

Nottingham Trent University Course Specification

Basic Course Information

1.	Awarding Institution:	Nottingham Trent University
2.	School/Campus:	Science and Technology/Clifton
3.	Final Award, Course Title and Modes of Study:	BSc (Hons) Microbiology FT, SW
4.	Normal Duration:	3 years Full Time (FT), 4 years Sandwich (SW)
5.	UCAS Code:	C510, 350S

6. Overview and general educational aims of the course

BSc (H) Microbiology is designed to provide you with a multidisciplinary approach to the study of the microbial world. You will study the key concepts associated with micro-organisms in both practical and theoretical contexts and utilise these when considering their role in health, disease and in the natural environment. There is an emphasis on developing knowledge and understanding such that you acquire the skills, qualities and attributes expected by employers or for postgraduate studies and research.

This course aims to:

- provide you with opportunities to study the basic principles of the metabolism and genetics of microbes involved in clinical health and the natural environment and infectious diseases;
- foster and develop a knowledge and an understanding of microbiology and its related disciplines, coupled with an understanding of the power of the scientific method with a creative approach to solving scientific problems;
- use the teaching and research experience of staff to enhance quality;
- produce qualified scientists in the field and different levels of specialism;
- equip you with the knowledge and understanding, skills, qualities and attributes for the world of work and for your everyday life;
- widen participation by recruiting students from a variety of backgrounds, to encourage and assist them to realise their potential and enhance their employment and career opportunities.

This course is offered in full time mode (3 years) and sandwich mode (4 years). In the sandwich mode, you will spend year 3 of the course on a work placement for example in food standards testing. If you decide to follow this route, the Employability Team will work with you to develop your *curriculum vitae* and will help you to target your applications so that you get a placement that is right for you. You will also be assigned a Placement Tutor who will monitor your progress and visit you at the company.

New and returning students participate in a matriculation event during

<p>Welcome Week. This matriculation event is designed to facilitate getting to know one's peers, reflect on your motivations for studying at university, support transition into higher education and promote course cohesion. Re/integration events for international students, mature students, placement students are part of this event. This creates the opportunity to build international relationships with fellow peers, mentors and academics.</p> <p>As you progress, you will gain knowledge and experience of molecular microbiology, forensic microbiology and virology. Microbiology was judged to be "excellent" in the External Subject Review. We offer high quality, modern facilities for practical work and lectures. Practical work forms a large proportion (40%) of learning to ensure that you have extensive skills for employment or research.</p> <p>This named award is accredited by the Royal Society of Biology and subject to successful completion of the level 6 Research Project module. This 40 credit point module has to be passed and cannot be compensated.</p>
<p>7. Course outcomes Course outcomes describe what you should know and be able to do by the end of your course if you take advantage of the opportunities for learning that we provide.</p>
<p>Knowledge and understanding By the end of the course you should be able to:</p>
<ol style="list-style-type: none"> 1. Demonstrate knowledge and understanding of the essential facts, terminology, classification systems, major concepts, principles and theories in microbiology. 2. Critically evaluate concepts relevant in microbiology and apply them in problem solving scenarios. 3. Identify current developments in microbiology and the applications arising out of them. 4. Understand methods used to acquire, interpret and analyse biological information from a variety of sources. 5. Use and assess the values of range of practical and presentation techniques and methodologies, including data analysis and use of statistics. 6. Understand and appreciate complex ethical issues within the biosciences and perceive how debate informs concern about the quality and sustainability of life at local and international scales. 7. Make appropriate and informed career management choices and be knowledgeable about entrepreneurial issues concerning microbiology.
<p>Skills, qualities and attributes By the end of the course you should be able to:</p>
<ol style="list-style-type: none"> 8. Acquire, analyse, interpret, evaluate and apply data from a variety of sources.

9. Develop critical skills in the interpretation of scientific knowledge and data.
10. Apply scientific principles and methodologies in investigations.
11. Use equipment and materials competently, including computing resources and demonstrate acquisition of technical skills relevant in microbiology.
12. Communicate effectively in written, graphical and oral formats.
13. Prepare and present scientific reports to professional standards.
14. Apply numerical skills.
15. Select, use and critically evaluate appropriate information using digital and traditional resources.
16. Work independently and as part of a team, developing leadership capacity and the ability to work both autonomously and collaboratively.
17. Demonstrate the skills required to plan, implement, draw conclusions, evaluate and report on a programme of research.
18. Plan and prioritise to effectively manage work and time, and to reflect appropriately on their own performance.

8. Teaching and learning methods

In the great majority of modules, your teaching and learning is focused on lectures supported by practical laboratory classes and workshops. Much of the theory introduced in lectures is consolidated through these laboratory sessions and through group seminars. Lecture material is supported through e-resources. The University Virtual Learning Environment is widely used to post summary slides of lectures, resources such as articles and recent research papers and information about the organization of modules and the course.

