**UNIVERSITY OF BRADFORD**  
Faculty of Life Sciences  
School of Medical Sciences  
Programme title: MSc Biomedical Science

<table>
<thead>
<tr>
<th>Awarding and teaching institution:</th>
<th>University of Bradford</th>
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</thead>
<tbody>
<tr>
<td>Final and interim awards:</td>
<td>Master of Science</td>
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<tr>
<td></td>
<td>Postgraduate Diploma</td>
</tr>
<tr>
<td></td>
<td>[Framework for Higher Education Qualifications level 7]</td>
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<tr>
<td>Programme title</td>
<td>Biomedical Science</td>
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<tr>
<td>Programme accredited by:</td>
<td>Institute of Biomedical Science (IBMS)</td>
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<tr>
<td>Relevant subject benchmark statement(s):</td>
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<tr>
<td>Duration:</td>
<td>1 year, full-time</td>
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<tr>
<td>UCAS code:</td>
<td>N/A</td>
</tr>
<tr>
<td>FHEQ Level:</td>
<td>7</td>
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<td>Approved:</td>
<td>August 2014</td>
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**Introduction**

Biomedical Sciences involves studying the scientific basis of human disease, including aspects of diagnosis and therapeutic intervention. There is a high demand, in healthcare settings, academia and industry for graduates with advanced training in theoretical and practical skills required in research, education, regulatory approval, diagnostic services and the commercialization of biomedical information. On this programme teaching is strongly research-led and the majority of academic staff who teach on the programme are active researchers who publish in their own specialist subject areas. Consequently, the programme will provide opportunities for students to experience modern biomedical techniques and to study alongside established research teams in their state-of-the-art research laboratories. Students will be expected to develop key skills that are required by scientists to investigate the pathophysiology of human disease and there is considerable student choice in which biomedical science disciplines are studied during the programme. Through these choices it will allow students to map a path through the programme that allows them either to cover a greater number of biomedical subject areas or to develop greater specialism.
within either cancer biology, medical biochemistry, medical microbiology or medical cell biology. A substantial research project will be undertaken in a contemporary area of the student’s chosen biomedical discipline.

In addition the programme will develop your skills in areas such as scientific communication, critical review and analytical thinking, complex problem solving, reflective practice and laboratory/sample management. Thus, the programme will develop research and analytical skills, management skills and personal transferable skills whilst enhancing autonomous learning.

It is important to note that completion of this programme does not automatically qualify graduates to become registered biomedical scientists, since in the UK this is now a legally protected title for individuals who are registered with the Health and Care Professions Council (HCPC). HCPC registration requires completion of an approved academic programme plus a period of training in an approved laboratory to develop appropriate practical skills and ensure competence. However, it is anticipated that the programme will be acceptable in partial fulfilment for award of the title of Chartered Scientist.

The aims and outcome statements have been referenced to the University's Learning and Teaching Strategy, to the QAA Framework for Higher Education Qualifications in England, Wales and Northern Ireland (2008) and to the QAA's Master’s Degree Characteristics (2010) document.

**Programme Aims**

The programme is intended to:

- Enhance learning by providing a choice of study options to suit your interests and/or career aspirations;
- Enable you to develop a systematic understanding and critical awareness of current issues within appropriate branches of biomedical science;
- Develop competence in the design and execution of research and the interpretation of scientific data;
- Enable you to appreciate the advantages, limitations and applications of a range of biomedical techniques;
- Provide learning opportunities to enable critical thinking to develop autonomous and lifelong learning;
- Develop and enhance your ability in a range of personal and key transferable skills;
- Enhance skills associated with the communication of scientific data;
• Provide knowledge of sample processing and laboratory management within;
• the context of biomedical science;
• Deliver a flexible programme of postgraduate study in biomedical science to students from diverse cultural and educational backgrounds.

Programme Learning Outcomes (LO)

When you have completed the programme you will be able to:

LO1: Demonstrate a systematic understanding and critical awareness of current techniques and issues in appropriate branches of biomedical science
LO2: Critically evaluate and communicate scientific data
LO3: Critically evaluate and appraise experimental techniques.
LO4: Write, interpret and peer review scientific reports.
LO5: Write a scientific grant proposal.
LO6: Prepare and present a scientific poster based upon research data
LO7: Select and use appropriate statistical methods for analysing research data
LO8: Demonstrate understanding of a range of issues relating to sample and laboratory management
LO9: Effectively use reflective practice to modify your personal and professional activities
LO10: Demonstrate self-direction and originality in implementing a research project.

