# Programme Specification (Undergraduate) FOR ENTRY YEAR: 2025/26

**Date created:** 03/02/2021 **Last amended:** 08/12/2024 **Version no.** 1

## 1. Programme title(s) and code(s):

BSc Chemistry

BSc Chemistry with a Year in Industry^

BSc Medicinal Chemistry

BSc Medicinal Chemistry with a Year in Industry^

BSc Chemistry with a Year Abroad*

BSc Medicinal Chemistry with a Year Abroad*

BSc Chemical Science*

BSc Chemical and Pharmaceutical Sciences*

Notes

All programmes include a variant with integrated Foundation Year; *Medicinal Chemistry (with Foundation Year)* is entered by approved transfer only, before the start of Year 1.

* An award marked with an asterisk is only available as an exit award and is not available for students to register onto. BSc Chemistry with a Year Abroad and BSc Medicinal Chemistry with a Year Abroad are exit awards for students failing to progress on the equivalent MChem programmes – see MChem programme specifications for details.

^ Students may only enter this programme by approved transfer before the end of Year 2.

**a)** HECOS Code

BSc Chemistry/BSc Chemistry with Year in Industry

| HECOS Code | % |
|---|---|
| 100417 | 100% |

BSc Medicinal Chemistry/BSc Medicinal Chemistry with Year in Industry

| HECOS Code | % |
|---|---|
| 100423 | 100 |

**b) UCAS Code (where required)**

BSc Chemistry F100

BSc Medicinal Chemistry F154

## 2. Awarding body or institution:

University of Leicester

**3. a) Mode of study**

Full-time

**b) Type of study**

Campus-based

**4. Registration periods:**

The normal and maximum registration periods for each degree are as follows:

| **Degree** | BSc | BSc | BSc with Year in Industry | BSc with Year in Industry | BSc with Foundation Year | BSc with Foundation Year | BSc with Year in Industry and Foundation Year | BSc with Year in Industry and Foundation Year |
|---|---|---|---|---|---|---|---|---|
| | Normal | Max. | Normal | Max. | Normal | Max. | Normal | Max. |
| Chemistry | 3 years | 5 years | 4 years | 6 years | 4 years | 6 years | 5 years | 7 years |
| Medicinal Chemistry | 3 years | 5 years | 4 years | 6 years | 4 years | 6 years | 5 years | 7 years |

**5. Typical entry requirements**

A-level ABB or equivalent and GCSE Maths grade 6. Applications from mature students with a Level 3 qualification in Chemistry and experience of employment in a chemistry related field are welcomed and will be considered on a case-by-case basis.

**6. Accreditation of Prior Learning**

APL will not be accepted for exemptions from individual modules, however may be considered for direct entry to Year 2, on a case by case and subject to the general provisions of the University APL policy.

**7. Programme aims**

The programme aims to provide a broad and in depth understanding of ideas central to chemistry.

- To train students in the practical skills necessary for the safe manipulation of chemicals
- To generate interest in, and understanding of, the wider role of chemistry in society e.g. health, industry, sustainability
- To enable students to develop independent learning skills as well as the experience of working as part of a team
- To stimulate intellectual development, develop powers of critical analysis and ability to solve problems

- To enhance written and oral communication skills
- To provide students with training in mathematical techniques and IT skills
- To introduce students to chemical research methodology through carrying out a research investigation
- To introduce students to a range topic of current chemical research
- To equip students with the knowledge and generic skills for employment or further training in R&D, science-based industry and establishments, education, and for training at management levels in other professions.

For the Year in Industry variants only, these additional programme aims apply:

- Prepare students for career and training opportunities which relates to their degree – in both the private and public sectors, and voluntary organisations.
- Construct effective applications for placement opportunities
- Provide students the opportunity to recognise suitable plans for transitioning into the workplace

Additional aims and objectives for related degrees:

Medicinal Chemistry

- To provide a broad understanding of the chemistry that underpins central areas of biochemistry
- To provide a broad understanding of the processes involved in development of new drugs including drug design, discovery, mode of action and production

## 8. Reference points used to inform the programme specification

- QAA Benchmarking Statement for Chemistry
- Framework for Higher Education Qualifications (FHEQ)
- UK Quality Code for Higher Education
- University Education Strategy
- University Assessment Strategy [login required]
- University of Leicester Periodic Developmental Review Report
- External Examiners' reports (annual)
- United Nations Education for Sustainable Development Goals
- Student Destinations Data
- Royal Society of Chemistry accreditation guidance

## 9. Programme Outcomes

Unless otherwise stated, programme outcomes apply to all awards specified in 1. Programme title(s).