During your course you will discuss global impacts of plant pathogens on food security and take part in ethical debates on the use of genetically modified organisms (GMOs) and the different international positions on this issue. You will consider the financial and environmental costs of scientific research versus potential improvements to human and animal health, as well as the economic benefits of a successful biotechnology industry. You will consider the development and potential impacts of genetically modified organisms, and discuss global health challenges such as tropical diseases and their differing impacts in different countries. Later you will examine microbes and climate change, bioremediation, and the microbial production of sustainable biofuels.

Opportunities will exist for you to enhance your communication skills by writing reports in various formats, by producing posters and by giving oral presentations to your colleagues. Seminars are used to offer a group teaching environment, often led by students' needs, to review, discuss and consider aspects of taught material from either lecture or laboratory classes.

Laboratory classes focus on hands-on acquisition of practical skills in the application of key principles, concepts and methods of Microbiology. Laboratory sessions involve problem solving, data collection and observation. Further

time is allocated to the analysis, interpretation and evaluation of the results both inside and outside these practical classes. In this way you will develop your skills to undertake self-directed study and to become autonomous, independent learners. You will also be expected to carry out supplementary reading and research to consolidate taught material. All of these practices are combined in your final year where you will undertake an individual period of research which may be laboratory, field, informatics and/or literature-based.

As your course progresses, you will assemble a Skills Portfolio, which is a complementary and highly personalised aspect to your learning experience. It provides a vehicle for you to evaluate, collate and showcase your practical and transferable skills for personal development and future employment. Each skill is covered in several modules across a course, giving you the opportunity to continually learn, refine, and perfect your professional skills.

You will be given support and formative feedback in course tutorial sessions at all levels. As the course progresses you will collect information for your Skills Portfolio. To ensure timely progression and achievement, at Levels 4 and 5 you will submit some portfolio evidence for summative assessment and feedback. The Skills Portfolio culminates at Level 6 in a capstone summative assessment with reflection on your work, where it contributes to the Research Project module.

You will also have access to sustainable video resources promoting an inclusive learning environment.

9. Assessment methods

The course uses a variety of assessment methods to develop your individual strengths and to enable you to demonstrate achievement of the learning outcomes. Subject knowledge and understanding are mainly tested through tests and examinations, preparation of case studies, reports detailing practical work, oral presentations and poster defences.

Practical investigations are used to assess a range of intellectual and scientific skills. Your ability to test hypotheses, observe, collate, present, interpret and evaluate findings of an investigation is assessed through the preparation of formal scientific reports.

Your communication skills, in written and oral formats, are assessed at numerous points during the course. Scientific reports, poster presentations, essays and examinations provide opportunities to demonstrate your writing skills. Oral presentations and verbal defence of posters allow demonstration of your verbal and visual communication skills.

As well as theoretical knowledge you will be required to demonstrate acquisition of practical skills. Essential practical skills will be assessed during laboratory sessions at Level 4. This assessment will contribute 25% to your Practical Techniques in Biology module, which you will have to pass to satisfy the RSB practical skills requirement for accreditation. If you have entered the course at Level 5 you will have a further opportunity to have your practical skills assessed if necessary.

As this named award is accredited by the RSB it is subject to successful completion of the level 6 Research Project module. This 40 credit point module has to be passed and cannot be compensated.

You will be given written feedback on all your assessed work to help you to develop your effectiveness as a learner and to achieve your goals.

10. **Course structure and curriculum**

Our BSc (H) Microbiology degree is a 3-year full time or a 4 year sandwich course. The academic year comprises 30 weeks divided into 3 terms. Teaching and learning take place for 26 weeks with the final 4 weeks of each year being set aside for examinations. All modules on the degree are taught throughout the year, with the exception of Practical Techniques for Biology and Living Systems, which are taught in the first term of the first year, with the remaining modules being completed over terms 2 and 3.

Information on awards and degree calculations can be found at https://www4.ntu.ac.uk/adq/document_uploads/quality_handbook/138197.pdf

An Honours degree is awarded when you have successfully completed 360 credit points (cp) with 120 cp at each level.

The following interim awards can be achieved as outlined below:

An Ordinary degree is awarded if you have passed 120 cp at Level 4, 120 cp at Level 5 and a minimum of 60 cp at Level 6. Holders of an Ordinary Degree will have a wide knowledge of the essential concepts of a subject, and will have learned how to take different critical approaches and decision-making to solving problems. They will be able to communicate accurately in a variety of professional formats and will have the qualities needed for employment requiring the exercise of personal responsibility and some decision-making in complex and unpredictable contexts. The suggested minimum Course Learning Outcomes (CLO) are CLO1-6, 8-15, 18 allowing students to achieve a minimum of 300 cp.