Curriculum

Postgraduate Diploma

<table>
<thead>
<tr>
<th>Module Code</th>
<th>Module Title</th>
<th>Type</th>
<th>Credits</th>
<th>Level</th>
<th>Study period</th>
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<tbody>
<tr>
<td>AR-7001M</td>
<td>Maths &amp; Quantitative Methods</td>
<td>C</td>
<td>10</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>BM-9146V</td>
<td>Personal &amp; Professional Development in Biomedical Science</td>
<td>C</td>
<td>30</td>
<td>7</td>
<td>1 + 2</td>
</tr>
<tr>
<td>BM-9145D</td>
<td>Applied &amp; Diagnostic Pathology</td>
<td>C</td>
<td>20</td>
<td>7</td>
<td>1</td>
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<tr>
<td>BM-9132L</td>
<td>Research &amp; Analytical Methods</td>
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<td>7</td>
<td>1 + 2</td>
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<tr>
<td>BM-9133D</td>
<td>Experimental Design</td>
<td>C</td>
<td>20</td>
<td>7</td>
<td>2</td>
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</table>
If you have achieved the regulatory credit points at Level 7 and have achieved learning outcomes LO 1-9, you may exit the programme and are eligible for the award of Postgraduate Diploma.

**Masters**

<table>
<thead>
<tr>
<th>Module Code</th>
<th>Module Title</th>
<th>Type</th>
<th>Credits</th>
<th>Level</th>
<th>Study period</th>
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<tr>
<td>AR-7001M</td>
<td>Maths &amp; Quantitative Methods</td>
<td>C</td>
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<tr>
<td>BM-9133D</td>
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<td>20</td>
<td>7</td>
<td>2</td>
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<tr>
<td>BM-9129Z</td>
<td>Research Project</td>
<td>C</td>
<td>60</td>
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If you have achieved the regulatory credit points at Level 7 and have achieved learning outcomes LO 1-10, you are eligible for the award of Master of Science.

The MSc in Biomedical Science programme consists of 120 taught Credits (60 credits in each of semesters 1 & 2) and a substantial 60 credit research project (semester 3). It is possible to exit with a Postgraduate Diploma on successful completion of the taught credits only.

The teaching, learning and assessment strategy employed takes into consideration the learning outcomes for the programme, the nature of topic studied and the need for you to demonstrate significant autonomy in your learning. Directed study, involving directed reading of appropriate texts and the preparation of assessed work, is used to address the majority of learning outcomes. At level 7 you are expected to demonstrate well developed skills of analysis, synthesis and criticism and to demonstrate self-direction and originality in dealing with complex problems. These aspects will be assessed by a variety of strategies, including written and oral examinations, report writing, case studies, group work, essays, a critical appraisal dissertation, oral presentations, a poster presentation (LO6), viva voce and the project report.

Formal lectures will facilitate your acquisition of knowledge and understanding (LO 1) and will be augmented by your self-directed evaluation of related scientific literature and experimental approaches (LO 2 & 3). You will be expected to critically evaluate scientific data (LO2-7) and to design appropriate experimental approaches to test specific scientific hypotheses (LO3 & 10). The research project module provides a major opportunity to demonstrate competence in the execution of experimental work and autonomy in data handling and critical interpretation in a research context.
Your ability to deal with complex issues and to solve problems will be enhanced by effective reflective practice (LO9). Key skills are embedded in a number of modules but are consolidated and assessed in the Personal and Professional Development module. More detailed descriptions of the ways in which learning is related to assessment, in the modules that make up this programme, can be found in the relevant module descriptors. You will also gain familiarity with a range of issues relating to patient sampling handling and laboratory management (LO8) and these aspects will be assessed both formatively and summatively through case-studies and team-based learning. The curriculum may change, subject to the University's programme approval, monitoring and review procedures.

Learning, Teaching and Assessment Strategies

The programme articulates with the Teaching Learning & Assessment strategies of the University. A wide variety of teaching methods, appropriate to the learning outcomes of the individual modules, are employed throughout the programme, and are supported by formative assessment. The teaching methods progressively focus on student-centred approaches to learning, thus you will be expected to take increasing responsibility for your own learning as you progress through the programme. In this way you are expected to develop the attributes needed for life-long learning and continued professional development.

