

MSci Chemistry with a Year of Science Communication

This document provides a definitive record of the main features of the programme and the learning outcomes that a typical student may reasonably be expected to achieve and demonstrate if s/he takes full advantage of the learning opportunities provided. This programme specification is intended as a reference point for prospective students, current students, external examiners and academic and support staff involved in delivering the programme and enabling student development and achievement.

Programme Information

| | | | | |
|--|--|-----|-------|-----|
| Award(s) | MSci | | | |
| Programme Title | Chemistry with a Year of Science Communication | | | |
| Programme Code | F1SC | | | |
| Awarding Institution | Imperial College London | | | |
| Teaching Institution | Imperial College London | | | |
| Faculty | Faculty of Natural Sciences | | | |
| Department | Department of Chemistry | | | |
| Associateship | Royal College of Science | | | |
| Mode and Period of Study | 5 academic years, full-time | | | |
| Cohort Entry Points | Internal transfer only | | | |
| Relevant QAA Benchmark Statement(s) and/or other external reference points | Master's Degree in Chemistry | | | |
| Total Credits | ECTS: | 300 | CATS: | 600 |
| FHEQ Level | Level 7 | | | |
| EHEA Level | 2 nd cycle | | | |
| External Accreditor(s) | Royal Society of Chemistry | | | |
| Specification Details | | | | |
| Student cohorts covered by specification | 2016/17 entry | | | |
| Person responsible for the specification | Dr Bridgette Duncombe, Director of Undergraduate Studies | | | |
| Date of introduction of programme | - | | | |
| Date of programme specification/revision | March 2017 | | | |

Description of Programme Contents

This is one of our core chemistry courses, which covers topics in inorganic, organic and physical chemistry in the first three years of study. The fourth year comprises a placement year in Industry. This allows you to gain experience of communicating chemistry and science more generally in the context of an NGO, charity or other organisation involved in science communication. In the fifth year you return to Imperial and can follow a broad or specialised programme by choosing from a selection of advanced topics. This course is one year longer than courses without the year of science communication, but the content is otherwise the same.

In years one and two of the programme, the core chemistry course content is supplemented by two ancillary modules. This structure allows you the opportunity to transfer to a different degree programme up until the end of year two providing you have studied compatible ancillary subjects.

Practical experience in the lab is a major part of all of Imperial's chemistry courses.

Learning Outcomes

The Imperial Graduate Attributes are a set of core competencies which we expect students to achieve through completion of any Imperial College degree programme. The Graduate Attributes are available at: www.imperial.ac.uk/students/academic-support/graduate-attributes

Upon successful completion of the programme students should be able to demonstrate:

Intellectual Skills:

- The ability to demonstrate knowledge and understanding of essential facts, concepts, principles and theories relating to the subject areas identified
- The ability to apply such knowledge and understanding to the solution of qualitative and quantitative problems mostly of a familiar nature
- The ability to recognise and analyse problems and plan strategies for their solution
- Skills in the evaluation, interpretation and synthesis of chemical information and data
- Skills in the practical application of theory using computer software and models
- Skills in communicating scientific material and arguments
- Information technology (IT) and data-processing skills, relating to chemical information and data.

Practical Skills:

- Skills in the safe-handling of chemical materials, taking into account their physical and chemical properties including any specific hazards associated with their use and the ability to conduct risk assessments
- Skills required for the conduct of documented laboratory procedures involved in synthetic and analytical work, in relation to both inorganic and organic systems
- Skills in the monitoring, by observation and measurement, of chemical properties, events or changes, and the systematic and reliable recording and documentation thereof
- Skills in the operation of standard chemical instrumentation
- The ability to interpret and explain the limits of accuracy of their own experimental data in terms of significance and underlying theory.

Transferable Skills:

- Communication skills, covering both written and oral communication
- Problem-solving skills, relating to qualitative and quantitative information
- Numeracy and mathematical skills, including such aspects as error analysis order-of-magnitude estimations, correct use of units and modes of data presentation
- Information retrieval skills, in relation to primary and secondary information sources, including information retrieval through online computer searches
- IT skills
- Interpersonal skills, relating to the ability to interact with other people and to engage in team working
- Time management and organisational skills, as evidenced by the ability to plan and implement efficient and effective modes of working
- Skills needed to undertake appropriate further training of a professional nature.