### a) Discipline specific knowledge and competencies

i) Mastery of an appropriate body of knowledge

| Intended Learning Outcomes | Teaching and Learning Methods | How Demonstrated? |
|---|---|---|
| On successful completion of the programme students will be able to: | | |

| Intended Learning Outcomes | Teaching and Learning Methods | How Demonstrated? |
|---|---|---|
| recall and apply the basic concepts of chemistry theory across all 3 main areas of chemistry* (inorganic, organic & physical) and related mathematics; | Lectures; tutorials; specified & directed reading; problem classes; problem-based learning; open ended group work; laboratory practical classes; research projects; computer aided learning. | Written examinations; assessed coursework including – tutorial problems, computer tests, oral presentations; assessed practical work and reports. |
| solve structured and unseen model problems; | Lectures; tutorials; specified & directed reading; problem classes; problem-based learning; open ended group work; laboratory practical classes; research projects; computer aided learning. | Written examinations; assessed coursework including – tutorial problems, computer tests, oral presentations; assessed practical work and reports. |
| conduct experiments and apply practical techniques. | Lectures; tutorials; specified & directed reading; problem classes; problem-based learning; open ended group work; laboratory practical classes; research projects; computer aided learning. | Written examinations; assessed coursework including – tutorial problems, computer tests, oral presentations; assessed practical work and reports. |
| Typical students should have detailed knowledge of selected topics in at least 2* of the broad areas of chemistry (organic, inorganic, physical and analytical). | Lectures; tutorials; specified & directed reading; problem classes; problem-based learning; open ended group work; laboratory practical classes; research projects; computer aided learning. | Written examinations; assessed coursework including – tutorial problems, computer tests, oral presentations; assessed practical work and reports. |
| Specific to Medicinal Chemistry | | |
| knowledge and understanding of biochemistry; knowledge of processes of drug discovery. | Lectures; specified & directed reading; laboratory practical classes. | Written examinations; assessed coursework including – written work, essays, practical reports, oral presentations. |
| *For Medicinal Chemistry there is less coverage of physical chemistry, in Year 3, the detailed knowledge is in organic chemistry and pharmaceutical chemistry. | Lectures; specified & directed reading; laboratory practical classes. | Written examinations; assessed coursework including – written work, essays, practical reports, oral presentations. |

ii) Understanding and application of key concepts and techniques

| Intended Learning Outcomes | Teaching and Learning Methods | How Demonstrated? |
|---|---|---|
| On successful completion of the programme students will be able to: | | |
| apply chemical concepts in new situations (e.g. ability to predict physical and chemical properties by comparison with analogues); | Lectures; tutorials; specified & directed reading; problem classes; problem-based learning; open ended group work; laboratory practical classes; research projects; computer aided learning. | Written examinations; assessed coursework including – tutorial problems, computer tests, oral presentations; assessed practical work and reports. |
| apply logic and chemical knowledge to make deductions based on (limited) evidence; | Lectures; tutorials; specified & directed reading; problem classes; problem-based learning; open ended group work; laboratory practical classes; research projects; computer aided learning. | Written examinations; assessed coursework including – tutorial problems, computer tests, oral presentations; assessed practical work and reports. |
| solve familiar and unfamiliar chemistry related problems; | Lectures; tutorials; specified & directed reading; problem classes; problem-based learning; open ended group work; laboratory practical classes; research projects; computer aided learning. | Written examinations; assessed coursework including – tutorial problems, computer tests, oral presentations; assessed practical work and reports. |
| design, construct and conduct chemical experiments using standard equipment and following safe procedures; | Lectures; tutorials; specified & directed reading; problem classes; problem-based learning; open ended group work; laboratory practical classes; research projects; computer aided learning. | Written examinations; assessed coursework including – tutorial problems, computer tests, oral presentations; assessed practical work and reports. |
| use computer programs to retrieve & analyse data; | Lectures; tutorials; specified & directed reading; problem classes; problem-based learning; open ended group work; laboratory practical classes; research projects; computer aided learning. | Written examinations; assessed coursework including – tutorial problems, computer tests, oral presentations; assessed practical work and reports. |
| describe and discuss the accumulation of scientific evidence. | Lectures; tutorials; specified & directed reading; problem classes; problem-based learning; open ended group work; laboratory practical classes; research projects; computer aided learning. | Written examinations; assessed coursework including – tutorial problems, computer tests, oral presentations; assessed practical work and reports. |

