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Nottingham Trent University Course Specification

	Basic Course Information	
1.	Awarding Institution:	Nottingham Trent University
2.	School/Campus:	Science and Technology/Clifton Campus
3.	Final Award, Course Title and Modes of Study:	**MBiol Microbiology** **BIOL282 FT BIOL283 SW**
4.	Normal Duration:	4 years FT or 5 years SW
5.	UCAS Code:	C501

6. Overview and general educational aims of the course

MBiol Microbiology is an Integrated Masters Degree that combines undergraduate and postgraduate study. It is designed for students with a clear drive and ambition to progress to a professional scientific career in industry or academia and is tailored to provide knowledge, technical skills and research expertise for progression onto PhD level studies. It will provide you with great depth and breadth in the world of microbiology and prepare you for a wide range of careers. It will help you to stand out in the jobs market.

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. In addition to microbiological training, this course has a parallel focus on biomathematics, bioinformatics and research/employability skills including experimental design and science communication.

MBiol Microbiology provides you with opportunities to study the basic principles of the metabolism and genetics of microbes, microbes involved in clinical health and the natural environment and infectious diseases. Further studies specialise in 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, carried out in professional standard laboratories, forms a large proportion of learning to ensure that you develop extensive skills for future employment.

The course culminates in a year-long project where, in a cutting-edge laboratory setting you will devise, plan and carry out a substantial piece of scientific research. Working in one of our research teams, you will be given expert supervision by internationally recognised scientists.

This MBiol course is offered in full time mode (four years) and Sandwich mode (5 years). In the latter you will typically spend year 3 on placement working in the private or public sector in a role that is aligned with your course.

In summary, MBiol Microbiology aims to provide you with an interesting and enjoyable educational experience at a higher-level than is possible on a BSc course by:

- Offering content that will encourage and assist you to realise your potential by means of an applied and creative approach to solving scientific problems.

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- Developing a broad and deep knowledge and systematic understanding of biology and its related disciplines, and the skills to apply this knowledge at the forefront of the discipline.
- Providing you with the opportunity, in a cutting-edge research laboratory, to develop the skills of an independent researcher, from literature review, through study design and execution, to scientific communication.
- Imparting the specialised knowledge and skills necessary to prepare you for further study in a research-focussed environment
- Equipping you with the critical analysis skills, understanding, qualities and attributes necessary for a wide range of careers in industry, commerce, teaching, and research.

In addition, level 7 MBiol students will be offered opportunities to participate in international placements within research facilities.

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.

Knowledge and understanding

By the end of the course you should be able to:

CLO1 Demonstrate a comprehensive knowledge and systematic understanding of the concepts, principles and theories of microbiology.

CLO2 Demonstrate a deep understanding of developments, applications and limitations of microbiology across a variety of areas, some of which are at, or are informed by, the forefront of the discipline.

CLO3 Critically assess and implement appropriate investigative and statistical techniques required to solve a range of problems in creative and innovative ways.

CLO4 Exercise sound judgement, show initiative, and demonstrate an appreciation of the complex ethical issues that arise from biological applications, and how debate informs concern about the quality and sustainability of life.

CLO5 Demonstrate the abilities of an independent researcher, by conducting a substantial and original programme of investigation from literature review, through design, execution and analysis to scientific communication.

CLO6 Make appropriate and informed career management choices in preparation for professional employment or doctoral studies in microbiology.

Skills, qualities and attributes

By the end of the course you should be able to:

CLO7 Apply scientific principles and methodologies in investigations.

CLO8 Select, use, and critically evaluate appropriate information using digital and traditional resources.

CLO9 Work independently or as part of a team, developing leadership capacity and the ability to work both autonomously and collaboratively.

CLO10 Show a high level of competence in the use of advanced equipment, materials and computing resources.

CLO11 Demonstrate application of numerical skills by acquisition, analysis, interpretation and evaluation of data from a variety of sources.

CLO12 Develop critical skills in the interpretation of complex scientific knowledge, future developments and their applications.

CL013 Be effective and confident in the communication of scientific concepts to a range of audiences by presenting material to professional standards.

CLO14 Demonstrate the skills required to effectively manage their workload and time and reflect appropriately on their own performance.

