

## Nottingham Trent University Course Specification

### Basic Course Information

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|----|---|---|
| 1. | Awarding Institution:                         | Nottingham Trent University   |
| 2. | School/Campus:                                | Science and Technology/Clifton Campus   |
| 3. | Final Award, Course Title and Modes of Study: | BSc (Hons) Biological Sciences<br>FT/SW/PT  |
| 4. | Normal Duration:                              | 3 years FT, 4 years SW, 3-6 years PT  |
| 5. | UCAS Code:                                    | C110 BSc/ABio<br>Banner code:<br><ul style="list-style-type: none"> <li>• BIOL082 (FT); BIOL044 (SW); BIOL022 (PT)</li> <li>• BIOL125 (SW) / BIOL129 (FT): Biochemistry &amp; Microbiology pathway</li> <li>• BIOL126 (SW) / BIOL130 (FT): Biomedical Sciences pathway</li> <li>• BIOL127 (SW) / BIOL131 (FT): Ecology &amp; Environmental Management pathway</li> <li>• BIOL128 (SW) / BIOL132 (FT): Physiology &amp; Pharmacology pathway.</li> </ul> |

### 6. Overview and general educational aims of the course

BSc (H) Biological Sciences is designed for the student who has decided to study biology but has not yet made up their mind in which area to specialise. This course offers you the opportunity to study for half a year before making module choices that determine the degree subject(s) you will study in Year 2. Further adjustments to the degree studied might be possible at the end of Year 1, depending on the module choices you make. Details of the courses available to you are indicated in section 10.

We aim:

- to provide courses that offer choice, flexibility and specialisation within major biological disciplines;
- to offer a range of courses in the biological sciences that focus on the applied nature of the constituent subjects, their relevance to employment and the needs of society, particularly on courses providing sandwich training;
- to offer courses in different modes of study that meet the needs of both students and employers, including those of local industry and public sector bodies;
- to 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;
- to use the teaching, consultancy and research experience of staff to enhance the quality of courses;
- to foster and develop in students an extensive knowledge and an understanding of biology and its related disciplines, coupled with the intellectual agility required to use scientific methods to creatively approach, analyze and solve scientific problems;
- to produce qualified scientists in a variety of fields and at different levels of specialism;
- to equip students with the knowledge, understanding, intellectual curiosity, skills, qualities and attributes for the world of work and for their everyday life.

This course is offered in full time mode (three years), part-time mode (3-5 years) and sandwich mode (four years). In the sandwich mode you will spend a period of one year, during year three of the course, in an industrial placement, such as in a food company or hospital pathology laboratory. Students studying PT will have prior qualifications and/or experience equivalent to level 4 (year 1) of the course. They will study levels 5 and 6 (years 2 and 3/4) at a pace suited to their work and lifestyle over up to 5 years.

### 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:

1. demonstrate knowledge and understanding of the essential facts, terminology, classification

- systems, major concepts, principles and theories of the relevant biological discipline, critically evaluating concepts and applying them in problem solving;
2. identify current developments in your chosen area and the applications arising out of them;
  3. Understand methods used to acquire, interpret and analyse biological information from a variety of sources
  4. use and assess the values of a range of practical and presentation techniques, practices, technologies and methodologies, including data analysis and use of statistics;
  5. understand and appreciate complex ethical issues that arise from these applications, and perceive how debate informs concerns about the quality and sustainability of life at local and international scales;
  6. make appropriate, informed and enterprising career management choices and be knowledgeable about entrepreneurial issues concerning your chosen biological discipline.

### **Skills, qualities and attributes**

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

7. acquire, analyse, interpret, evaluate and apply data from a variety of sources;
8. develop critical skills in the interpretation of scientific knowledge and data;
9. apply scientific principles and methodologies in investigations;
10. use equipment and materials competently, including computing resources;
11. communicate effectively in written, graphical and oral formats;
12. prepare and present scientific reports to professional standards;
13. apply numerical skills;
14. select, use and critically evaluate appropriate information using digital and traditional resources;
15. work independently and as part of a team, developing leadership capacity and the ability to work both autonomously and collaboratively;
16. demonstrate the skills required to plan, implement, draw conclusions, evaluate and report on a programme of research
17. plan and prioritise to effectively manage work and time, and to reflect appropriately on your own performance

## **8. Teaching and Learning Methods**

In the majority of modules, your teaching and learning is focused on lectures supported by practical, laboratory classes, field visits and field courses. Much of the theory introduced in lectures is consolidated through these laboratory sessions and through small 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 organization of modules and the course.