Entry Requirements

| | | |
|----------------------------------|----------------------|------------------------|
| Academic Requirement | Grade Requirement | Internal transfer only |
| | Subject Requirements | |
| | Excluded Subjects | |
| International Baccalaureate (IB) | Grade Requirement | |
| | Subject Requirements | |
| GCSE Requirements | | |
| English Language Requirement | | |
| Admissions Tests | | |
| Interview | | |

The programme's competency standards documents can be found at:

<http://www.imperial.ac.uk/chemistry/undergraduate/course-structure-and-content/>

Learning & Teaching Strategy

| | |
|---------------------------------------|--|
| Scheduled Learning & Teaching Methods | <ul style="list-style-type: none"> • Lectures • Seminars • Tutorials • Practical workshops • Guided laboratory work • Problem classes • Field trips • Professional skills events |
|---------------------------------------|--|

| | |
|--|---|
| E-learning & Blended Learning Methods | <p>Virtual Learning Environment (VLE) is used extensively and includes:</p> <ul style="list-style-type: none"> • Lecture material and lecture recordings • Pre-laboratory work including competency quizzes • On-line quizzes and material to support lecture material • Plagiarism and safety awareness materials imbedded in online lecture and lab modules |
| Project and Placement Learning Methods | <ul style="list-style-type: none"> • Group project work • Research project |
| Assessment Strategy | |
| Assessment Methods | <ul style="list-style-type: none"> • Written examinations • Oral presentations • Written reports • Coursework • Academic posters • Literature report |
| Academic Feedback Policy | |
| <p>Students can expect to receive the academic feedback in the following ways:</p> <ul style="list-style-type: none"> • Academic subject tutorials in small groups throughout years 1 and 2 • Scheduled meetings with personal tutors twice a term during Years 1 and 2 • Scheduled meetings with personal tutors once a term during Years 3 and 5 • Accompanying class tutorial sessions in years 3 and 5 • Academic feedback during the year in Industry (year 4) will be provided on an ad hoc basis by the academic supervisor for the placement as well as by the industrial supervisor • Feedback on lab scripts will be provided to students within two weeks of submission. • Provisional exam results are posted to Blackboard as soon as possible • A brief commentary on the cohort's performance on each exam paper including a histogram of the cohort's performance is posted on Blackboard <p>The final year research project involves regular update and feedback meetings with the project supervisor</p> | |
| Re-sit Policy | |
| The College's Policy on Re-sits is available at: www.imperial.ac.uk/registry/exams/resit | |
| Mitigating Circumstances Policy | |
| The College's Policy on Mitigating Circumstances is available at: www.imperial.ac.uk/registry/exams | |

Assessment Structure

Marking Scheme

The pass mark for each assessment is 40%. The pass mark for each module is 40%. Exceptionally, the pass mark for the 'Maths' module is 60%.

Year One

A student must:

- Achieve an aggregate mark of at least 40% in each module
- Achieve a 'pass' in the 'Maths' module

Year Two

A student must:

- Achieve an aggregate mark of at least 40% in each module and must normally gain at least 55% overall weighted average across all written exams (i.e. inorganic, organic and physical chemistry 2 and the ancillary) to proceed into the third year

Year Three

A student must:

- Achieve an aggregate mark of at least 40% in the core modules 'Advanced Chemistry' and 'Chemistry Coursework 3'
- Achieve an aggregate mark of at least 40% in the module 'Advanced Chemistry Research Topics'

Year Four

A student must:

- Achieve an aggregate mark of at least 50% in the Year of Science Communication report

Year Five

A student must:

- Achieve an aggregate mark of at least 40% in the module 'Chemistry Coursework 4'
- Achieve an aggregate mark of at least 40% in each module

Final Degree Classifications

Third – a student must achieve an aggregate mark of 40%

Lower Second – a student must achieve an aggregate mark of 50%

Upper Second – a student must achieve an aggregate mark of 60%

First - a student must achieve an aggregate mark of 70%

| Module Weightings | | | |
|--------------------------|-------------------------|-------------------------------------|---------------------------|
| Year | % Year Weighting | Module | % Module Weighting |
| Year One | 7.7% | Introduction to Chemistry | 13.3r% |
| | | Inorganic Chemistry 1 | 13.3r% |
| | | Organic Chemistry 1 | 13.3r% |
| | | Physical Chemistry 1 | 13.3r% |
| | | Chemistry Coursework 1 | 36.7r% |
| | | 1 x module from elective group (A) | 10% |
| Year Two | 23.1% | Inorganic Chemistry 2 | 18.3r% |
| | | Organic Chemistry 2 | 18.3r% |
| | | Physical Chemistry 2 | 18.3r% |
| | | Chemistry Coursework 2 | 35% |
| | | 1 x module from elective group (B) | 10% |
| Year Three | 30.8% | Advanced Chemistry | 33.3% |
| | | Advanced Chemistry Research Topics | 20% |
| | | Chemistry Coursework 3 | 46.7% |
| Year Four | 0% | Year in of Science Communication | 100% |
| Year Five | 38.5% | Chemistry Coursework 4 | 75% |
| | | 3 x modules from elective group (C) | 8.33r% each |

