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:	MRes Biotechnology MRes Cancer Biology (BIOL134, 135, 146, 150) MRes Cell Biology (BIOL136, 137, 151, 152) MRes Molecular Microbiology (BIOL138, 139, 153, 154)) MRes Molecular Biology (BIOL140, 141, 155, 156) MRes Neuropharmacology (BIOL142, 143, 157, 158) MRes Pharmacology (BIOL144, 145, 159, 160) FT and PT
4. Normal Duration:	1 year FT; 2 years PT
5. UCAS Code:	BIOL (see above)

6. Overview and general educational aims of the course

This exciting course is designed to give you the theoretical and practical skills needed to enter a career in your chosen subject area either in an academic institution, a research institute or in the industrial/business sector. In particular, it will give you the opportunity to develop your practical skills through an extended laboratory-based research project. It will also enable you to develop an ability to plan a research project, apply effective data analysis skills to your results, and to communicate your findings in an articulate and professional manner. The course also offers you the opportunity to develop virtual entrepreneurial skills and study ethical and business issues relevant to bioscience research and development.

This course is ideal if you are either:

- a recently qualified graduate with the equivalent of a very good UK honours degree with practical experience and are looking for the professional skills needed for a career in bioscience research;
- are working for a company in a related area and want a masters-level qualification to give you a competitive edge;
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In summary, the course aims to:

- provide an intellectually challenging and professionally relevant course at the forefront of biosciences research, led by academic and professional experts;
- explain how the boundaries of knowledge in this discipline are advanced through research and enable you to conduct research through an extended, academically rigorous project;
- give you opportunities to deal with complex issues in a systematic and creative way and show originality in solving problems;
- develop the theoretical and practical skills needed to plan and execute an in-depth laboratory-based research project;
- produce post-graduates who have sound judgement, personal responsibility and initiative, thus making them attractive to employers.

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	discuss critically and communicate clearly the ideas and concepts inherent in a relevant biological discipline;

	CLO2	assess the scientific impact of current and future developments in a relevant biological discipline;
	CLO3	identify current issues in a relevant discipline and demonstrate a critical understanding of research methods required for proposing, planning, and carrying out effective PG level research into these.
		Skills, qualities and attributes By the end of the course you should be able to:
	CLO5	apply appropriate scientific methods and reasoning to the analysis of complex problems in a relevant discipline;
	CLO6	evaluate, critically appraise and use information and approaches in a relevant discipline;
	CLO7	Plan, undertake and communicate the findings of an independent, novel extended laboratory based project in a relevant discipline;
	CLO8	work constructively and cooperatively as an individual and as a team member, exercising a range of interpersonal skills.
8		**Teaching and Learning Methods**
		The research project is the main focus of the MRes course. If you are a full-time student, you will have the opportunity to carry out a project in a well-established research group at Nottingham Trent University; The principal means of delivering the taught aspects of the course is by lectures and guided reading, supported by the University's virtual learning portal and other electronic facilities; Workshops may also be used, in which you will be required to undertake independent work and examination of case studies for discussion and development with colleagues, academic staff and practitioners; You will be given extensive guidance and practice in written and oral presentation skills with appropriate feedback; You will also get extensive guidance and practice in the design, execution and reporting of research investigations, and this will be put into practice in the project; We enhance the delivery of the course by the direct involvement in course design and delivery of our most research active staff in the teaching team, and by encouraging your attendance at regular research seminars both within and outside the School. 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 provide evidence to help you 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 techniques to ensure that you can demonstrate a range of learning outcomes. Formative assessment of your knowledge, understanding and presentation will be given during allocated slots in the teaching course. Summative assessment of the course may be by a combination of a variety of in-course assessment methods including oral presentations, written essays, and written critiques of published papers. Some modules will also be assessed by examination in addition to the in-course assessment. The Research Project module will involve the design, implementation and reporting of a major research task. You will communicate your findings at an interim stage of the project in peer-reviewed journal format and you will present your findings orally to your peers and to members of the Course Team. Assessed work will take one or more of the following forms: <u>Research Project thesis</u>

This thesis assesses your ability to design and implement a course of research, and communicate the findings to an informed audience in a comprehensive thesis, written in an appropriate scientific style.