Teaching of the BSc (H) Biological Sciences degree is enhanced by external speakers and by inputs from Careers staff. 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.

Laboratory classes focus on hands-on acquisition of practical skills in the application of key principles, concepts and methods of your choice of subject for study. Laboratory and field sessions involve problem solving, data collection and observation. Further time is allocated to the analysis, interpretation and evaluation of results, both inside and outside these practical classes. Seminars are used to offer a small group teaching environment, often led by students' needs, to review, discuss and consider aspects of taught material from either lecture or laboratory classes. Through these activities, you will develop the capacity undertake self-directed study and to become autonomous, independent learners. You will also be expected to carry out supplementary reading and research, which will consolidate taught material, situate your own work within wider theory, and allow you to contribute to knowledge construction in your chosen discipline.

During the course of your studies, you will assemble a Skills Portfolio, which you can use to reflect on the skills and attributes which you acquire. This Portfolio will prove useful when completing your CV, and when applying for jobs at the end of the course.

## **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, write-ups of 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.

Your communication skills, in written and oral formats, are assessed at numerous points throughout the course. Laboratory reports, poster presentations, essays and examinations provide you an opportunity to demonstrate your writing skills. Oral presentations and verbal defences of posters offer ways for you to demonstrate your verbal communication skills while the poster itself allows for visual and spatial communication skills to be expressed.

The overall balance of assessment on the course taught modules is typically 60% coursework and 40% examination at Level 4 (year 1); 50% coursework and 50% examination at Level 5 (year 2); and 40% coursework, 60% examination at Level 6 (final year). However, the assessment strategies used within a particular module are chosen to be the most appropriate for that aspect of study.

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 BSc (H) Biological Sciences degree is either a three year full-time course, a 4 year full-time course with a sandwich placement year between Levels 2 (Year 2) and 3 (Year 4), or a 3-5 year PT course (of levels 2 and 3 only).

The academic year comprises 30 weeks divided into 3 terms. In the first year, two modules are taught in the first term, the remaining four in terms 2 and 3. All modules in years 2 and 3 of the degree are taught throughout the year. Teaching and learning takes place for a total of 26 weeks, with the other 4 weeks of each year being set aside for examinations. An Honours degree is awarded to students who successfully complete 360 credit points; 120 credit points (cp) at each level thereby. An Ordinary Degree is awarded to a student who successfully completes 120 cp at Level 4 (year 1), 120 cp at Level 5 (year 2) and a minimum of 60 cp at Level 6 (final year). A Diploma of Higher Education is awarded to a student who successfully completes 120 cp at Level 4 (year 1) and 120 cp at Level 5 but less than 60 cp at Level 6 (final year). A Certificate of Higher Education is awarded to students who successfully complete 120 cp at Level 4 but less than 120 cp at Level 5.

The BSc (H) Biological Sciences FT/SW degree is a modular based course allowing you to choose a specialised subject area usually at the end of the first half-year, but sometimes this decision can be changed at the end of the first year to a 'related' degree course. Such transfer is subject to you having passed all level 4 (year 1) modules, and acceptance by the Course Leader. The modules selected on the degree are designed to meet the course learning outcomes. Modules are mainly 20cp unless otherwise stated and are classified either as core or option. At Level 4 (year 1), in the second half-year you have a choice of 4 modules out of 6 with the choice indicating the degree you might ultimately take. At Levels 5 and 6 (year 2 and final year), most modules are core but there may be a choice of option modules depending on the pathway you choose. This provides flexibility within the curriculum for you to specialise in a specific aspect or maintain a broad basis of subject area. The structure of the curriculum is outlined below with an indication of module status (i.e., C = core; O = option).

