

Programme Specification

BSc Medical Science

For students entering Part 1 in September 2024

UCAS Code: C750

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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	3 years
Length of Programme with placement/year abroad	BSc Medical Science (students from Taylor's University) - 3 years BSc Medical Science with Professional Experience (students from Taylor's University) - 4 years BSc Medical Science with Professional Experience - 4 years (UCAS Code: C752)
Accreditation	Royal Society of Biology
QAA Subject Benchmarking Group	QAA Subject Benchmark Statement - Biosciences

Programme information and content

This programme aims to produce graduates who have the knowledge, skills and professional behaviours to work as medical scientists in a wide range of healthcare roles and/or to be prepared for further higher education postgraduate courses and academia and to have the personal and intellectual attributes necessary for life-long professional development. You will study human anatomy and physiology and how it can be used in both diagnosis and treatment of disease. There will be an opportunity to study a range of diseases including cancer, cardiovascular disease, pathological infections and neurological disorders, all of which present major challenges to global health. Through practical experience, you will develop knowledge and applied laboratory skills on the scientific methods used in medical research and on the diagnostic tools employed in clinical settings to study and identify disease. There will be opportunities to evaluate imaging diagnostics for cancers and understand the principles of radiotherapy in the clinical context. You will have the opportunity to develop clinical skills in simulated situations within the clinical suite and perform virtual human dissection using the 'Anatmage' tables. Graduates of Medical Sciences will be prepared to embark on a variety of careers including medical or pharmaceutical research, pathology and diagnosis, clinical trials, data management, drug development, public health and infection control, scientific and medical writing and many more within the health sector. Some may choose to go on to further study in clinical or scientific medicine.

Part 1:	<p>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, and will study the fundamentals of microbiology. You will be introduced to the anatomy and physiology of the human body and the major human pathologies affecting mankind. You will gain practical laboratory experience including performing basic laboratory techniques, and histology practicals and learn key clinical skills. You will additionally 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 expand your understanding of the fundamental molecular and cell biology processes that underpin the normal function of cells and tissues. You will gain specific knowledge on core medical science subjects, such as medical genetics, haematology (covering the study, diagnosis and treatment of blood disorders) and immunology (that considers the human defence system against pathogen attacks). You will be presented with a wide range of case studies to fully contextualise their learning. This knowledge will be applied in clinical settings where diagnosis and treatment options will be covered. You will also continue to enhance their clinical, practical and transferrable skills.</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 have the opportunity combine your knowledge to understand how cancer is imaged, staged and treated using radiotherapy. In Part 3, you will be able 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>

Programme Learning Outcomes - BSc 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:

	Learning outcomes
1	Describe and explain the basic components and processes of human biology, physiology and anatomy in the context of health, and explain how cellular and molecular processes are integrated to support functional tissues, organs and organ systems which maintain the healthy body.
2	Explain and critically evaluate how defects in cellular, molecular and physiological processes lead to disease and discuss and articulate the complex relationship between disease mechanisms, disease progress and clinical outcome.
3	Articulate the aetiology of complex medical conditions with respect to genetic factors, environment, and their interaction.
4	Identify and discuss the clinical features and clinical course of common and complex medical conditions with respect to genetic factors, the environment, and their interaction.
5	Demonstrate how common medical conditions are diagnosed, managed, and treated at the patient level, with reference to appropriate clinical case studies.
6	Describe and explain how common medical conditions are treated, managed, or prevented from a public health standpoint, and critically assess how demographic and population-based factors influence risk/ severity of a disorder.
7	Effectively communicate subject specific knowledge, concepts and research outputs to technical and non-technical audiences using a range of multimedia formats.
8	Analyse experimental and observational data using relevant statistical tests/ analytical tools and interpret the results, recognizing the limitation of data collection and statistical methodology.
9	Organise and manage workload to complete tasks and projects effectively, both independently and collaboratively as part of a team.
10	Search for, critically analyse, integrate, synthesis and evaluate scientific literature to draw conclusions, make hypotheses and suggest solutions.
11	Safely and competently use a range of practical laboratory and/or field skills and techniques to generate accurate records and robust datasets.
12	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.

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:

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
BI1PE2	Essentials of Physics for Medicine	20	4
PM1PS1	Professional Skills for Healthcare 1	20	4
Part 2 Modules:			
Module	Name	Credits	Level
BI2HI1	Haematology and Immunology	20	5
BI2MG2	Medical Genetics	20	5
BI2PPI1	Principles of Physical Interventions in Medicine	20	5
BI2RPS3	Research and Professional Skills	20	5
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.			
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
BI3DIR1	Diagnostic Imaging and Radiotherapy for Cancer	20	6
BI3RP3	Research Project	40	6

The remaining 60 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.

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.

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.

In order to be eligible for the BSc Medical Science, students must 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

(i) must gain a mark of at least 40% in BI3RP3.

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:

Three year programmes:

Part 2: one-third

Part 3: two-thirds

Four year programmes, including study abroad

Part 2: one-third

Study abroad: Year abroad not included in the classification

Part 3: two-thirds

The classification method is given in detail in:

Bachelor's (for cohorts entering in 2022/23 and onwards) (see, in particular, section 17.5)

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.

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

18 February 2025

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