Indicative Module List

| Code | Title | Core/ Elective | Year | L&T Hours | Ind. Study Hours | Place- ment Hours | Total Hours | % Written Exam | % Course- work | % Practical | FHEQ Level | ECTS |
|-----------|----------------------------------|-------------------|------|--------------|------------------------|-------------------------|----------------|----------------------|----------------------|----------------|---------------|------|
| CHEM40001 | Introduction to Chemistry | CORE | 1 | 73 | 127 | 0 | 200 | 100% | 0% | 0% | 4 | 8 |
| CHEM40002 | Inorganic Chemistry 1 | CORE | 1 | 36 | 164 | 0 | 200 | 100% | 0% | 0% | 4 | 8 |
| CHEM40003 | Organic Chemistry 1 | CORE | 1 | 37 | 163 | 0 | 200 | 100% | 0% | 0% | 4 | 8 |
| CHEM40004 | Physical Chemistry 1 | CORE | 1 | 56 | 144 | 0 | 200 | 100% | 0% | 0% | 4 | 8 |
| CHEM40005 | Chemistry Coursework 1 | CORE | 1 | 160 | 390 | 0 | 550 | 0% | 68.53% | 31.47% | 4 | 22 |
| CHEM40007 | Medicinal Chemistry | ELECTIVE (A) | 1 | 27 | 123 | 0 | 150 | 100% | 0% | 0% | 4 | 6 |
| CHEM40008 | Maths and Physics for Chemists 1 | ELECTIVE (A) | 1 | 55 | 95 | 0 | 150 | 85% | 15% | 0% | 4 | 6 |
| - | Horizons (Languages only) | ELECTIVE (A) | 1 | Variable | | | 150 | Variable | | | | 6 |
| CHEM50001 | Inorganic Chemistry 2 | CORE | 2 | 67 | 208 | 0 | 275 | 100% | 0% | 0% | 5 | 11 |
| CHEM50002 | Organic Chemistry 2 | CORE | 2 | 79 | 196 | 0 | 275 | 100% | 0% | 0% | 5 | 11 |
| CHEM50003 | Physical Chemistry 2 | CORE | 2 | 75 | 200 | 0 | 275 | 100% | 0% | 0% | 5 | 11 |
| CHEM50004 | Chemistry Coursework 2 | CORE | 2 | 219 | 308 | 0 | 525 | 0% | 39.8% | 60.2% | 5 | 21 |
| CHEM50007 | Maths and Physics for Chemists 2 | ELECTIVE (B) | 2 | 60 | 90 | 0 | 150 | 100% | 0% | 0% | 5 | 6 |
| CHEM50008 | Medicinal Chemistry 2 | ELECTIVE (B) | 2 | 32 | 118 | 0 | 150 | 100% | 0% | 0% | 5 | 6 |

Indicative Module List

| Code | Title | Core/ Elective | Year | L&T Hours | Ind. Study Hours | Place- ment Hours | Total Hours | % Written Exam | % Course- work | % Practical | FHEQ Level | ECTS |
|-----------|--|-------------------|------|--------------|------------------------|-------------------------|----------------|----------------------|----------------------|----------------|---------------|------|
| BS0806 | Entrepreneurship Business Plan Competition | ELECTIVE (B) | 2 | 21 | 129 | 0 | 150 | 30% | 70% | 0% | 6 | 6 |
| BS0815 | Business Economics | ELECTIVE (B) | 2 | 32 | 118 | 0 | 150 | 70% | 30% | 0% | 6 | 6 |
| BS0850 | Managerial Economics | ELECTIVE (B) | 2 | 82 | 105.5 | 0 | 187.5 | 70% | 30% | 0% | 6 | 7.5 |
| BS0808 | Finance and Financial Management | ELECTIVE (B) | 2 | 32 | 118 | 0 | 150 | 70% | 30% | 0% | 6 | 6 |
| BS0851 | Corporate Finance | ELECTIVE (B) | 2 | 82 | 105.5 | 0 | 187.5 | 70% | 30% | 0% | 6 | 7.5 |
| BS0821 | Project Management | ELECTIVE (B) | 2 | 22 | 128 | 0 | 150 | 50% | 50% | 0% | 6 | 6 |
| BS0845 | Strategic Management | ELECTIVE (B) | 2 | 22 | 128 | 0 | 150 | 70% | 30% | 0% | 6 | 6 |
| - | Horizons (Languages only) | ELECTIVE (B) | 2 | Variable | | | 150 | Variable | | | | 6 |
| HSCS2001 | Communicating Science | ELECTIVE (B) | 2 | 40 | 110 | 0 | 150 | 0% | 80% | 20% | 5 | 6 |
| HSCS2010 | Science and Policy | ELECTIVE (B) | 2 | 40 | 110 | 0 | 150 | 0% | 80% | 20% | 5 | 6 |
| HSCS2002 | Creativity, Innovation and Invention | ELECTIVE (B) | 2 | 40 | 110 | 0 | 150 | 0% | 60% | 40% | 5 | 6 |
| CHEM50009 | Undergraduate Ambassadors Scheme | ELECTIVE (B) | 2 | 12 | 87 | 51 | 150 | 0% | 90% | 10% | 5 | 6 |
| CHEM60001 | Advanced Chemistry | CORE | 3 | 82 | 418 | 0 | 500 | 100% | 0% | 0% | 6 | 20 |
| CHEM60002 | Advanced Chemistry Research Topics | CORE | 3 | 97 | 203 | 0 | 300 | 100% | 0% | 0% | 6 | 12 |

