

# Nottingham Trent University Course Specification

## Basic Course Information

1	Awarding Institution:	<b>Nottingham Trent University.</b>
2	School/Campus:	<b>Science and Technology/ Clifton Campus</b>
3	Final Award, Course Title and Modes of Study:	<b>MChem (Hons) Chemistry FT</b>
4	Normal Duration:	<b>FT 4 years</b>
5	UCAS code:	<b>F103     NTU code CHEM048</b>

## 6 Overview and general educational aims of the course

The MChem (Master of Chemistry) course is an undergraduate Integrated Masters qualification taking you from university entry level to Masters level. It combines learning outcomes at bachelors and masters levels. The main branches of chemistry are developed further without the discrete specialisation associated with MSc and MRes postgraduate study. Integrated Master's qualifications are essentially unique to the UK and are currently the most common route to master's level for its chemistry students. It is the ideal qualification for those wishing to become career chemists and for those wishing to progress to PhD 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 you to develop key scientific transferable skills applicable to the world of work and life-long learning;
- to provide an in-depth education to an enhanced level across the major branches of chemistry;
- to produce graduates well qualified to embark on a career in chemical research;
- to introduce students to the management aspects of a chemist's role in industry.

Accredited by the Royal Society of Chemistry as contributing towards CChem Chartered Chemist status.

## 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 (GA1) demonstrate extensive knowledge and understanding and critical evaluation of

essential terminology, facts concepts, principles and theories of chemistry and related topics

- K2(GA2)independently plan and implement good , safe measurement science and practice with systematic reliable recording and documentation of data and its critical evaluation and interpretation in relation to qualitative and quantitative problem solving
- K3(GA3) recognise and analyse novel problems and plan strategies for their solution and apply enterprise and creativity, where necessary
- K4(GA6) apply knowledge of computational and data processing skills to data acquired from a variety of sources and present scientific material and arguments clearly and correctly in writing or orally to a range of audiences
- K5 (GA5;GA12) acquire, interpret and analyse chemical information from a variety of sources to inform judgements on scientific, social and ethical issues including environmental sustainability
- K6 (GA11;GA13) demonstrate understanding of major issues currently at the frontiers of chemical research and development internationally and be prepared to inform public debate

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

- S1 (GA10) analyse, interpret and evaluate critically, data and information retrieved from a variety of sources giving and receiving feedback effectively including judgement of own efficacy
- S2 (GA7) communicate effectively in spoken, written and visual media
- S3 (GA9) prioritise, plan and implement efficient and effective modes of working using time management and organisational skills
- S4 (GA8) autonomously or collaboratively as part of a team, work and communicate effectively
- S5 (GA4) develop enthusiasm for self- directed learning and the study skills needed for continuing professional development and informed career management choices.

All of the above learning outcomes K 1-6 and S1-5 support Chemistry Benchmark Statements QAA 2007

GA = NTU Graduate Attributes

Graduate Attributes:

Intellectual Agility

- GA1 Extensive understanding of their chosen profession or discipline, including the associated practices, technologies, research, methodologies, values and ethics
- GA2 Aptitude for independent, critical thought and rational enquiry, alongside the capacity for analysis and problem solving in multiple contexts
- GA3 An enterprising and creative mindset, able to thrive in rapidly changing work and social environments
- GA4 Intellectual curiosity, enthusiasm for learning and an aptitude for self-directed learning

Information, Communication and Organisational Skills

- GA5 Proficiency in finding, evaluating, analysing and applying data

- GA6 Digital literacy and the ability to use ICT effectively
- GA7 Effective communication skills in spoken, written and visual media
- GA8 Good team and collaborative working skills
- GA9 Ability to prioritise, plan and manage work and time
- GA10 capacity to appropriately judge self-efficacy and to give and receive feedback effectively

#### Global Citizenship

- GA11 International awareness and openness to the world, based on appreciation of social and cultural diversity, respect for human rights and dignity
- GA12 Understanding and appreciation of social, economic or environmental sustainability issues
- GA13 Leadership capacity, including a willingness to engage in constructive public discourse, and to accept social and civic responsibility.

### 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 MChem 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 Levels 6 and 7 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.

You need to obtain 480cp (credit points) to gain the honours qualification. Your final classification is based on your Level 6 (year 3) mark (50%) and your Level 7 (final year) mark (50%).

A threshold aggregate of 60% at level 5 is required to remain on the MChem course.

Students who do not obtain enough credit points may be eligible for the following awards Certificate in Higher Education (120cp); Diploma in Higher Education (240 cp) or BSc Ordinary Degree (300 cp)

The MChem (H) 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; O = option). Core modules are compulsory but option strands enable you to choose themes of pharmaceutical, materials, instrumental/sustainable chemistry or chemical technology. The language option makes the programme eligible for Eurobachelor status.

### Level 4

- 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)

### Level 5

- 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)

*And your choice of one from:*

Modern Day Materials (20 cp) (O)

Pharmaceutical Chemistry (20 cp) (O)

Applied Instrumental Analysis (20 cp) (O)

Chemical Technology (20cp) (O)

Level 6

Advanced Inorganic Chemistry (20 cp) (C)

Advanced Organic Chemistry (20 cp) (C)

Advanced Physical Chemistry (20 cp) (C)

Advanced Chemistry (20 cp) (C)

Research Methodology (20 cp) (C)

*And your choice of one from:*

Advanced Chemical Analysis (20 cp) (O)

Chemotherapeutics (20 cp) (O)

Nano and Green Technology (20 cp) (O)

Communicating Science and Technology (20 cp) (O)

Level 7

Project (60 cp) (C)

*And your choice of three from:*

Organic Synthesis and Characterisation of Biologically Active Compounds (20 cp) (O)

Inorganic Chemistry Beyond the Molecule (20 cp) (O)

Physical Properties of Materials (20 cp) (O)

Drug Detection Analysis and Screening (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:

70% and over	First class honours degree	1
60%-69%	Upper second class honours degree	2.1
50%-59%	Lower second class honours degree	2.2
40%-49%	Third class degree	3

**11 Admission to the course**

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

**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 Chemistry Academic Team. The Head of Department, with support from the Course Manager, Course Leader(s), Module Leader(s), and Personal Tutor, 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 minimum of a 3 day induction period at the commencement of their first academic year. Induction will inform you about:

- 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.

During your induction you will be assigned a Personal Tutor and informed about the best way to get in touch with your Course Leader and Module tutors. Every year, you will have regular time-tabled sessions with your Personal 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. Personal tutorials can also be used for personal development planning and skills development.

Student Mentors are also used to provide you with learning support. Student Mentors are typically students at Level 5 and above of their course, who provide some form of mathematics, academic

writing or module-specific support. Such support is usually available on a 'help desk' basis.

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](http://www.ntu.ac.uk).

**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:

**16 Additional Information**

Collaborative partner(s):

Course referenced to national QAA

Benchmark Statements: Chemistry 2007

Course recognised by: Royal Society of Chemistry.

Date implemented: 1 September 2016

Any additional information: