Nottingham Trent University Course Specification

	Basic Course Information	
1	Awarding Institution:	**Nottingham Trent University**.
2	School/Campus:	**School of Science and Technology/Clifton campus**
3	Final Award, Course Title and Modes of Study:	**BSc Medicinal Chemistry FT**
4	Normal Duration:	**3 Years FT (4 Years SW)**
5	UCAS code:	

6 Overview and general educational aims of the course

The BSc courses in Chemistry provide an in-depth education to stimulate enthusiasm for chemistry and to develop key transferable scientific skills enabling the application of chemistry and related topics in society, to the world of work and as part of life-long learning. Through practical applications of theoretical knowledge you will acquire the skills and attributes expected by employers or for postgraduate studies.

Chemistry provides you with the opportunity to study the characteristic properties of elements and their compounds, the nature and behaviour of functional groups in organic molecules,
major synthetic pathways in organic chemistry, the application of thermodynamics and kinetics of chemical change including catalysis, the principal techniques of structural investigations including spectroscopy, the principles and procedures used in chemical analysis and the characterisation of chemical compounds. Related areas include bioscience, materials and environmental sustainability together with aspects of chemical technology and computation. We offer you high quality, modern facilities for practical work and lectures. Practical work forms a large proportion of learning to ensure that you have extensive skills for employment or research.

The aims of the course are:

- to stimulate enthusiasm for the studying, learning and application of chemistry and chemistry related topics in society;
- to provide a recognisable knowledge base for, and an understanding of the fundamental principles, concepts and terminology of theoretical and practical chemistry;
- to promote the development of the student to work logically and critically in the evaluation of theoretical and practical problems;
- to foster in students a professional approach to safe working practices and environmental issues;
- to provide and allow students to develop key scientific transferable skills applicable to the world of work and life-long learning;
- to give strong emphasis to aspects of organic chemistry relating to drug design and synthesis;
- to highlight the role of medicinal chemistry in pharmaceutical and related industries;
- to provide a coherent background in pharmaceutical and medicinal science to facilitate communication with specialists.

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:

K1. Demonstrate knowledge, understanding and critical evaluation of essential terminology, facts concepts, principles and theories of medicinal chemistry and related topics.

K2. Execute an experiment or investigation in a safe and reliable manner, record the data professionally, analyse the results and draw valid conclusions - recognising the limits of the data produced.

K3. Recognise and analyse both qualitative and quantitative problems, and plan strategies for their solution, applying enterprise and creativity, where necessary.

K4. Operate standard chemical instrumentation and carry out standard laboratory procedures in synthesis, measurement and analysis, particularly with respect to the pharmaceutical industry.

K5. Find, manage and process information and data and present your findings clearly and correctly in a written or oral format suitable for a range of audiences.

K6. Acquire, interpret and analyse chemical information from a variety of sources to suggest solutions to problems and issues affecting the pharmaceutical industry and society including aspects of ethics, environmental impact and sustainability.

K7. Demonstrate critical understanding of key issues related to the chemicals/pharmaceuticals industry and to be able to identify and evidence attributes suitable for employment in such industries.

Skills, qualities and attributes. By the end of the course you should be able to:

S1 Analyse, interpret and evaluate data and information retrieved from a variety of sources; giving and receiving feedback effectively including judgement of own efficacy.

S2 Show skills in the carrying out of a range of practical procedures and using instrumentation safely and to a professional standard.

S3 Demonstrate good written and oral communication skills, presenting material effectively in a range of formats and media

S4 Use appropriate software packages and IT systems to analyse data, model systems and retrieve information.

S5 Prioritise, plan and implement efficient and effective modes of working using time management and organisational skills

S6 Work on your own in an independent manner, or with others as part of a team.

S7 Manage your own learning and make use of appropriate texts, information sources and other resources.

S8 Develop a portfolio to showcase your development of a range of chemistry related competencies, and your academic and employability skills

All of the above learning outcomes K 1-7 and S1-8 support Chemistry Benchmark Statements QAA 2014

8 **Teaching and Learning Methods**

You will experience a wide range of teaching and learning methods including laboratories, lectures, seminars, individual and group presentations and problem solving tutorials. In many modules, your teaching and learning is focused on lectures supported by practical laboratory classes. Laboratory work develops hands-on practical skills, problem solving and data collection. Further time is allocated to the analysis, interpretation and evaluation of the results both inside and outside these practical classes. Much of the theory introduced in lectures is consolidated through these laboratory sessions and through tutorials. The location of academic accommodation allows staff to practise an effective 'open door' policy for students outside of formal contact hours. You will be expected to carry out supplementary reading to enhance and consolidate taught material progressively becoming a self-motivated and independent learner. Lecture material is supported through e-resources. The University Virtual Learning Portal, NOW (N(TU) On-line Workspace), is used to post summary slides of lectures and for information about the organization of modules and the course. Teaching of the Medicinal Chemistry degree is enhanced by external speakers and by inputs from

Careers staff. Opportunities will exist for you to improve your communication skills by writing reports in various formats, by producing posters and by giving oral presentations to your colleagues.