Indicative Module List

| Code | Title | Core/ Elective | Year | L&T Hours | Ind. Study Hours | Place- ment Hours | Total Hours | % Written Exam | % Course- work | % Practical | FHEQ Level | ECTS |
|-----------|---|-------------------|------|--------------|------------------------|-------------------------|----------------|----------------------|----------------------|----------------|---------------|------|
| CHEM60005 | Chemistry Coursework 3 | CORE | 3 | 210 | 490 | 0 | 700 | 0% | 39% | 61% | 6 | 28 |
| | Year of Science Communication | CORE | 4 | 0 | 0 | 1500 | 1500 | 0% | 100% | 0% | 6 | 60 |
| CHEM70001 | Chemistry Coursework 4 | CORE | 5 | 791 | 334 | 0 | 1125 | 0% | 59% | 41% | 7 | 45 |
| CHEM70002 | Advanced Catalysis | ELECTIVE (C) | 5 | 12 | 113 | 0 | 125 | 0% | 0% | 100% | 7 | 5 |
| CHEM70004 | Chemistry of Nanomaterials | ELECTIVE (C) | 5 | 15 | 110 | 0 | 125 | 0% | 0% | 100% | 7 | 5 |
| CHEM70005 | Renewable Energy from Solar Cells to Fuel Cells | ELECTIVE (C) | 5 | 12 | 113 | 0 | 125 | 100% | 0% | 0% | 7 | 5 |
| CHEM70006 | Advanced Stereo-Chemistry, Synthesis and Biosynthesis | ELECTIVE (C) | 5 | 12 | 113 | 0 | 125 | 0% | 100% | 0% | 7 | 5 |
| CHEM70007 | Molecular Imaging | ELECTIVE (C) | 5 | 24 | 101 | 0 | 125 | 100% | 0% | 0% | 7 | 5 |
| CHEM70008 | Robot Chemistry | ELECTIVE (C) | 5 | 13 | 112 | 0 | 125 | 0% | 100% | 0% | 7 | 5 |
| CHEM70009 | Plastic Electronics from Materials Chemistry to Device Applications | ELECTIVE (C) | 5 | 12 | 113 | 0 | 125 | 100% | 0% | 0% | 7 | 5 |
| CHEM70010 | From Molecules to Medicine | ELECTIVE (C) | 5 | 15 | 110 | 0 | 125 | 0% | 60% | 40% | 7 | 5 |
| CHEM70011 | Membrane Biophysics | ELECTIVE (C) | 5 | 12 | 113 | 0 | 125 | 100% | 0% | 0% | 7 | 5 |

Supporting Information

The Programme Handbook is available at:

<http://www.imperial.ac.uk/chemistry/undergraduate/course-structure-and-content/>

The Module Handbook is available through the Virtual Learning Environment module "Course Summaries 2017/18"

The College's entry requirements for undergraduate programmes can be found at:

www.imperial.ac.uk/study/ug/apply/requirements/

The College's Quality & Enhancement Framework is available at:

www.imperial.ac.uk/registry/proceduresandregulations/qualityassurance

The College's Academic and Examination Regulations can be found at:

<http://www3.imperial.ac.uk/registry/proceduresandregulations/regulations>

Imperial College is an independent corporation whose legal status derives from a Royal Charter granted under Letters Patent in 1907. In 2007 a Supplemental Charter and Statutes was granted by HM Queen Elizabeth II. This Supplemental Charter, which came into force on the date of the College's Centenary, 8th July 2007, established the College as a University with the name and style of "The Imperial College of Science, Technology and Medicine".

<http://www.imperial.ac.uk/admin-services/secretariat/college-governance/charters-statutes-ordinances-and-regulations/>

Imperial College London is regulated by the Higher Education Funding Council for England (HEFCE)

<http://www.hefce.ac.uk/reg/of/>

Modification

| | | | |
|---|----------------------|---------------|------------|
| Changes to the assessment of module CHEM40008 'Maths and Physics for Chemists Year 1' | Programmes Committee | 21 March 2017 | PC.2016.75 |
|---|----------------------|---------------|------------|