Written assignment

This tests your writing skills. You are expected to consider the scientific problems of the assignment topic and the way in which they have been resolved; this must be fully referenced from the current literature.

Case studies

These are practical exercises to test your ability to apply your theoretical knowledge and skills in a given area. Here you will have to deal with complex issues in a systematic and creative way and show originality in solving problems posed in the case studies. Interpretative assignments are included in this category.

Oral presentation

This assesses your oral communication skills. You will be assessed on your ability to communicate cogently using appropriate visual aids. You will also be assessed on your ability to answer questions with knowledge and authority.

Poster presentation

This is a written poster display of the findings of your research project or of a specific taught module task. It tests your ability to synthesise arguments and present them in a highly condensed, accessible and pictorial form. You will need to defend the work verbally to members of the Course Team.

Laboratory report

This may take the form of a short report (laboratory file) or a long report (formal report) with extensive data analysis and interpretation.

Formal examination

Examinations are used as a means of ensuring your ability to integrate material and apply previously learned knowledge under time constraints.

Skills portfolio

The skills portfolio allows students to collate practical and transferable skills acquired over the course of the Master's degree in a format suitable for sharing with a future employer. Evidence of skills will be presented within the portfolio along with some reflection on progression and development throughout the course.

Computer based tests or computer aided learning packages may also be used as part of the Course assessment.

10 Course structure and curriculum

The MRes course is a one year full time or two year part time course. The duration of the academic year comprises 30 weeks divided into 3 terms with a number of modules delivered in term 1 and others in term 2, however the research project practical work usually starts within a month of starting and continues until the end of July, with submission of the thesis and presentation of the research by poster in early September for October starters or in November for January starters. The full year consists of 180 credits of modules. All your modules are 20 credits, except for the 120 credit Research Project. An indicative course structure is given below.

Contact hours for a 20cp modules are typically around 50 hours, with a further 150 hours expected from you for directed and independent study.

You will be given a choice of research topics or may approach staff with ideas of your own. The topic of the research is agreed with individual academic staff supervisors, and is exploited for assessments linked to the *Research Methods & Bioethics* module.

A number of modules are shared by other MSc courses however the clear distinctiveness of the pathway lies in the combination of these modules and the chosen research project. A summary of the MRes course structure is given below along with details of the core modules. Some of the pathways include optional modules and choice of the appropriate module will be supported by the Course Leader.

Module title (core research focussed modules)
Research Project 120 cp A full-time extended (9-10 months) research project in an area that fits with the chosen pathway. The Masters Skills portfolio will be assessed as part of this module
Research Methods and Bioethics 20 cp Development of skills in the use of software packages for statistical analysis of data; how to plan, write and deliver oral presentations, posters and research proposals.

Other pathway specific modules

Pathway → / Module ↓	Biotechnology	Cancer Biology	Cell Biology	Molecular Microbiology	Molecular Biology	Neuro-pharmacology	Pharmacology
Core Research modules:							
Research Methods & Bioethics (20 cp)	C	C	C	C	C	C	C
Research Project (120 cp)	C	C	C	C	C	C	C
Other modules:							
Business & Enterprise	O		O				
Cell Culture & Antibody Technology	O	C	C				
Molecular Biology	O				C		
Molecular Microbiology				C			
Microbial Diagnostics				O			
Cognitive Neuroscience						C	
Special Topics in Biotechnology	C						
Techniques in Macromolecular Analysis	O		O		C		
Biology of Disease		C					
Pharmacology							C
Neurophysiology						C	C
Medical Microbiology**				O			
Drug detection, analysis & Screening							

** Mixture of e-learning and guided tutorial/workshops

An indication of the course structure for MRes Cluster of Courses.

