Programme Specification

MSci Biochemistry **UCAS Code: C703**

For students entering Part 1 in September 2024 **UFBIOCHM**

UFBIOCHMWY

This document sets out key information about your Programme and forms part of your Terms and Conditions with the University of Reading.

Awarding Institution	University of Reading
Teaching Institution	University of Reading
Length of Programme	4 years
Length of Programme with placement/year abroad	MSci Biochemistry with Professional Experience - 5 years (UCAS Code: C704)
Accreditation	Royal Society of Biology
QAA Subject Benchmarking Group	QAA Subject Benchmark Statement – Biosciences

Programme information and content	
The MSci Biochemistry degree is a comprehensive four year programme that offers a holistic exploration of biochemistry, molecular biology and cutting-edge research methodologies. You will discover how practical advances in biochemistry provide the basis for human and veterinary medicine, environmental biochemistry, forensics and biotechnological innovation. The programme integrates significant practical experience including individual and collaborative projects. Through hands-on laboratory practicals, a solid working knowledge of core biochemical approaches, including their interpretation and analysis, will be developed throughout the programme. As you progress, you will explore advanced technologies in subjects including cellular and molecular biology, immunology, human genetics, protein structure and function, cardiovascular biology and neurosciences. A structured progression through the Biochemistry programme will build on your understanding of biochemistry and its application from Part 1 and will allow you to explore more specialist areas of interest in Part 2 and 3 of the programme. In Part 4 you will be challenged and stimulated during a research-intensive project. Overall, the programme will allow you to develop and apply discipline and transferable skills which will prepare you for postgraduate study or a wide variety of future careers.	
Part 1:	You will gain a broad introduction to biochemistry in your first year. This will be delivered in the form of core modules, covering the fundamental aspects of biochemistry, including molecular biology, cell biology, physiology and microbiology. You will also be taught essential laboratory skills, data handling/interpretation and other key transferable skills (e.g., communication, academic integrity, teamwork). The goal of the first year is to give you a strong foundation on which to develop your interests and build your future studies.

Part 2:	The second year will offer you the opportunity to pursue biochemistry in greater depth, using a combination of lectures and laboratory practicals. The modules will provide advanced knowledge in various areas, including cell and molecular biology, applied biochemistry, genetics, bioinformatics and computational biology. There will be a strong emphasis on the enhancement of practical and transferrable skills, including creativity, enterprise and commercial awareness.
Placement/Study abroad year:	You will have the opportunity to undertake a placement year and discover what it is like to work in a professional setting. This will allow you to develop your skills further, expand your network and enhance your career prospects. The school has numerous contacts within and beyond the UK, ranging from the pharmaceutical sector to governmental organisations. Students can express their interest to the school and receive guidance and support throughout the placement application process.
Part 3:	The third year of the programme places a strong emphasis on the application of knowledge and skills. Alongside chosen modules from across the breadth of biochemistry, the highlight of the final year is the opportunity to work alongside an expert in the field on a unique biochemical-related research project. This capstone experience will allow you to develop an advanced understanding of your chosen topic and apply the skills that you have acquired from your first and second year.
Part 4:	In the fourth year of the programme you will gain advanced scientific and technical skills to solve complex research questions. You will undertake a 80-credit research-intensive project over a period of five months. This substantial research project will provide you with the opportunity to independently plan, execute, analyse and communicate a research project in a specialised area of biochemistry-related research. You will develop valuable transferable skills that are highly desirable for employers, offering you excellent preparation for postgraduate research or a wide variety of future careers.

Programme Learning Outcomes - MSci Biochemistry

During the course of the Programme, you will have the opportunity to develop a range of skills, knowledge and attributes (known as learning outcomes) For this programme, these are:

	Learning outcomes
1	Describe and explain the fundamental concepts of biochemistry and apply biochemical principles to medical and environmental problems.
2	Apply an integrated view of biochemical concepts to biological and molecular events.
3	Contribute to debates in contemporary biochemistry and related fields.

4	Analyse and propose evidence-based solutions to biochemistry-based problems.
5	Effectively communicate subject-specific knowledge, concepts and research outputs to technical and non-technical audiences using a range of multimedia formats
6	Organize and manage workload to complete tasks and projects effectively, both independently and collaboratively as part of a team
7	Analyse experimental and observational biological data using relevant statistical tests/analytical tools and interpret the results, recognising the limitations of data collection and statistical methodology
8	Search for, critically analyse, integrate, synthesise and evaluate scientific literature to draw conclusions, make hypotheses and suggest solutions.
9	Safely and competently use a range of practical laboratory skills and techniques to generate accurate records and robust datasets.
10	Use an evidence-based approach to propose realistic solutions for complex biological problems, recognising the nature of scientific knowledge and its development in light of continued scientific advances.
11	Independently design, execute, and critically evaluate complex research within a biochemistry-related field.
12	Employ diverse research methodologies, data collection techniques, and analytical tools, exhibiting a high level of adaptability and innovation in solving research problems.

