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Biochemistry (Molecular and Cellular) Course Information Sheet for entry in 2023

Biochemistry is the use of molecular methods to investigate, explain and manipulate biological processes. The study of life at the molecular level continues to undergo dynamic expansion, leading to ever-increasing insights into topics as various as the origin of life, the nature of disease and the development of individual organisms. Powerful new techniques, such as those of molecular genetics and NMR spectroscopy, enable us to analyse biological phenomena in more and more precise molecular terms. These studies have led to valuable developments in drug design and synthesis, forensic science, environmental monitoring and a whole range of other areas. Furthermore, advances in biochemistry are largely responsible for the breakdown of traditional disciplinary boundaries between cell biology, medicine, physics and chemistry.

The Biochemistry Department in Oxford is one of the largest in Europe, and is subdivided into the following research areas: Cell Biology; Development and Genetics; Chromosomal and RNA Biology; Infection and Disease Processes; Microbiology and Systems Biology; and Structural Biology and Molecular Biophysics. The department is extremely active in research, with about 300 postgraduate students and research staff. The breadth and excellence of these activities are reflected in the scope of the undergraduate course and underpin the teaching. The department has superb research and teaching facilities and excellent digital resources together with access to a wide range of online and print journals.

Research placements/international opportunities

An important aspect of the Oxford Biochemistry course is its fourth-year project, lasting 23 full-time weeks, which provides an opportunity to pursue an in-depth research project under the supervision of an academic member of staff. You choose a project, plan your research programme, design your experiments and present your results to other researchers in the field. The experience gained is much valued by employers. The project also gives you the opportunity to reflect on your aptitude and enthusiasm for a research career.

A wide choice of fourth-year research projects is available both within the Biochemistry Department and in related departments, such as Molecular Medicine, Clinical Biochemistry, Pathology and Pharmacology. It is also possible to carry out a self-organised project outside the University or indeed the UK

A typical week (Years 1-3)

During Years 1-3, your weekly timetable will be divided between lectures (typically eight to ten a week), tutorials and classes (1 to 3 a week) and practicals (averaging 1 full day a week). The remaining time will be spent on independent study (set reading or problem-solving exercises). Tutorials are usually 2-4 students and a tutor. Class sizes may vary depending on the topic

but are usually no more than 10-12 students. The ratio of demonstrators to students during practical sessions is usually about 1:12.

Most tutorials and lectures are delivered by staff who are tutors in their subjects, many of whom are world-leading experts with years of experience in teaching and research. Some tutorials and lectures may be delivered by postdoctoral researchers, while tutorials are occasionally delivered by postgraduate students. Departmental classes and practicals are supervised by a senior member of staff and largely delivered by postdoctoral researchers or postgraduate students who are studying at doctoral level.

Year 4

In your fourth year, you will choose and complete a project, lasting 23 full-time weeks (plus 2 for writing up), which will allow you to explore in detail, both laboratory-based research and specific recent advances in biochemistry. Under the supervision of a research group leader, you will design your own experiments, learn to plan research programmes and present your results and ideas – orally and in written form – to other workers in the field. The research project is written up in a dissertation in a form suitable for publication.

Alongside the first 3 weeks of the project there will be some advanced skills training. Apart from the project, you will have the task of writing an extended essay in the form of a review article. You will need to be in Oxford for 12 weeks in the first term, followed by a two-week break over Christmas. You will continue your project over the 8 weeks of the second term and first 3 weeks of the third term, submitting your project dissertation thereafter. You will also deliver an oral presentation on your project.

While the experience gained is much valued by employers, the project will also give you the opportunity to reflect on your aptitude and enthusiasm for a research career. Alongside the research project you will write a review article in an area of interest to you, with advice from an expert in this area.

The final degree class is derived from a combination of marks from courses taken in the second and third years, the assessment of the research project and the review article in the fourth year. This additional work in your final year means that you will graduate with an MBiochem – a master's degree – as well as invaluable research experience that will be excellent preparation for further study or a range of careers. The final degree class is derived from a combination of marks from the assessment on the work done in the second, third and fourth years.