Assessment Regulations

This Programme conforms to the standard University Assessment Regulations for Postgraduate Programmes which are available at the following link: [http://www.bradford.ac.uk/aqpo/ordinances-and-regulations/](http://www.bradford.ac.uk/aqpo/ordinances-and-regulations/)

Admission Requirements

The University welcomes applications from all potential students regardless of their previous academic experience; offers are made following detailed consideration of each individual application. Most important in the decision to offer a place is our assessment of a candidate's potential to benefit from their studies and of their ability to succeed on this particular programme. Entrance requirements for each programme will vary but consideration of your application will be based on a combination of your formal academic qualifications and other relevant experience.

Normally, you would be expected to have gained an Honours degree in an appropriate biological sciences discipline at 2:2 or above. For students from outside of the UK/EU you will be required to meet the current visa and entry requirements for study in the UK, and if your first language is not English you must satisfy the University that you meet the International English Language Testing Service (IELTS) overall band of 6.0 with a minimum of 5.5 in all elements. Students who wish to graduate with an accredited degree
must either enter with an IELTS score of 6.5 or demonstrate that they have achieved this level on completion of the programme.

If you have prior certificated learning or professional experience which may be equivalent to parts of this programme, the University has procedures to evaluate this learning in order to provide you with exemptions from specified modules contained within the curriculum. Please talk to us if you do not fit the standard pattern of entry qualifications.

The University of Bradford has always welcomed applications from disabled students, and these will be considered on the same academic grounds as are applied to all applicants. If you have some form of disability you may wish to contact the programme leader before you apply.

Learning Resources

Laboratory classes take place in a suite of newly (2009) refurbished teaching laboratories. The laboratories are built to Class 2 containment standard and are very well equipped. They also have in-built audio visual facilities. All teaching rooms used on the programme are equipped to a high standard and contain appropriate in-built audio visual facilities.

The JB Priestley Library on the city campus and our specialist library in the Faculty of Management provide a wide range of printed and electronic resources to support your studies. We offer quiet study space if you want to work on your own, and group study areas for the times when you need to discuss work with fellow students. Subject librarians for each Faculty provide training sessions and individual guidance in finding the information you need for your assignment, and will help you organise your references properly.

Student PC clusters can be found in all our libraries and elsewhere on the campus. Many of these are open 24/7. You can also use the University's wireless network to access the internet from your own laptop. Most of our online journals are available on the internet (both on and off campus), and you can also access your University email account, personal information and programme-related materials this way.

Staff are on hand during the daytime to help you if you get stuck, and there is a 24/7 IT helpline available.

Student Support and Guidance

Programme Team

Support for you personally and in your programme of study, will be provided both by the University and the Programme Team. The University and the Faculty have well-deserved reputations for good practice in this area. You will be allocated a Personal Tutor in the School of Medical Sciences whom you will see at least fortnightly throughout the first two semesters and then occasionally through semester 3. You will be allocated a personal tutor who is someone with whom you will be able to talk about any academic or personal
concerns. The School will ensure that there is someone available with whom you feel comfortable to help and support you. If you do not feel comfortable with the Personal Tutor allocated you may request a different Personal Tutor. Further guidance is available from module leaders (for subject specific queries) and the MSc Examination Officer (for matters relating to assessment). You will have an individual supervisor for your Critical Appraisal and Research Project and will meet with these individuals prior to starting these modules and regularly during the modules. You will also be supported in all aspects of your programme by Programme and Module handbooks that you can consult on a range of learning issues. Regular feedback on your individual performance will be provided. The support provided by the School is enhanced by a strong university infrastructure, including particularly the Disabilities Office and the Careers Service, and the Library and Computing facilities. The programme team are very responsive to student feedback though a Staff-Student Liaison Committee.

**Students' Union**

We value the feedback provided by students and collaborate with the Students’ Union, through a system of student representatives and formal staff student liaison committees, so that any issues you wish to raise are addressed rapidly.

The Students’ Union and the University of Bradford work in partnership to provide confidential counselling and welfare services where you can get help with any aspect of your personal or academic life. Student Financial and Information Services (part of the Hub) will provide you with information about a diverse range of issues such as council tax, personal safety and tourist information. International Students can access a range of additional advice and support services through the Student’s Union.

**Employability and Career Development**

The University is committed to helping students develop and enhance their employability profile, commitment towards a career pathway(s) and to implementing a career plan.