9 Assessment Methods

The course utilises a variety of assessment methods to enable you to demonstrate your achievement of the learning outcomes. Subject knowledge and understanding is mainly assessed by unseen examinations, short answer tests, laboratory reports, oral and poster presentations.

Laboratory experiments and reports are used to assess a range of practical skills relating to preparation, observation, recording, interpretation and analysis.
Your communication skills are assessed in written, oral and graphical formats in examinations, laboratory reports, essays poster presentations and oral defence.

Normally the balance of assessment on the course is 60% coursework and 40% examination at Level 4; 50% coursework and 50% examination at Level 5; and 40% coursework, 60% examination at Level 6 but the assessment strategies used within a particular module are chosen to be the most appropriate for that aspect of study.

10 Course structure and curriculum

The academic year comprises 30 weeks divided into 3 terms. Teaching and learning takes place for 26 weeks with the final 4 weeks of each year being set aside for examinations. The BSc (H) Medicinal Chemistry is awarded for the successful completion of 360 cp, 120 at each of the levels 4,5 and 6. An Ordinary Degree is awarded to a student who successfully completes 120 cp at Level 4, 120 cp at Level 5 and a minimum of 60 cp at Level 6. A Diploma of Higher Education is awarded to a student who successfully completes 120 cp at Level 4 and 120 cp at Level 5 but less than 60cp at Level 6. A Certificate of Higher Education is awarded to students who successfully complete 120 cp at Level 4 but less than 120cp at Level 5.

The BSc (H) Medicinal Chemistry degree is modular with modules selected to meet programme learning outcomes. The structure of the curriculum is outlined below with an indication of the module status (i.e., C = core; 0 = option). Core modules are compulsory but option strands enable you to choose themes of pharmaceutical, materials or sustainable chemistry.
The language option makes the BSc programme eligible for Eurobachelor status

<u>Level 4</u>
Introduction to Organic Chemistry (20 cp) (C)
Introduction to Inorganic Chemistry (20 cp) (C)
Introduction to Physical Chemistry (20 cp) (C)
Introduction to Analytical Chemistry (20 cp) (C)
Professional Development (20 cp) (C)
Introduction to Specialist Areas of Chemistry (20 cp) (C)
<u>Level 5</u>
Organic Chemistry (20 cp) (C)
Inorganic Chemistry (20 cp) (C)
Physical Chemistry (20 cp) (C)
Analytical Chemistry (20 cp) (C)
Professional Practice (20 cp) (C)
Pharmaceutical Chemistry (20 cp) (C)
<u>Level 6</u>
Advanced Chemistry (20 cp) (C)
Advanced Organic Chemistry (20 cp) (C)
Advanced Medicinal Chemistry (20 cp) (C)
Project 40 (40 cp) (C)
And your choice of one from:
Advanced Chemical Analysis (20 cp) (O)
Nano and Green Technology (20 cp) (O)
Communicating Science and Technology (20 cp) (O)
Provided that you have passed every module, the classification of the degree you are awarded depends on the overall degree aggregate, according to the following table:

13 - 16	First class honours degree	1
10 - 12	Upper second class honours degree	2.1
7 - 8	Lower second class honours degree	2.2
4 - 6	Third class degree	3

11 Admission to the course

The specific requirements normally required for entry onto the BSc Chemistry degrees will be as follows:

- five passes at GCSE grade C or above including English and Mathematics and a minimum of 260 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 Chemistry A2 of grade C or better or 12-unit Advanced GNVQ in equivalent subjects;
- a pass in an appropriate Foundation Degree. Students with FdSc Chemistry may be considered for year 2 entry;
- a pass in an appropriate BTEC certificate or diploma programme, normally with the equivalent of 260 points in science subjects;
- a pass on an appropriate Access programme, normally with a minimum of sixteen credits (or 48 new credits) at Level 3;
- qualifications equivalent to the above;

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

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 Academic Team Leader, with support from the Programme Leader, Module Leaders 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 Programme level;
- University policies and procedures on academic systems;
- Personal development planning;
- Timetable issues, room allocations and location;
- University, School and Programme Handbooks;
- Enrolment procedures;
- Computing, IT and Library services;
- Health and Safety procedures.

13 Graduate destinations/ employability

There is a wide range of career opportunities relating to chemistry, or postgraduate studies, which our students enter on completion of the course. Employment opportunities include research and development in the UK chemical industry, comprising some 3,500 companies and manufacturing's number one exporter for Britain, as well as international chemical and pharmaceutical companies and a multitude of related areas such as forensic science, bioscience, environmental monitoring and analysis, teaching, marketing, management, computing and accountancy etc.

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:

Normally:
Level 1: 60% coursework : 40% examination
Level 2: 50% coursework : 50% examination
Level 3: 40% coursework : 60% examination

Dispensation from the University Common assessment Regulations has been granted such that 40cp compensation is permissible at each level.

BSc honours awards are generally based on an aggregate of 25% level 5 and 75% level 6 marks, or a 'majority grade'. (See handbook for details)

16 Additional Information

Collaborative partner(s):

Course referenced to national QAA Benchmark Statements: Chemistry 20014

Course recognised by: Royal Society of Chemistry.

Date implemented: 1 September 2019

Any additional information: