning in a way that isn't possible through lectures alone. Tutorials also allow for close progress monitoring so tutors can quickly provide additional support if necessary.

Read more about tutorials and an Oxford education (<https://www.ox.ac.uk/admissions/undergraduate/student-life/exceptional-education>)

College life

Our colleges are at the heart of Oxford's reputation as one of the best universities in the world.

- At Oxford, everyone is a member of a college as well as their subject department(s) and the University. Students therefore have both the benefits of belonging to a large, renowned institution and to a small and friendly academic community. Each college or hall is made up of academic and support staff, and students. Colleges provide a safe, supportive environment leaving you free to focus on your studies, enjoy time with friends and make the most of the huge variety of opportunities.
- Each college has a unique character, but generally their facilities are similar. Each one, large or small, will have the following essential facilities:
 - Porters' lodge (a staffed entrance and reception)
 - Dining hall
 - Lending library (often open 24/7 in term time)
 - Student accommodation
 - Tutors' teaching rooms
 - Chapel and/or music rooms
 - Laundry
 - Green spaces
 - Common room (known as the JCR).
- All first-year students are offered college accommodation either on the main site of their college or in a nearby college annexe. This means that your neighbours will also be 'freshers' and new to life at Oxford. This accommodation is guaranteed, so you don't need to worry about finding somewhere to live after accepting a place here, all of this is organised for you before you arrive.
- All colleges offer at least one further year of accommodation and some offer it for the entire duration of your degree. You may choose to take up the option to live in your college for the whole of your time at Oxford, or you might decide to arrange your own accommodation after your first year – perhaps because you want to live with friends from other colleges.
- While college academic tutors primarily support your academic development, you can also ask their advice on other things. Lots of other college staff including welfare officers help students settle in and are available to offer guidance on practical or health matters. Current students also actively support students in earlier years, sometimes as part of a college 'family' or as peer supporters trained by the University's Counselling Service.

Read more about Oxford colleges and how you choose (<https://www.ox.ac.uk/admissions/undergraduate/colleges/what-are-oxford-colleges>)