October- December	January - March	April - September
Research Project (C, 120 cp)		
Research Methods & Bioethics (C, 20 cp)	Special Topics in Biotechnology (e) (20 cp)	
Cell Culture & Antibody Technology (20 cp)	Business & Enterprise (20 cp)	
Molecular Biology (20 cp)	Microbial Diagnostics (20 cp)	
Molecular Microbiology (20 cp)	Techniques in Macromolecular Analysis (20 cp)	
Medical Microbiology (e) (20cp)	Pharmacology (20 cp)	
Cognitive Neuroscience (20 cp)		
Neurophysiology (20 cp)		
Biology of Disease (20 cp)		

C: core modules. The e-learning modules could be taken at any point within the year to increase flexibility and the actual course structure will depend upon the choices made by the student and are subject to timetabling. January start students will take the e-learning version of Research Methods & Bioethics which will commence in January.

11 Admission to the course

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

- an Honour's degree in a biological subject from a United Kingdom or equivalent University, the minimum degree category for entry to the course will normally be at least a 2i, or its equivalent;
- Overseas applications will based on the NARIC equivalent of the above (see below), but will be expected to have demonstrable laboratory experience;
- a professional qualification of equivalent status;
- any other qualification and experience as the Admissions Panel shall deem equivalent in subject content and level of attainment.

Additionally, overseas students will normally be expected to have a level of English language capability demonstrated by attainment of IELTS to grade 6.5, or 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. This requirement is made clear to the students in the course literature before they apply for the course. Students who marginally fail to reach the above criteria are expected to attend a pre-term English language course for overseas students, organised by Nottingham Trent University. Those who wish to continue improving their proficiency in English are encouraged to continue attending in-session courses run by the University's English Language support Unit.

12 Support for Learning

We will work with you to ensure that you settle into your new academic environment and that your studies go well, and you will find that there are lots of people to support you at Nottingham Trent University.

All students at Nottingham Trent University have full access to Student Support Services. In addition, School based support networks are in place to offer you

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 Courses Manager, Course Leader, Module Leaders, and Course Tutors, takes responsibility for student support and guidance. The Module Leader will offer guidance and support to students taking each specific module.

Academic staff can be contacted by e-mail, telephone, letter, or in person.

As a new student you will experience a week long induction period at the commencement of the academic year. Induction will inform you about:

- Student Support Services at University, School and Course level;
- International Student Support
- 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.

During your induction you will be assigned a Course Tutor and informed about the best way to get in touch with your Course Leader and Module tutors. You will have regular time-tabled sessions with your Course Tutor, in small groups. Your group tutorials will help you to reflect on your approaches to study and make connections between modules, integrating material from across the curriculum and encouraging you to achieve your maximum potential. You will also have an opportunity to discuss and deal with any personal or course-related issues which may be affecting your studies and get advice on what support the university can offer. Course tutorials can also be used for personal development planning and skills development.

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

In terms of research project topic, you will have the opportunity to provide a ranked list of choices from those put up by academic staff for the courses. You will be advised to speak to individual staff and to carry out some initial research to determine which area you are most interested in. The project supervisor will act as the main avenue of support during the *Research Project*.

13 Graduate destinations / employability

There are a wide range of career opportunities available to MRes Biosciences graduates. You will work with leading academics on your course, so you will have gained important academic and professional skills necessary to help you obtain employment in your chosen field. At the end of the course, you will also have developed many transferable skills that will make you more attractive to potential employers. The Research Project will give you the skills you need to follow a career in research and development.

The University's Careers Service has an enviable reputation for helping our graduates find employment and offers individual consultations. Sessions are available to all students at NTU on CV writing and interview technique.

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. 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:
	The Masters degree is classified (Distinction, Commendation or Pass). The specific criteria for each classification will be set out in the course documentation and follow the grade based assessment scheme.
16	**Additional Information** Collaborative partner(s): None Course referenced to national QAA Benchmark Statements: Yes Course recognised by: N/A Date implemented: October, 2014 Any additional information: None