You will be expected to engage in learning activities to achieve these Programme learning outcomes. Assessment of your modules will reflect these learning outcomes and test how far you have met the requirements for your degree.

To pass the Programme, you will be required to meet the progression or accreditation and award criteria set out below.

In addition to the learning outcomes stated above if you are on a placement or study abroad programme you will have the opportunity to develop the following learning outcome:

Additional Learning outcomes
Placement By the end of the Placement Year Programme, students will have explored and developed their professional experience, skills and knowledge, contributing significantly towards their continuous learning and career prospects as graduates.

Module information

Each part comprises 120 credits, allocated across a range of compulsory and optional modules as shown below. Compulsory modules are listed.

Part 1 Modules:

Module	Name	Credits	Level
BI1AP3	Anatomy and Physiology	20	4

BI1CMP1	Cellular and Molecular Principles of Life	20	4
BI1FB2	Fundamentals of Biochemistry	20	4
BI1FM1	Fundamentals of Microbiology	20	4
CH1GCB	General Chemistry B	20	4

The remaining 20 credits will be made up of an optional module from selected modules from the School of Biological Sciences or modules from an approved list, subject to timetabling constraints.

Part 2 Modules:

Module	Name	Credits	Level
BI2AB1	Applied Biochemistry: from Disease to Diagnostics	20	5
BI2BCB2	Bioinformatics and Computational Biology	20	5
BI2CM1	Advanced Studies in Cellular and Molecular Biology	20	5
BI2MG2	Medical Genetics	20	5
BI2RP3	Research and Professional Skills	20	5

The remaining 20 credits will be made up of an optional module from selected modules from the School of Biological Sciences or modules from an approved list, subject to timetabling constraints.

Modules during a placement year or study year (if applicable):

Module	Name	Credits	Level
BI2PEX	Professional Experience	120	5

Students may be permitted to undertake a placement year between Part 2 and Part 3 of the programme. In such cases students will transfer to a 4-year programme. The placement year should not normally be shorter than nine months full-time.

If you take a year-long placement or study abroad, Part 3 as described below may be subject to variation.

Part 3 Modules:

Module	Name	Credits	Level
BI3ART1	Advanced Research Techniques	20	6
BI3IB2	Integrated Biochemistry	20	6
BI3RP3	Research Project	40	6

The remaining 40 credits will be made up of optional modules from selected modules from the School of Biological Sciences or modules from an approved list, subject to timetabling constraints.

Part 4 modules:

Module	Name	Credits	Level
BI4APS1	Critical Analysis and Problem Solving	20	7
BI4ARP	Advanced Research Project	80	7
BI4PLE1	Project Planning, Laboratory Skills and Experimental Design	20	7

Placement opportunities

Placements:

You may be provided with the opportunity to undertake a credit-bearing placement as part of your Programme. This will form all or part of an optional module. You will be required to find and secure a placement opportunity, with the support of the University

Study Abroad:

You may be provided with the opportunity to undertake a Study Abroad placement during your Programme. This is subject to you meeting academic conditions detailed in the Programme Handbook, including obtaining the relevant permissions from your School, and the availability of a suitable Study Abroad placement. If you undertake a Study Abroad placement, further arrangements will be discussed and agreed with you.

Optional modules:

The optional modules available can vary from year to year. An indicative list of the range of optional modules for your programme can be found online in the Course Catalogue. Details of optional modules for each part, including any additional costs associated with the optional modules, will be made available to you prior to the beginning of the Part in which they are to be taken and you will be given an opportunity to express interest in the optional modules that you would like to take. Entry to optional modules will be at the discretion of the University and subject to availability and may be subject to pre-requisites, such as completion of another module. Although the University tries to ensure you are able to take the optional modules in which you have expressed interest this cannot be guaranteed.

Teaching and learning delivery:

You will be taught through lectures, seminars/tutorials, laboratory practical sessions and supervised project work, depending on the modules you choose.

The contact hours for your Programme are dependent on module choice. Information about module contact hours can be located in the relevant module description.

Elements of your programme will be delivered via digital technology.

The scheduled teaching and learning activity hours and amount of technology enhanced learning activity for your programme will depend upon your module combination. In addition, you will undertake some self-scheduled teaching and learning activities, designed by and/or involving staff, which give some flexibility for you to choose when to complete them. You will also be expected to undertake guided independent study. Information about module study hours including contact hours and the amount of independent study which a student is normally expected to undertake for a module is indicated in the relevant module description.

