

## PROGRAMME SPECIFICATION

|                                                                                                         |                                                                                                                                                                                                               |
|---------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Name, title and level of final qualification(s)                                                         | <b>MSc Analytical Bioscience</b><br><b>PG Diploma Analytical Bioscience</b><br>(Level 7)                                                                                                                      |
| Name and title of any exit qualification(s)                                                             | Postgraduate Diploma Analytical Bioscience<br>Postgraduate Certificate Analytical Bioscience<br>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)<br>Part-time (2 years)<br>October, January (part-time only)                                                                                                                                |
| Professional, statutory or regulatory body                                                              | N/A                                                                                                                                                                                                           |
| <u>QAA subject benchmark group(s)</u><br><u>Higher Education Credit Framework for</u><br><u>England</u> | N/A                                                                                                                                                                                                           |
| UCAS code and URL                                                                                       | N/A                                                                                                                                                                                                           |
| Birkbeck Course Code                                                                                    | TMSABIOS_C MSc Analytical Bioscience<br>TPDABIOS_C PG Dip Analytical Bioscience<br>TBC MSc Analytical Bioscience Jan start (p/t)                                                                              |
| HECoS Code                                                                                              | 100345                                                                                                                                                                                                        |
| Start date of programme                                                                                 | 2010-11 (previously called MSc Bio-analysis)                                                                                                                                                                  |
| Date of programme approval                                                                              | 2010                                                                                                                                                                                                          |
| Date of last programme amendment approval                                                               | May 2023                                                                                                                                                                                                      |
| Valid for academic entry year                                                                           | <b>2026-27</b>                                                                                                                                                                                                |
| 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 Analytical Bioscience programmes (MSc and PG Dip) aim to provide excellent training and education in the core knowledge and skills required by scientists concerned with the analysis of chemical and bio-chemical substances at the interface of chemistry and biology. The MSc consists of a combination of taught modules and a research project in Analytical Bioscience. The programme covers 1) an in-depth introduction to the field of molecular bioscience 2) the core areas of analytical chemistry needed to study biological molecules 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 analytical bioscience and their appropriate application. The key aims are to provide:

- An understanding of the science underlying key areas of analytical bioscience and its practical applications.
- Experience with a range of chemical, 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 analytical science.

## Course structure

| Level                                                                                                                                                                                                                                                                                                                                              | Module Code | Module Title                                  | Credit | Status | Teaching term(s) |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------------------------------|--------|--------|------------------|
| <b>Full-time - 1 year, October start</b>                                                                                                                                                                                                                                                                                                           |             |                                               |        |        |                  |
| 7                                                                                                                                                                                                                                                                                                                                                  | SCBS095S7   | Molecular Basis of Life                       | 30     | Comp   | T1               |
| 7                                                                                                                                                                                                                                                                                                                                                  | SCBS089S7   | Research Skills and Statistics                | 30     | Comp   | T1               |
| 7                                                                                                                                                                                                                                                                                                                                                  | SCBS090S7   | Biochemical Analysis                          | 30     | Comp   | T2               |
| 7                                                                                                                                                                                                                                                                                                                                                  | SCBS096S7   | Molecular Biology for Discovery Life Sciences | 30     | Comp   | T2               |
| 7                                                                                                                                                                                                                                                                                                                                                  | SCBS097D7   | Research Project                              | 60     | Core   | T3               |
| <b>Part-time - 2 years, October start</b>                                                                                                                                                                                                                                                                                                          |             |                                               |        |        |                  |
| <b>Year 1</b>                                                                                                                                                                                                                                                                                                                                      |             |                                               |        |        |                  |
| 7                                                                                                                                                                                                                                                                                                                                                  | SCBS095S7   | Molecular Basis of Life                       | 30     | Comp   | T1               |
| 7                                                                                                                                                                                                                                                                                                                                                  | SCBS090S7   | Biochemical Analysis                          | 30     | Comp   | T2               |
| <b>Year 2</b>                                                                                                                                                                                                                                                                                                                                      |             |                                               |        |        |                  |
| 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 are expected to select their project and undertake some activities toward it in Year 1. The majority of that activity is likely to be confined to Term 3.                                                                                         |             |                                               |        |        |                  |
| <b>Part-time – 2 years, January start</b>                                                                                                                                                                                                                                                                                                          |             |                                               |        |        |                  |
| <b>Year 1</b>                                                                                                                                                                                                                                                                                                                                      |             |                                               |        |        |                  |
| 7                                                                                                                                                                                                                                                                                                                                                  | SCBS090S7   | Biochemical Analysis                          | 30     | Comp   | T2               |
| 7                                                                                                                                                                                                                                                                                                                                                  | SCBS095S7   | *Molecular Basis of Life                      | 30     | Comp   | T3               |
| 7                                                                                                                                                                                                                                                                                                                                                  | SCBS089S7   | Research Skills and Statistics                | 30     | Comp   | T1               |
| <b>Year 2</b>                                                                                                                                                                                                                                                                                                                                      |             |                                               |        |        |                  |
| 7                                                                                                                                                                                                                                                                                                                                                  | SCBS096S7   | Molecular Biology for Discovery Life Sciences | 30     | Comp   | T2               |
| 7                                                                                                                                                                                                                                                                                                                                                  | SCBS097D7   | Research Project                              | 60     | Core   | T1               |
| Although the Research Project (MSc) module does not appear officially until the final Autumn term of the second (calendar) year of study, January start students are expected to select their project and undertake some activities toward it in T3 of their Year 2, and then complete the work and submit the project near the end of Autumn term |             |                                               |        |        |                  |

\*This module is taught online.

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

Note: A January start entry point is only available to part-time students, who take the programme over two-calendar years from the start of the Spring term.

Note: students on the PG Diploma taken any 120 credits from the 180 credits offered on the full MSc programme.

|             |                                                                                                      |
|-------------|------------------------------------------------------------------------------------------------------|
| 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, both live and pre-recorded, interactive seminars, problem classes, taught laboratory and computer-based practicals and 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. 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) Carry out chemical, biochemical and microbiological manipulations and operate advanced analytical equipment.
- 2) Demonstrate a sound knowledge and understanding of the science underlying the key areas of analytical bioscience methodology and its practical applications.
- 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 analytical 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, knowledgeably and in an engaging manner in both written and oral formats.
- 22) Learn independently.
- 23) Show a professionalism in your approach to analytical bioscience work

### **Careers and further study**

You will find Analytical Bioscience 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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