A Diploma of Higher Education is awarded if you have successfully completed 120 cp at Level 4 and 120 cp at Level 5, but fewer than 60 cp at Level 6. Holders of a Diploma of Higher Education will have a wide knowledge of the essential concepts of the subject, and will have learned how to take different critical approaches to solving problems. They will be able to communicate accurately in a variety of professional formats and will have the qualities needed for employment requiring the exercise of personal responsibility and decision-making. The suggested minimum Course Learning Outcomes (CLO) are CLO1-6, 8-15 allowing students to achieve a minimum of 240 cp.

You can be awarded a Certificate of Higher Education if you have successfully completed 120 cp at Level 4 but fewer than 120 cp at Level 5. Holders of a Certificate of Higher Education will have a sound knowledge of the basic concepts of the subject, and will have learned how to take different approaches to solving problems. They will be able to communicate accurately and will have the qualities needed for employment requiring the exercise of some personal responsibility. The suggested minimum Course Learning Outcomes (CLO) are CLO1, 4, 8, 11, 12, 14 and 15 allowing students to achieve a minimum of 120 cp.

In addition to gaining one of the awards above, you can qualify for a Diploma in Professional Practice at pass, commendation or distinction level

on successful completion of a one year placement. You can also be awarded a Certificate in Professional Practice on completion of a minimum of 6 weeks on placement (for example if you have completed a summer position).

The BSc (H) Microbiology degree is modular based and addresses key aspects of microbes of medical, public health and forensic importance. The modules selected on the degree are designed to meet the course learning outcomes. Modules are mainly 20 cp unless otherwise stated and are all core. This ensures a structured and relevant Microbiology degree is delivered to students. The structure of the curriculum is outlined below.

Level 4 (year 1)

Introduction to Biochemistry
Living Systems
Practical Techniques for Biology
Human Physiology
Genetics and Immunology
Introductions to Microbiology

Level 5 (year 2)

Microbial Structure, Identification, and Distribution
Microbial Metabolism and Genetics
Clinical and Public Health Microbiology
Applied Microbiology
Professional Skills in Microbiology
Host-Pathogen Interactions

Optional one year placement supported by placement tutors and the employability team

Level 6 (final year)

Research Project (40cp)
Infectious Diseases and their Control
Molecular Microbiology
Forensic Microbiology
Immunology and Virology

11. Admission to the course

Entry requirements

For current information regarding all entry requirements for this course, please see the 'Applying' tab on the NTU course information web page.

The full UCAS entry profile for this course can be found at:
<http://www.ucas.com/>

12. Support for learning

As a Nottingham Trent University student you will have the full support of the Academic Team in support for learning, and have full access to Student Support Services.

https://www4.ntu.ac.uk/current_students/services/index.html

In addition, School-based pastoral support networks are in place to offer you guidance and advice on academic and personal issues.

At the start of your year we will welcome you with a series of events designed to introduce (or reintroduce) you to the University and its services, fellow students and your academic team.

University Accommodation Officers will provide you with information, guidance and continuing support for example with places in halls of residence, private rented accommodation and the Landlord Approval Scheme.

From Welcome Week onwards we support progression and achievement of students from a diverse range of backgrounds. Course Tutor groups often comprise students from many places and cultures, ideal for exchanging ideas and understanding topics from multiple viewpoints. You will find that home, international and Erasmus students work together in practical classes and seminars.

Later in the course we encourage sandwich route students to take a placement year, which may be abroad or in the UK. You will be supported by the Employability team and a named academic staff supervisor.

Whilst on placement you may have collected information which could complement your final year Research Project and be discussed with respect to existing international literature. If you are doing a UK-based placement you would be expected to interpret your results within a wider, international context.

13. Graduate destinations/employability

There is a wide range of career or postgraduate career opportunities relating to microbiology which our students enter on completion of the course. Career opportunities arising from your degree include microbiology research in industry or academia, laboratory science in industry; technical, sales and management positions; environmental microbiologist within industry; education. Students also undertake postgraduate study or research.

14. Course standards and quality

We strongly value your input and ideas about your course. Its management and development is supported by a Course Committee, with staff and student course representatives. It operates to discuss matters arising, consider External Examiners' comments and review annual course reports. The Committee responds to your feedback since your voice plays a crucial role in the content and structure of your course and the way in which it is run.

Overarching responsibility for quality control lies with the School Academic Standards and Quality Committee whose remit is to provide guidance and support to academic courses.

External Examiners offer further quality control through monitoring academic standards and moderation of assessment tasks and processes.

15. Assessment regulations

This course is subject to the University's Common Assessment Regulations (located in its Academic Standards and the Quality Handbook). Any course

specific assessment features are described below:	
Supplement to Common Assessment Regulations to be included post DAG	
16. Additional Information	
Collaborative partner(s):	None
Course referenced to Quality Assurance Agency for Higher Education (QAA) Benchmark Statements:	Biosciences
Course recognised by:	Royal Society of Biology
Date this course specification approved:	September 2018
Any additional information:	