

PROGRAMME SPECIFICATION

Name, title and level of final qualification(s)	MSc Structural Molecular Biology PG Diploma Structural Molecular Biology (Level 7)
Name and title of any exit qualification(s)	Postgraduate Diploma Structural Molecular Biology Postgraduate Certificate Structural Molecular Biology MSc Biological Sciences (180 credits at L7 from the Department that would not otherwise lead to a named MSc).
Awarding Body	University of London
Teaching Institution(s)	Birkbeck, University of London
Home School/other teaching departments	School of Natural Sciences
Location of delivery	Central London
Language of delivery and assessment	English
Mode of study, length of study and normal start month	Full-time (1 year) Part-time (2 years) September, January (part-time only)
Professional, statutory or regulatory body	N/A
QAA subject benchmark group(s) Higher Education Credit Framework for England	N/A
Birkbeck Course Code	TMSBISIP_C (MSc) TPDBISIP_C (PG Dip) TBC (MSc, Jan start part-time)
HECoS Code	100354
Start date of programme	2001-02
Date of programme approval	2001
Date of last programme amendment approval	16 April 2019
Valid for academic year and cohort	2023-24
Date of last revision to document	25/05/23

Admissions requirements

A second-class honours degree (2:2) or above in a scientific subject. Less qualified students may be accepted if they have appropriate work experience, or through registration on the Postgraduate Diploma with the possibility of upgrading to the MSc after achieving appropriate results in the first set of examinations.

Applications are reviewed on their individual merits and your professional qualifications and/or relevant work experience will be taken into consideration positively. We actively support and encourage applications from mature learners.

Course aims

The Structural Molecular Biology programmes (MSc and PG Dip) aim to provide excellent training and education in the core knowledge and skills required by scientists concerned with structural molecular biology methods relating to protein and cellular structural analysis. The MSc consists of a combination of taught modules, some in-person and some delivered online, and an in-person research project in Structural Molecular Biology.

The programme covers 1) an in-depth introduction to the field of molecular bioscience 2) the core areas of structural biology needed to study biological molecules and more complex samples 3) molecular microbiology techniques 4) training in research skills, covering both a wide range of laboratory methods as well as statistics and data handling, and 5) an independent experimental research project within one of our research groups.

Students on the **Postgraduate Diploma** programme take any 120 credits from the 180 offered for the full MSc. The programme's blended learning model makes it very flexible in terms of attendance whilst offering plenty of hands-on experience in our teaching and world-class research labs.

The training includes the essential tools of structural molecular biology and their appropriate application. The key aims are to provide:

- An understanding of the science underlying key areas of structural molecular biology and its practical applications.
- Experience with a range of structural, biochemical and microbiological manipulations and instrumentation.
- An in-depth understanding in at least one specialised area in the discipline.
- Skills training in the analysis, manipulation and presentation of complex sets of data.
- Training in the use of a range of on-line databases to retrieve information on biological molecules and materials, and various software packages to analyse nucleic acid and protein datasets and structures.
- Practice in the written and oral presentation of information.
- A critical and professional approach to quality in structural biology.

Course structure

Level	Module Code	Module Title	Credit	Status	Teaching term(s)
Full-time – 1 year, October start					
7	SCBS095S7	*The Molecular Basis of Life	30	Comp	T1
7	SCBS089S7	Research Skills and Statistics	30	Comp	T1
7	SCBS092S7	*Molecular and Cellular Structure Determination	30	Comp	T2
7	SCBS096S7	Molecular Biology for Discovery Life Sciences	30	Comp	T2
7	SCBS097D7	Research Project	60	Core	T3
Part-time - 2 years, October start					
Year 1					
7	SCBS095S7	*The Molecular Basis of Life	30	Comp	T1
7	SCBS092S7	*Molecular and Cellular Structure Determination	30	Comp	T2
Year 2					
7	SCBS089S7	Research Skills and Statistics	30	Comp	T1
7	SCBS096S7	Molecular Biology for Discovery Life Sciences	30	Comp	T2
7	SCBS097D7	Research Project	60	Core	T3
Although the Research Project module does not appear officially until Year 2, part-time students will be able to select their project, and undertake some limited activities toward it, in Year 1. Some of that activity is likely to be confined to Term 3.					
Part-time – 2 years, January start					
Year 1 (Jan 24)					
7	SCBS092S7	*Molecular and Cellular Structure Determination	30	Comp	T2
7	SCBS095S7	*Molecular Basis of Life	30	Comp	T3
7	SCBS089S7	Research Skills and Statistics	30	Comp	T1
Year 2 (Jan 25)					
7	SCBS096S7	Molecular Biology for Discovery Life Sciences	30	Comp	T2
7	SCBS097D7	Research Project	60	Comp	T1
Although the Research Project (MSc) module does not appear officially until Autumn Term at the end of the second (calendar) year, students are expected to select their project and undertake some activities toward it in T3 of Year 2, and then complete the work and submit the project near the end of T1 in the final year.					

T1=Autumn term, T2=Spring term, T3=Summer Term

*These modules are taught online.

Core:	Module must be taken and passed by student
Compulsory:	Module must be taken but can be considered for compensated credit (see CAS regulations paragraph 24)
Option:	Student can choose to take this module

How you will learn

Your learning and teaching is organised to help you meet the learning outcomes (below) of the course. As a student, we expect you to be an active learner and to take responsibility for your learning, engaging with all of the material and sessions arranged for you.