### Level 4 (year 1)

Living Systems (C)

Practical Techniques for Biology (C)

Choice of 4 modules from:

1. Genetics and Immunology
2. Human Physiology
3. Introduction to Biochemistry
4. Introduction to Microbiology
5. Introduction to Pharmacology
6. Life on Earth
7. Natural Ecosystems
8. People and the Environment

Module choices will to a great extent determine the pathway within the Biological Sciences

degree course that will be studied from term 2 of the first year onwards:

Modules studied in year 1	Degree pathway
1, 2, 3, 4	BSc (H) Biological Sciences (Biochemistry and Microbiology) OR BSc (H) Biological Sciences (Biomedical Sciences)
4, 6, 7, 8	BSc (H) Biological Sciences (Ecology and Environmental Management) (accredited by CIEEM)
1, 2, 3, 5	BSc (H) Biological Sciences (Physiology and Pharmacology)

If you decide that you would like to transfer to one of our named degrees, you may be able to do this if you choose the appropriate modules in the second half year. These are:

Modules studied in year 1 (Level 4)	Transfer to named degree
1, 2, 3, 4	BSc (H) Biochemistry BSc (H) Microbiology BSc (H) Biomedical Science (accredited by the IBMS)
1, 2, 3, 5	BSc (H) Pharmacology

The modules selected on the degree are designed to meet the course learning outcomes. Modules are 20 cp unless otherwise stated and are classified either as core (C) or option (O).

### **Biochemistry and Microbiology pathway**

#### Level 5 (year 2)

Applied Microbiology (C)  
Introduction to Microbial Metabolism & Genetics (C)  
Molecular Biology and Protein Structure (C)  
Biochemical Techniques (C)  
Molecular Genetics of Human Diseases (C)

#### **One from:**

Antibody and DNA Technology (O)  
Professional Skills in Microbiology (O)

#### Level 6 (final year)

Cell Signalling and Cancer (C)  
Molecular Microbiology (C)  
Bioinformatics (C)

#### **One from:**

Immunology and Virology (O)  
Forensic Microbiology (O)

#### **AND one from:**

Research Project 40 cp (O)  
OR  
Short Dissertation (O) AND Communicating Science and Technology (O)

### **Biomedical Sciences pathway (non-accredited)**

#### Level 5 (year 2)

Metabolism and its Control (C)  
Molecular Biology and Protein Structure (C)  
Pathopharmacology (C)

#### **One from:**

Antibody and DNA Technology (O)  
Biomedical Science in Practice (O) (from 2016-17)

#### **AND one from**

Clinical and Public Health Microbiology (O)  
Pathophysiology (O)

#### **AND one from**

Clinical Biochemistry (O)  
Host-Pathogen Interactions (O)

#### Level 6 (final year)

Immunology and Virology (C)  
Cell Signalling and Cancer (C)

#### **One from**

Infectious Diseases and their Control (O)  
Histopathology (O)

#### **AND one from**

Bioinformatics (O)  
Haematology (O)

**AND one from:**

Research Project 40 cp (O)

OR

Short Dissertation (O) AND Communicating Science and Technology (O)

**Ecology and Environmental Management pathway**

Level 5 (year 2)

Behaviour and Population Dynamics (C)

Ecotourism (C)

Freshwater Ecosystems (C)

Field Investigations and Expedition Science (C)

Practical Conversation (C)

Terrestrial Ecosystems (C)

Level 6 (final year)

Atmospheric Pollution, Monitoring and Toxicology (C)

Environmental Forensic Assessment (C)

Sustainable Resource Management (C)

Regulating Environmental Impacts (C)

**AND one from:**

Research Project 40 cp (O)

OR

Short Dissertation (O) AND Communicating Science and Technology (O)

**Physiology and Pharmacology pathway**

Level 5 (year 2)

Antibody & DNA Technology (C)

Pathopharmacology (C)

Pathophysiology (C)

Neuroscience (C)

Host-Pathogen Interactions (C)

Physiology (C)

Level 6 (final year)

Current Topics in Pharmacology (C)

Current Topics in Physiology (C)

Clinical Pharmacology (C)

**One from:**

Current Topics in Neuroscience (O)

Toxicology (O)

**AND one from:**

Research Project 40 cp (O)

OR

Short Dissertation (O) AND Communicating Science and Technology (O)

Should you wish to transfer to one of the other named degrees after completing level 4 (year 1), here are their structures:

**BSc (Hons) Biochemistry**

Level 5 (year 2)

Metabolism and its Control

Molecular Biology and Protein Structure (C)

Clinical Biochemistry (C)

Antibody and DNA Technology (C)

Biochemical Techniques (C)

Molecular Genetics of Human Diseases (C)

Level 6 (final year)

Cell Signalling and Cancer (C)

Bioinformatics (C)