Professional career guidance and development support is available throughout your time as a student and as a graduate from Career Development Services. The support available from Career Development Services includes a wide range of information resources, one to one appointments, a weekly workshop programme, a mentoring programme, graduate recruitment and careers fairs, plus information and help to you find part time work, summer work placements, internship programmes and graduate/postgraduate entry vacancies. In addition, some students will receive seminars and workshops delivered by Career Development Services as part of their programme of study. All students are encouraged to access Career Development Services at an early stage during their studies and to use the extensive resources available on their web site [http://www.bradford.ac.uk/careers/](http://www.bradford.ac.uk/careers/)
Career Development Services annually undertakes a survey of all postgraduates to find out their destination six months after graduation. The survey gathers data on the employment and further study routes graduates have entered and a range of other information including job roles, name and location of employers, salary details etc. The survey findings for each programme of study are presented on the programme information pages on the University website and via Career Development Services’ website http://www.bradford.ac.uk/careers/

Employability skills, on this programme, are embedded within the Personal and Professional Development module which will also provide opportunities to discuss progression onto PhD and how best to prepare for applying for PhD opportunities.

**Learner Development Unit for Academic Skills Advice**

For postgraduate students on taught programmes who are looking to improve their marks during their time at university, study skills and maths advice is available to all regardless of degree discipline. Students can access a programme of interactive workshops and clinics which is delivered throughout the year. This is in addition to our extremely popular face-to-face guidance from our advisers, who also offer a wide range of online and paper based materials for self-study.

http://www.bradford.ac.uk/academic-skills/index.php

**Disability**

Disabled students will find a supportive environment at Bradford where we are committed to ensuring that all aspects of student life are accessible to everyone. The Disability Service can help by providing equipment and advice to help you get the most out of your time at Bradford and is a place where you can discuss any concerns you may have about adjustments that you may need, whether these relate to study, personal care or other issues. For more information contact the Disability Service by phoning: 01274 233739 or via email: disabilities@bradford.ac.uk
University policies and initiatives

Ecoversity

Ecoversity is a strategic project of the University which aims to embed the principles of sustainable development into our decision-making, learning and teaching, research activities, campus operations, and the lives of our staff and students. We do not claim to be a beacon for sustainable development but we aspire to become a leading University in this area. The facilities we create for teaching and learning, including teaching spaces, laboratories, IT labs, and social spaces, will increasingly reflect our commitments to sustainable development. Staff and student participation in this initiative is crucial to its success and its inclusion in the programme specification is a clear signal that it is at the forefront of our thinking in programme development, delivery, monitoring, and review. For more details see [http://www.brad.ac.uk/about/ecoversity/](http://www.brad.ac.uk/about/ecoversity/)

The University of Bradford and the Faculty of Life Sciences are committed to the principles of Education for Sustainable Development as outlined in the UNESCO definition [http://www.unesco.org/new/en/education/themes/leading-the-international-agenda/education-for-sustainable-development/](http://www.unesco.org/new/en/education/themes/leading-the-international-agenda/education-for-sustainable-development/)

The Faculty of Life Sciences has committed to involvement with education for sustainable development (ESD) by ensuring that curricula reflect the integration of practice through personal and social understanding of responsible and ethical behaviour (attitudes and values) aligned with that of “Responsible Science” and where appropriate “Responsible Professionalism”. In this MSc programme there will be a significant emphasis on the relationship between Biomedical Science and public health. Thus, issues around ethics, healthcare and public health, the social context of disease, genes, environment and disease, equality and diversity, health and safety in the workplace, professional practice and service development are embedded in some modules (e.g., Personal and Professional Development / Applied and Diagnostic Pathology). These areas are listed by UNESCO as those which education for sustainable development must promote.

The nature of the role healthcare professionals is to improve the quality of life of service users. The degree programmes actively encourage understanding of working in multi-disciplinary teams (through group work). Thinking critically and problem solving are skills embedded in the assessment structure. The students also have a solid base of laboratory competency from their laboratory based sessions. ESD should give the students a better understanding of the world and promote taking responsibility for creating a sustainable future both at home and at work. For more details see [http://www.brad.ac.uk/about/ecoversity/](http://www.brad.ac.uk/about/ecoversity/)
Further Information:
For further information, please check the University prospectus or contact Admissions.

The Admissions Office
The University of Bradford
Richmond Road
Bradford, BD7 1DP
UK
+44 (0)1274 233054
http://www.brad.ac.uk/courses/

The Admissions Office
Faculty of Life Sciences
The University of Bradford
Norcroft Building
Richmond Road
Bradford, BD7 1DP
UK
+44 (0)1274 234706
http://www.bradford.ac.uk/life-sciences/our-courses/postgraduate-taught/msc-biomedical-science/

The contents of this programme specification may change, subject to the University's regulations and programme approval, monitoring and review procedures.