To find out more about how our teaching year is structured, visit our [Academic Year](#) page.

Course structure

YEAR 1	
<p>COURSES</p> <p>Five courses are taken:</p> <ul style="list-style-type: none">• Cellular biochemistry• Molecular biochemistry• Mechanistic biochemistry• Physical biochemistry• Quantitative biochemistry	<p>ASSESSMENT</p> <p>First University examinations: five written papers; satisfactory practical record</p>
YEARS 2 AND 3	
<p>COURSES</p> <p>Teaching is done along five themes:</p> <ul style="list-style-type: none">• Tool boxes for biochemistry• Information transfer in biological systems• Molecular processes in the cell• Cellular chemistry• The cell in time and space	<p>ASSESSMENT</p> <p>Summative assessments (four, two-hour assessments) Final University examinations, Part I: seven written papers; satisfactory practical record</p>
YEAR 4 (EXTENDED FIRST TERM)	
<p>COURSES</p> <ul style="list-style-type: none">• Research project: This provides the opportunity to be embedded in a research group and carry out an in-depth research project (23 weeks full-time, plus two weeks for writing). Advanced skills training alongside the first three weeks of the project.• Coursework: Extended essay in the form of a review article	<p>ASSESSMENT</p> <p>Assessment of the research project, along with broader research skills displayed in the written work - the project dissertation and the review article.</p>

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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 registration. For further information, please see the University's [Terms and Conditions](#).

Fees

These annual fees are for full-time students who begin this undergraduate course here in 2023.

Information about how much fees and other costs may increase is set out in the University's Terms and Conditions.

Please note that while the University sets out its annual fees as a single figure, this is a combined figure for both your University and college fees. More information is provided in your [Terms and Conditions](#).

Fee status	Annual Course fees
Home (UK, Republic of Ireland, Channel Islands & Isle of Man)	£9,250
Overseas (including most EU students– see Note below)	£44,240

Note: Irish nationals living in the UK or Ireland, EU, other EEA, and Swiss nationals who have been granted settled or pre-settled status in the UK under the EU settlement scheme are eligible for 'Home fee' status and student loan support, subject to meeting residency requirements. We will contact you directly if we need further information from you to determine your fee status.

Please refer to the [Undergraduate fee status](#) pages for more information.

Living costs

Living costs for the academic year starting in 2023 are estimated to be between £1,290 and £1,840 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.

Living costs breakdown

	Per month		Total for 9 months	
	Lower range	Upper range	Lower range	Upper range
Food	£300	£470	£2,700	£4,230
Accommodation (including utilities)	£715	£860	£6,435	£7,740
Personal items	£180	£305	£1,620	£2,745

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	Per month		Total for 9 months	
Social activities	£40	£90	£360	£810
Study costs	£35	£80	£315	£720
Other	£20	£35	£180	£315
Total	£1,290	£1,840	£11,610	£16,560

In order to provide these likely living costs (which are rounded to the nearest £5), the University and the Oxford SU conducted a living costs survey to complement existing student expenditure data from a variety of sources, including the UK government's Student Income and Expenditure Survey and the National Union of Students (NUS).

The current economic climate and high national rate of inflation make it very hard to estimate potential changes to the cost of living over the next few years. When planning your finances for any future years of study in Oxford beyond 2023-24, it is suggested that you allow for potential increases in living expenses of 5% or more each year – although this rate may vary significantly depending on how the national economic situation develops. UK inflationary increases will be kept under review and the [Living costs webpage](#) updated.

[Additional Fees and Charges Information for Biochemistry \(Molecular and Cellular\)](#)

All students are required to wear laboratory coats and safety glasses during practicals. These can be purchased from the department at a subsidised cost of £10.

In the final year of the Biochemistry course, students work an extended first term to begin their research project. You will need to be in Oxford for 12 weeks in the first term, followed by a two-week break over Christmas. The extended terms mean that 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.