Current Topics in Biochemistry (C)

Comparative Developmental and Evolutionary Genetics (C)

**AND one from:**

Research Project 40 cp (O)

OR

Short Dissertation (O) AND Communicating Science and Technology (O)

**BSc (Hons) Biomedical Science (IBMS accredited)**

Level 5 (year 2)

Biomedical Science in Practice (C)

Clinical and Public Health Microbiology(C)

Clinical Biochemistry (C)  
Metabolism and its Control (C)  
Molecular Biology and Protein Structure (C)  
Pathopharmacology (C)

Level 6 (final year)

Research Project 40cp (C)  
Haematology (C)  
Histopathology (C)  
Immunology and Virology (C)  
Infectious Diseases and their Control (C)

**BSc (Hons) Microbiology**

Level 5 (year 2)

Professional Skills in Microbiology (C)  
Applied Microbiology (C)  
Clinical and Public Health Microbiology (C)  
Host-Pathogen Interaction (C)  
Introduction to Microbial Metabolism and Genetics (C)  
Microbial Structure, Identification and Distribution (C)

Level 6 (final year)

Immunology and Virology (C)  
Molecular Microbiology (C)  
Infectious Diseases and their Control (C)  
Forensic Microbiology (C)

**AND one from:**

Research Project 40 cp (O)  
OR  
Short Dissertation (O) AND Communicating Science and Technology (O)

**BSc (Hons) Pharmacology**

Level 5 (year 2)

Chemotherapy of Cancer and Infections (C)  
Pathophysiology (C)  
Pathopharmacology (C)  
Antibody & DNA Technology (C)  
Drugs of Addiction and Abuse (C)

**One from:**

Physiology (O)  
Neuroscience (O)

Level 6 (final year)

Current Topics in Pharmacology (C)  
Clinical Pharmacology (C)  
Toxicology (C)

**One from:**

Current Topics in Neuroscience (O)  
Current Topics in Physiology (O)

**AND one from:**

Research Project 40 cp (O)  
OR  
Short Dissertation (O) AND Communicating Science and Technology (O)

**11. Admission to the course**

For admission to the course, you will possess one of the following:

- five passes at GCSE grade C or above including English and Mathematics, and a minimum of 240 points accumulated from GCE A2/AS, AVCE, Advanced GNVQ with the proviso that there are two passes at A2-level (2 x 6 units) with one of them being Biology A2 (at least at Grade C) or 12-unit Advanced GNVQ in equivalent subjects;
- a pass in an appropriate FdSc (Foundation Degree) in biology. Students with FdSc Biological Sciences may be considered for year 2 entry;
- a pass in an appropriate BTEC certificate or diploma course, normally with the equivalent of 240 points (merit/merit/pass) in science subjects;
- a pass on an appropriate Access course, normally with a minimum of 21 credits at least sixteen (or 48 new credits) of which are at Level 6 (final year);

- qualifications equivalent to the above;

An applicant who does not fulfill the standard entry qualifications will be considered on an individual basis in line with the University's widening participation policy.

Mature students with alternative qualifications, proven relevant experience and necessary motivation are welcomed. All applicants are invited to visit the School. They are given a guided tour of the laboratories and campus, a talk on the structure and operation of the courses, and some hands-on laboratory "tasters". Applicants' questions are answered at this time. Prospective students are not normally interviewed.

Applicants whose first language is not English are expected to have a good command of spoken and written English. The minimum requirement is the British Council IELTS grade 6.5 or its equivalent. Equivalent experience may include the successful completion of a non-UK degree in the English language or a significant period of residence/work placement in an English speaking country, for which evidence should be provided.

## 12. **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 Academic Team. The Course Leader, with support from the Courses Manager, Year Tutors, Module Leaders, personal tutors and academic staff teaching on these modules take responsibility for student support for learning.

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.

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

There is a wide range of career opportunities relating to biological sciences, or postgraduate studies, which our students enter on completion of the course. Career opportunities arising from your degree include in research laboratories in industry; technical, sales and management positions; work in environmental consultancy; 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 Standards and Quality report and external examiners' comments. 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:

16. **Additional Information**

Collaborative partner(s):	None
Course referenced to national QAA Benchmark Statements:	Biosciences
Course recognised by:	
Date implemented:	1 <sup>st</sup> September 2016
Any additional information:	Updated 1 <sup>st</sup> July 2016