Accreditation details

This programme is accredited by the Royal Society of Biology

Assessment

The programme will be assessed through a combination of written examinations, coursework (including class tests) and oral examinations. Further information is contained in the individual module descriptions. .

Progression

Part 1
To achieve a threshold performance at Part 1, a student will normally be required to:
(i) Obtain an overall average of 40% over 120 credits taken in Part 1;
(ii) Obtain a mark of at least 40% in individual modules amounting to not less than 80 credits taken in Part 1; and
(iii) Obtain marks of at least 30% in modules amounting to 120 credits.

In order to progress from Part 1 to Part 2, a student must achieve a threshold performance.

The achievement of a threshold performance at Part 1 qualifies a student for a Certificate of Higher Education if they leave the University before completing the subsequent Part.

Transferring from a Joint Honours to a Single Honours programme

Students are able to transfer from a Joint Honours to a Single Honours programme in one of their joint subject areas at the end of Part 1, subject to fulfilling the Part 1 University Threshold Standard, achieving marks of at least 40% in at least 40 credits of modules in the subject to which they wish to transfer, and fulfilling any programme-specific progression rules for the Part 1 Single Honours Programme to which they wish to transfer.

Students who transfer from a Joint Honours to a Single Honours programme may not have taken all of the Part 1 modules listed in the Single Honours Programme Specification. The modules which they have taken will be shown on their Diploma Supplement.

Part 2
To achieve a threshold performance at Part 2, a student shall normally be required to:

(i) Obtain a weighted average of 40% over 120 credits taken in Part 2; and
(ii) Obtain marks of at least 40% in individual modules amounting to at least 80 credits taken in Part 2; and
(iii) Obtain marks of at least 30% in individual modules amounting to at least 120 credits, except that a mark below 30% may be condoned in no more than 20 credits of modules owned by the Department of Mathematics and Statistics.

In order to progress from Part 2 to Part 3, a student must achieve a threshold performance; and

(v) an overall average of 50% over 120 credits taken in Part 2 (of which not less than 100 credits should normally be at level 5 or above).

The achievement of a threshold performance at Part 2 qualifies a student for a Diploma of Higher Education if they leave the University before completing the subsequent Part.

Professional/placement year

Students are required to pass the professional placement year/study abroad year in order to progress on the programme which incorporates the professional placement year/study abroad year. Students who fail the professional placement year/study abroad year transfer to the non-placement year version of the programme.

Part 3

To achieve a threshold performance at Part 3, a student shall normally be required to:

(i) achieve an average of 40% over 120 credits taken in Part 3 and

(ii) obtain a mark of at least 40% in individual modules amounting to not less than 80 credits taken in Part 3.

In order to progress from Part 3 to Part 4, a student must achieve a threshold performance; and

(iii) a mark of at least 40% in BI3RP3.

Students who do not meet the above requirements to progress to Part 4, but who:

(i) meet the requirements described in Section 17 of the Assessment Handbook: Bachelor's (for cohorts entering in 2022/23 and onwards) (see, in particular, section 17.5); and

(ii) gain a mark of at least 40% in BI3RP3

Will be eligible for the BSc Biochemistry. The classification for this exit award will be based upon an overall weighted average ratio of 1:2 (Part 2: Part 3).

Classification

Bachelors' degrees
The University's honours classification scheme is based on the following:

Mark Interpretation
70% - 100% First class
60% - 69% Upper Second class
50% - 59% Lower Second class
40% - 49% Third class
35% - 39% Below Honours Standard
0% - 34% Fail

The weighting of the Parts/Years in the calculation of the degree classification is:

Part 2: 20%

Placement/Study Abroad Year: not included in the classification

Part 3: 40%

Part 4: 40%

The classification method is given in detail in Section 18 of the Assessment Handbook (see, in particular, section 18.5).

Students who do not meet the above Part 4 requirements for obtaining the MSci Biochemistry degree but who have achieved all previous progression requirements will be eligible for the award of BSc Biochemistry. The classification for this exit award will be based upon an overall weighted average ratio of 1:2 (Part 2: Part 3).

Additional costs of the programme

Participation in any residential field based optional modules offered, is subject to fees payable by the student.

If you undertake a Placement Year, associated costs will vary according to the nature and location of the placement and/or the study abroad host institution, and individual travel and subsistence arrangements.

Costs are indicative and may vary according to optional modules chosen and are subject to inflation and other price fluctuations. Estimates were calculated in 2024.

For further information about your Programme please refer to the Programme Handbook and the relevant module descriptions, which are available at http://www.reading.ac.uk/module/. The Programme Handbook and the relevant module descriptions do not form part of your Terms and Conditions with the University of Reading.

MSci Biochemistry for students entering Part 1 in session 2024/25
18 December 2024