Each course is divided into modules. You will find information on the virtual learning site (Moodle, see Academic Support below) about each of your modules: what to expect, the work you need to prepare, links to reading lists, information about how and when you will be assessed.

Your learning for this course will be organised around the activities outlined below.

Teaching on this course is a combination of lectures—which may be live in-person or live online as well as pre-recorded material—interactive seminars, problem-based classes (in-person or online), in-person taught laboratory and computer-based practicals, and in-person activities in research laboratories. Lectures are designed to provide you with an outline or overview of the topic, to engage you with the material and direct you to other resources. They are a springboard for your own learning. You will then put this into practice in the problem and practical based classes

How we will assess you

The course will use a variety of assessment methods. Assessment is used to enhance your learning rather than simply to test it. We use a variety of assessment methods. For most of the modules associated with this course, your assessment will be through the following types of assessment.

Initially quizzes and short written exercises to test and develop your knowledge and understanding. Longer reports based on practical activities you have completed to show your own interpretation of data, a substantial written project report. Oral and poster presentations.

Learning outcomes (what you can expect to achieve)

'Learning outcomes' indicate what you should be able to know or do at the end of your course. Providing them helps you to understand what your teachers will expect and also the learning requirements upon which you will be assessed.

On successful completion of this programme a student will be expected to be able to:

- 1) Demonstrate a sound knowledge and understanding of the science underlying key areas of structural molecular biology and its practical applications
- 2) Carry out molecular, biochemical and microbiological manipulations and operate analytical equipment
- 3) Apply skills to practical problems and, where appropriate develop new skills.
- 4) Perform appropriate calculations required for the interpretation and analysis of scientific data

- 5) Evaluate recent advances in the field of study.
- 6) Work safely and efficiently in a laboratory.
- 7) Access, retrieve and evaluate data from a variety of subject-specific and more generic databases and information sources.
- 8) Analyse, both numerically and qualitatively, as appropriate, a wide range of data types and present them in different ways.
- 9) Use molecular visualisation and sequence analysis tools.
- 10) Critically assess current literature in the discipline.
- 11) Formulate a research or method development plan and carry out the appropriate literature and data searches.
- 12) Select the most appropriate structural method.
- 13) Generate new data linked to a research question
- 14) Show critical reasoning.
- 15) Solve problems.
- 16) Formulate and test hypotheses.
- 17) Show independent reasoning and defense of ideas.
- 18) Use a wide range of different forms of IT confidently.
- 19) Work as part of a team both in person and *via* virtual interaction.
- 20) Manage time efficiently to balance the different aspects of the programme.
- 21) Present and communicate material and ideas clearly, knowledgably and in an engaging manner in both written and oral formats.
- 22) Learn independently.
- 23) Show a professionalism in your approach to structural molecular biology work

Careers and further study

You will find Structural Molecular Biology graduates in the following kinds of roles:

- Research, testing, product development and quality assurance laboratories within universities and industry setting.
- Healthcare sector in variety of roles
- Education (teaching and related roles)
- PhD programmes

Birkbeck offers a range of careers support to its students. You can find out more on [the careers pages of our website](#).

Academic regulations and course management

Birkbeck's academic regulations are contained in its [Common Award Scheme Regulations](#) and Policies published by year of application on the Birkbeck website.

Information such as how your programme is managed, the programme structure, who to contact if you have any questions about your modules or programme will be available on Moodle in the Programme's Key Information Section.

Support for your study

Your learning at Birkbeck is supported by your teaching team and other resources and people in the College there to help you with your study. Birkbeck uses a virtual learning environment called Moodle and each course has a dedicated Moodle page and there are further Moodle sites for each of your modules.

Birkbeck will introduce you to the Library and IT support, how to access materials online, including using Moodle, and provide you with an orientation which includes an online Moodle module to guide you through all of the support available. You will also be allocated a personal tutor and provided with information about learning support offered within your School and by the College.

[Please check our website for more information about student support services](#). This covers the whole of your time as a student with us including learning support and support for your wellbeing.

Quality and standards at Birkbeck

Birkbeck's courses are subject to our quality assurance procedures. This means that new courses must follow our design principles and meet the requirements of our academic regulations. Each new course or module is subject to a course approval process where the proposal is scrutinised by subject specialists, quality professionals and external representatives to ensure that it will offer an excellent student experience and meet the expectation of regulatory and other professional bodies.

You will be invited to participate in an online survey for each module you take. We take these surveys seriously and they are considered by the course team to develop both modules and the overall courses. Please take the time to complete any surveys you are sent as a student.

We conduct an annual process of reviewing our portfolio of courses which analyses student achievement, equality data and includes an action plan for each department to identify ongoing enhancements to our education, including changes made as a result of student feedback.

Our periodic review process is a regular check (usually every four years) on the courses by department with a specialist team including students.

Each course will have an external examiner associated with it who produces an annual report and any recommendations. Students can read the most recent external examiner reports on the course Moodle pages. Our courses are all subject to Birkbeck Baseline Standards for our Moodle module information. This supports the accessibility of our education including expectations of what information is provided online for students.

The information in this programme specification has been approved by the College's Academic Board and every effort has been made to ensure the accuracy of the information it contains.

Programme specifications are reviewed periodically. If any changes are made to courses, including core and/or compulsory modules, the relevant department is required to provide a revised programme specification. Students will be notified of any changes via Moodle.

Further information about specifications and an archive of programme specifications for the College's courses is [available online](#).

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