

## Programme Specification

### MSci Medical Science

For students entering Part 1 in September 2024

UCAS Code: C753

UFMEDSCM

UFMEDSCMWY

**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 Medical Science with Professional Experience - 5 years (UCAS Code: C754)
Accreditation	Royal Society of Biology
QAA Subject Benchmarking Group	QAA Subject Benchmark Statement – Biosciences

### Programme information and content

The MSci Medical Science programme is an integrated and advanced course designed to provide you with a thorough understanding of the biomedical sciences and their applications in healthcare. This programme will combine undergraduate and postgraduate study to deliver a flexible and comprehensive curriculum that covers the fundamental principles of human biology, disease mechanisms, clinical medicine and medical research. Throughout this programme, you will delve into subjects such as human anatomy, physiology, pathology and genetics, gaining a deep understanding of how the human body functions in health and disease. You will explore the latest advancements in medical science, including emerging technologies and treatments, and learn how to apply this knowledge to address current and future healthcare challenges. A strong emphasis on research and practical experience is the hallmark of the MSci Medical Science programme. You will engage in hands-on laboratory work, utilising state-of-the-art equipment and techniques to conduct experiments and investigations. In the final year, you will undertake a significant, independent research project, working alongside experienced academics on cutting-edge medical research that can contribute to the advancements in the field. Aside from research, you will have opportunity to develop your professional and employability skills by building a skill portfolio, participate in placements and attend employer-led sessions. Graduates from this programme will be highly competitive in the job market, equipped with advanced knowledge and skills that are highly valued by employers and are well-positioned for further academic and professional advancement (especially in medical research, healthcare, pharmaceuticals and biotechnology).

Part 1:	The main aim of Part 1 is to give you the core foundation knowledge on which the advanced medical subjects will build upon in your future studies. You will learn about the biochemical, molecular and cell biology basis of life, study the fundamentals of microbiology, discover the anatomy and physiology of the human body and explore major human
---------	--

	<p>pathologies. You can choose to focus on , the fundamental principles of physics for medicine or delve deeper into the biochemistry. You will gain practical laboratory experience including performing basic laboratory techniques and histology practicals . You will also develop essential transferable skills (such as study and writing skills, mathematical skills, statistical analysis, data handling/interpretation, communication, academic integrity and teamwork) through activities embedded in the core modules.</p>
Part 2:	<p>In Part 2, you will be able to pursue your interests and career aspirations. by expanding your understanding of the fundamental genetic and molecular processes that underpin the normal function/dysfunction of cells and tissues. You can expand your knowledge on medical science subjects, ranging from haematology (and immunology to clinical biochemistry. You will also continue to enhance your practical, transferrable and employability skills in your chosen modules.</p>
Placement/Study abroad year:	<p>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 to healthcare sectors. Students can express their interest to the school and receive guidance and support throughout the placement application process.</p>
Part 3:	<p>In Part 3 of the programme there is a strong emphasis on the application of gained knowledge and skills. You will continue to create a personalised programme that aligns with your interests and career goals by choosing from a wide range of options at the frontier of knowledge, such as cardiovascular biology, cancer, neurobiology and pathogenic bacteria/viruses. The highlight of the final year is the opportunity to work alongside an expert in the medical research field on a novel 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. This will allow you to further develop your personal and professional identity as a medical scientist.</p>
Part 4:	<p>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 medical 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.</p>

## Programme Learning Outcomes - MSci Medical Science

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:

	<b>Learning outcomes</b>
1	Describe and explain the key concepts and principles in medical science, including human anatomy, physiology, biochemistry, genetics, and molecular biology.
2	Describe and explain the biological mechanisms underlying health and disease, including the aetiology, pathogenesis, and progression of various medical conditions.
3	Explain and critically evaluate the latest advancements in biotechnology, including the development of novel diagnostic tools and therapeutic agents.
4	Discuss global health issues and the role of medical science in addressing global health challenges.
5	Effectively communicate subject specific knowledge, concepts and research outputs to technical and non-technical audiences using a range of multimedia formats.
6	Analyse experimental and observational data using relevant statistical tests/ analytical tools and interpret the results, recognizing the limitation of data collection and statistical methodology.
7	Organise and manage workload to complete tasks and projects effectively, both independently and collaboratively as part of a team.
8	Search for, critically analyse, integrate, synthesis and evaluate scientific literature to draw conclusions, make hypotheses and suggest solutions.
9	Safely and competently use a range of practical laboratory and/or field skills and techniques to generate accurate records and robust datasets.
10	Use a creative, innovative and evidence-based approach to propose realistic solutions for complex biological and real-world problems in the light of continued scientific advances.
11	Independently design, execute, and critically evaluate complex research within medical science.
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

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
BI1FM1	Fundamentals of Microbiology	20	4
BI1HP2	Human Pathology	20	4

The remaining 40 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
BI2CM1	Advanced Studies in Cellular and Molecular Biology	20	5
BI2MG2	Medical Genetics	20	5
BI2RP3	Research and Professional Skills	20	5

The remaining 60 credits will be made up of an optional module from selected modules from the School of Biological Sciences or modules from an approved list.

#### 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 5-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
BI3RP3	Research Project	40	6

The remaining 80 credits will be made up of optional modules from selected modules from the School of Biological Sciences or modules from an approved list.

**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

- (iv) a threshold performance at Part 2; and
- (v) achieve 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 (i) a mark of at least 40% in BI3RP3;

Students who do not meet the 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 award of BSc Medical Science.

#### *Part 4*

To obtain the MSci Medical Science degree, a student shall normally be required to have satisfied all of the above progression requirements and to achieve at least 80 credits in Part 4 with a mark of at least 50%.

Students who do not meet the above Part 4 requirements for obtaining the MSci Medical Science degree but who have achieved all previous progression requirements will be eligible for the award of BSc Medical Science. 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:

Integrated Masters Programmes (MEng, MMath, MChem etc.)

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).

#### **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 Medical Science for students entering Part 1 in session 2024/25

18 December 2024

© **The University of Reading 2024**