



# MSc in Chemistry by Negotiated Learning

## UCD School of Chemistry and Chemical Biology



### Why is this course for me?

The MSc in Chemistry by negotiated learning is a flexible MSc programme delivered through the UCD School of Chemistry and Chemical Biology. Within the programme students select a collection of credit-bearing modules from a wide selection of taught modules. The particular choice of each student (is made in collaboration with the programme co-ordinator) and is matched closely to the student's needs.

For example, students wishing to broaden their understanding of chemistry would chose a range of modules from across the entire chemical science discipline, while those that are intent on following up this course with a doctoral programme might chose to concentrate on available modules in a specific area, e.g. chemical biology, medicinal or pharmaceutical chemistry, nanochemistry, sustainable chemistry, materials chemistry etc. For this reason it is useful for students that wish to progress to industry or to further research.

### Why study at University College Dublin?

Some of the reasons to study at UCD:

- In the top 1% of the world's universities
- Ireland's largest provider of graduate education
- A diverse university, both in academic disciplines and culture
- Emphasis on research and innovation
- Purpose-built, modern parkland campus, close to Dublin city centre
- Extensive range of campus accommodation options.

### UCD College of Science

The College is dedicated to the creation, delivery and communication of new knowledge and innovation across the spectrum of Science. With a staff of 750 and a student population of 5,500, including 1,800 postgraduate students, the College is a vibrant community dedicated to excellence in all our pursuits.

### UCD School of Chemistry and Chemical Biology

The UCD School of Chemistry and Chemical Biology has a rich tradition of teaching, research and innovation in the chemical sciences that can be traced back over 200 years. Currently we have 21 faculty members, 100 graduate students, 35 postdoctoral fellows, and a typical graduating undergraduate class of 60 students. Our faculty, who hail from widespread parts of the globe, are world renowned

researchers in the three main disciplines of chemistry. Our post graduate and postdoctoral researchers in particular are from all parts of the world with representatives of over 40 countries studying here over the past 10 years.

We offer a range of undergraduate programmes (Chemistry; Medicinal Chemistry and Chemical Biology; Chemistry with Environmental and Sustainable Chemistry; Chemistry with Biophysical Chemistry) and graduate degree programmes (Taught MSc in Chemistry by Negotiated Learning; Research MSc and thematic PhDs). A thematic PhD is offered through Dublin Chemistry, a joint Postgraduate Programme in Chemistry with the Department of Chemistry in Trinity College Dublin.

The School has a superb research environment with world leading research groups and recently refurbished state-of-the art facilities, a large and vibrant PhD programme with a wide variety of research topics. Our research activities span the core disciplines of organic, inorganic, and physical chemistry and the interdisciplinary frontiers of the life and physical sciences.

### What will I study?

The 90 credit MSc is a 12 month programme. During semesters 1 and 2 the students register for a range of taught modules. These modules carry between 2.5 and 7.5 credits. During the third semester the students are placed within the research groups of a member of staff in the school and here they carry out a 3 month research project (which carries 30 credits).

The specific material studied will – to a large extent – depend on the choices of the incoming student since the programme will be modelled according to their particular requirements.

However modules will be offered across all the major themes of chemistry including advanced synthetic organic and inorganic chemistry, surface science, materials chemistry, advanced spectroscopy, advanced crystallography, commercialisation of laboratory research, biological, medicinal and pharmaceutical chemistry, sustainable and environmental chemistry, nanochemistry, biophysical chemistry, polymer chemistry, computational chemistry etc.

## Research Projects



The research project that the student will carry out will be hosted within the research laboratories of one of the faculty members of the school. These recently refurbished laboratories are state-of-the-art.

Since the faculty have an extremely wide range of research interests, the types of projects that students can carry out will vary widely.

These can range from purely synthetic projects where novel pharmaceutical compounds are synthesised and analysed, to projects in environmental chemistry where gas phase pollutants are monitored to projects where solid phase catalysts are applied in biofuel production or nanochemistry projects where nanomaterials are synthesised characterised and applied in a range of areas. The research interests of the faculty members are covered on the school's staff members website - <http://www.ucd.ie/chem/staff/>

The MSc students meet our faculty through the taught components in semesters 1 and 2, are encouraged to discuss possible projects with them and then are assigned project supervisors midway through semester 2. As with all parts of the course the assignment is done in collaboration with the student. The projects run through semester 3.