CLO15 Advance scientific knowledge and understanding by devising and carrying out a substantial piece of original scientific research.

Teaching and Learning Methods

In the 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 (NOW) is widely used to post summary slides of lectures, resources such as articles and recent research papers and information about the organisation of modules and the course. 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.

You will also be expected to carry out supplementary reading and research to consolidate taught material. 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 apply these skills in a short research project at Level 6 (40 cp) and a further extensive research project at Level 7 (100 cp).

9. **Assessment Methods**

The course utilises a variety of assessment methods to meet your individual strengths and to enable you to demonstrate achievement of the learning outcomes. Subject knowledge and understanding is mainly tested through tests and examinations, preparation of case studies, written reports based on laboratory practical work, oral and poster presentations. Laboratory investigations are used to assess a range of intellectual and practical skills. Your ability to test hypotheses, observe, collate, present, interpret and evaluate findings of an investigation is assessed through the preparation of laboratory reports including two major pieces of work in the form of research project write-ups.

Your communication skills, in written and oral formats, are assessed at numerous points throughout the course. Laboratory reports, poster

presentations, essays and examinations provide opportunities to demonstrate your writing skills. Oral presentations and verbal defences of posters offer a means for you to demonstrate your verbal communication skills while the poster itself allows for graphical and spatial skills to be expressed.

You will also 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

The MBiol Microbiology degree is a 4-year full time course, or 5 years with a sandwich component. 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. An exception to this is in the final year of the course, when projects will continue and be written up to the end of term, there being no end of year examinations.

The course is delivered as a series of modules, and you are required to pass 120 credits (cp) at levels 4, 5, 6 and 7. An MBiol degree is awarded to students who successfully complete 480 credit points.

All modules are taught throughout the year, with the exception of Living Systems, Practical Techniques for Biology and Science Communication, which are taught in the first term of the first and fourth years respectively. The remaining Level 4 modules are completed over terms 2 and 3.

The MBiol Microbiology degree addresses key aspects of microbes of medical, public health and forensic importance together with a focus on bioinformatics, biomathematics and research skills such as experimental design. The modules included are designed to meet the course learning outcomes. Modules are mainly 20 cp unless otherwise stated and all taught modules are core (C = compulsory). This ensures a structured and relevant Microbiology degree is delivered to students. The structure of the curriculum is outlined below with an indication of the module status.

Level 4

- Living Systems (C)
- Practical Techniques for Biology (C)
- Genetics and Immunology (C)
- Introduction to Biochemistry (C)
- Introduction to Microbiology (C)
- Human Physiology (C)

Level 5

- Bioinformatics and Biomathematics (C)
- Experimental Design (C)
- Microbial Structure, Identification, and Distribution (C)
- Applied Microbiology (C)
- Microbial Metabolism and Genetics (C)
- Host-Pathogen Interactions (C)

Optional industrial placement year for sandwich students

Level 6

- Honours Project 40 cp (C)
- Molecular Microbiology (C)
- Forensic Microbiology (C)
- Infectious Diseases and their Control (C)

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- Bioinformatics (C)

Level 7

- Science Communication (C)
- MBiol Research Project 100 cp (C)

Additionally, there is the option to participate in a short international placement within a research facility during Level 7.

In order to progress from level 4 to level 5, you should have a minimum of a pass or a compensated pass in all of your first year modules at the first sitting. To progress from level 5 to level 6 and from level 6 to level 7 you must aggregate 60% each year, passing or having a compensated pass at the first sitting of all modules. The rationale behind setting a requirement for maintaining a minimum 2.1 standard after the first year is confidence that an MBiol is a mark of high achievement, high employability, and preparedness for an outstanding career.

If you do not pass all of your modules first time, or (at levels 5 and 6) attain 60% overall, you will transfer to the Honours Degree course in Microbiology. If you do not pass all modules at level 7, but have passed level 6, you will be considered for award of an Honours Degree in Microbiology (or an Ordinary degree in Microbiology on completion of 120 cp at levels 4 and 5 plus 60 cp at level 6). Boundary conventions will apply if you aggregate up to 2% below 60%.

Students with a compensated pass will receive further consideration as to the relevance of the compensated subject area before there is agreement to proceed with the MBiol. If you have low marks at level 4 you will be counselled about your prospects on the course, and be given the option of transferring to BSc Honours Microbiology should you so wish.

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

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/

International students: All applicants whose first language is not English are required to demonstrate suitable English language skills before starting the course. We also accept the TOEFL iCT English test. A list of all accepted qualifications can be found at https://online.ntu.ac.uk/admissions/international-students?cmgfrm=https%3A%2F%2Fwww.bing.com%2F

Support for Learning

All students at Nottingham Trent University have full access to Student Support Services. In addition, School based pastoral support networks are in place to offer all students, support, guidance and advice on academic and personal issues. Within the course, students experience the full support of the Biosciences Academic Team. The Academic Team Leader, with support from the Course Leader, Module Leaders and academic staff teaching on these modules take responsibility for student support for learning. In Welcome Week new entrants

will experience a minimum of a 3 day induction period at the commencement of their first academic year. Induction will inform students of:

- Student Support Services at University, School and Course level;
- University policies and procedures on academic systems;
- Personal development planning;
- Timetable issues, room allocations and location;
- University, School and Course Handbooks;
- Enrolment procedures;
- Computing, IT and Library services;
- Health and Safety procedures.

In Welcome Week you will be assigned a Course Tutor who will meet with you in a small group in the first year and provide you with any advice and support that you may need. The Course Tutorials are timetabled and are designed to help you reflect on your approach to study, make connections between modules and encourage you to achieve your maximum potential. Tutorials are also used for personal development planning and skills development.

Extensive online module information including learning materials is provided on the university virtual learning environment (NOW). This also includes course information such as the course handbook and assessment deadlines.

The University provides a wide range of student services, where you can get support and advice on issue such as finance, dyslexia and disability, and personal problems http://www.ntu.ac.uk/student_services/index.html

University Accommodation Officers will provide you with information, guidance and continuing support about accommodation issues, for example halls of residence, private rented accommodation, and the Landlord Approval Scheme. The Accommodation Services can be accessed through www.ntu.ac.uk.

If you take the opportunity to undergo industrial training, you will be supported by the Placements Office staff and a named academic staff supervisor.

13. Graduate destinations / employability

Graduate employability is fundamental to the strategic aims of Nottingham Trent University – NTU is consistently placed close to the top of the league tables of all UK universites for graduate employment

This degree is designed for students with a clear ambition to progress into a professional scientific career in industry or academia and there is a wide range of careers and postgraduate study opportunities relating to microbiology you can enter. These include microbiology research in industry or academia; laboratory science in industry; technical, sales and management positions; environmental microbiology within industry; education. Students also undertake postgraduate study or research.

14. Course standards and quality

- The Course Committee, with staff and student representatives, operates to discuss matters arising on the course, review module feedback and consider the course report and external examiners' comments.

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- Teaching in the School of Science and Technology is regularly reviewed by the University.

- The subject benchmarks of the Quality Assurance Agency have been incorporated into the course's learning outcomes.

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, 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 Quality Handbook). Any course specific assessment features are described below:

For automatic progression to the next level, MBiol students must show a satisfactory performance at levels 4, 5 and 6, achieving a pass or compensated pass in all modules at the first sitting. In addition, to progress on the MBiol from levels 5 and 6, an aggregate mark of 60% must be attained each year.

Students who successfully complete 120 cp at levels 4, 5 and 6 but fail to complete level 7 may be awarded an Honours Degree in Microbiology (usual classifications apply – please refer to the BSc (H) Microbiology course specification for further details). Due to the structure of level 7, there is currently no opportunity to award a Postgraduate Certificate following partial completion of level 7.

In addition to gaining one of the awards above, students can qualify for a Diploma in Professional Practice at pass, commendation or distinction level on successful completion of a one year placement. Students can also be awarded a Certificate in Professional Practice on completion of a minimum of 6 weeks on placement (for example if they complete the international research placement at level 7 or a summer placement).

16. **Additional Information**

Collaborative partner(s):	None
Course referenced to national QAA Benchmark Statements:	Biosciences
Course recognised by:	
Date implemented:	September 2018
Any additional information:	None