## Staff Profile and Testimonial

### Staff

**Dr. Xiangming Zhu, Lecturer**

**School of Chemistry & Chemical Biology**

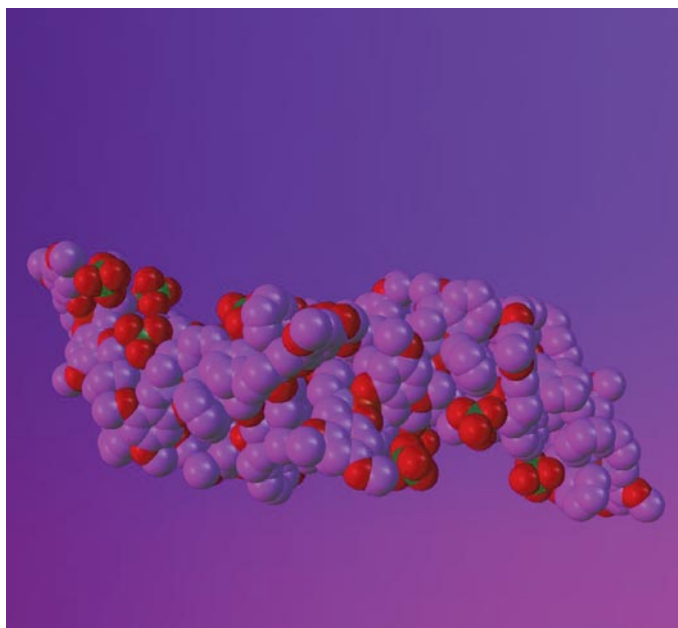


The MSc in Chemistry by Negotiated Learning taught programme trains students to a high level of knowledge and proficiency in a specialised area of chemistry such as Medicinal Chemistry, Chemical Biology, Pharmaceutical Chemistry, Energy and Sustainable Chemistry, Biophysical Chemistry or Nanotechnology. Students participate in laboratory work based in our newly developed ergonomic, high specification, modern laboratories in the UCD Science Centre. Our core facilities are at internationally competitive levels, including NMR spectrometry, Mass Spectrometry/Chromatography, X-ray crystallography and Microanalysis.

## What are the career opportunities?

The MSc in Chemistry through negotiated learning provides a basis for graduates to enter the chemical, pharmaceutical, bio-pharmaceutical and materials industries and UCD graduates have traditionally found employment within these sectors. Analytical services, environmental protection and primary and secondary school teaching present other possible opportunities.

Furthermore, through judicious choice of modules within one particular sub discipline of chemistry the programme is an attractive route into a doctoral programme, i.e. students can get an in-depth grounding (including a small research project) in a particular area of chemistry such that you can hit the ground running in a PhD in that area.



## How do I apply?

### Entry Qualifications

1. Applicants should possess a minimum of an upper level 2nd class (2Hi) in an honours degree in Chemistry or equivalent, or a degree with a significant component of Chemistry is required.
2. Since the language of instruction of this Programme is English, competence in both spoken and written English is mandatory. If the primary degree is not in English, the candidate must provide evidence of competence in the English language by producing an English language certificate. Accepted as language proofs are: 550 points in TOEFL (Test of English as a Foreign Language) or 6.5 points in IELTS Academic Test (International English Language Testing System). Required appropriate scores for other types of English language examination are available on the UCD website.

### Contact

Dr. James Sullivan, Email: [james.sullivan@ucd.ie](mailto:james.sullivan@ucd.ie)

### Applying Online

To apply online, please go to: <http://www.ucd.ie/apply>

### Fee Information

For information on fees, please visit: [www.ucd.ie/registry/adminservices/fees](http://www.ucd.ie/registry/adminservices/fees)

### Useful Links

<http://www.ucd.ie/chem/staff/>