iii) Critical analysis of key issues

| Intended Learning Outcomes | Teaching and Learning Methods | How Demonstrated? |
|---|---|---|
| On successful completion of the programme students will be able to: | | |
| critically appraise physical & chemical information and discuss its limitations; | Lectures; tutorials; problem-based learning; problem classes, open ended group work; laboratory practical classes; research projects; computer aided learning. | Written examinations; practical & projects reports; oral presentations; assessed practical work; assessed computer exercises. |
| draw quantitative conclusions from sample data; | Lectures; tutorials; problem-based learning; problem classes, open ended group work; laboratory practical classes; research projects; computer aided learning. | Written examinations; practical & projects reports; oral presentations; assessed practical work; assessed computer exercises. |
| summarise key findings of scientific papers; | Lectures; tutorials; problem-based learning; problem classes, open ended group work; laboratory practical classes; research projects; computer aided learning. | Written examinations; practical & projects reports; oral presentations; assessed practical work; assessed computer exercises. |
| critically assess and compare scientific theories. | Lectures; tutorials; problem-based learning; problem classes, open ended group work; laboratory practical classes; research projects; computer aided learning. | Written examinations; practical & projects reports; oral presentations; assessed practical work; assessed computer exercises. |

iv) Clear and concise presentation of material

| Intended Learning Outcomes | Teaching and Learning Methods | How Demonstrated? |
|---|---|---|
| On successful completion of the programme students will be able to: | | |
| present scientific ideas, data and results in a variety of (appropriate) forms e.g. reports, seminars, posters, papers etc; | Lectures, tutorials; problem-based learning; group based problem classes; open ended group project work; laboratory practical classes; research projects. | Laboratory notebooks; practical and project reports; oral presentations; assessed practical work including lab samples & associated data; assessed computer exercises; tutorial work |

| Intended Learning Outcomes | Teaching and Learning Methods | How Demonstrated? |
|---|---|---|
| use appropriate software for presenting and modelling chemical structures and systems; | Lectures, tutorials; problem-based learning; group based problem classes; open ended group project work; laboratory practical classes; research projects. | Laboratory notebooks; practical and project reports; oral presentations; assessed practical work including lab samples & associated data; assessed computer exercises; tutorial work |
| participate in scientific discussion and debate. | Lectures, tutorials; problem-based learning; group based problem classes; open ended group project work; laboratory practical classes; research projects. | Laboratory notebooks; practical and project reports; oral presentations; assessed practical work including lab samples & associated data; assessed computer exercises; tutorial work |

v) Critical appraisal of evidence with appropriate insight

| Intended Learning Outcomes | Teaching and Learning Methods | How Demonstrated? |
|---|---|---|
| On successful completion of the programme students will be able to: | | |
| discuss and implement experimental methodology; | Tutorials; problem-based learning; lectures; open ended group project work; laboratory practical classes; research projects. | Written examinations; reports; oral presentations; assessed practical work; assessed computer exercises; assessed problems; project assessments. |
| collect and critically analyse data; | Tutorials; problem-based learning; lectures; open ended group project work; laboratory practical classes; research projects. | Written examinations; reports; oral presentations; assessed practical work; assessed computer exercises; assessed problems; project assessments. |
| draw valid inferences from data in a variety of settings; | Tutorials; problem-based learning; lectures; open ended group project work; laboratory practical classes; research projects. | Written examinations; reports; oral presentations; assessed practical work; assessed computer exercises; assessed problems; project assessments. |
| discuss and criticize scientific literature. | Tutorials; problem-based learning; lectures; open ended group project work; laboratory practical classes; research projects. | Written examinations; reports; oral presentations; assessed practical work; assessed computer exercises; assessed problems; project assessments. |

vi) Other discipline specific competencies

| Intended Learning Outcomes | Teaching and Learning Methods | How Demonstrated? |
|---|---|---|
| On successful completion of the programme students will be able to: | | |

| Intended Learning Outcomes | Teaching and Learning Methods | How Demonstrated? |
|---|---|---|
| discuss, design, and implement scientific experiments; | Tutorials; problem-based learning; research projects. | Written reports; oral presentations; assessed practical work; written examinations. |
| competently use a range of standard laboratory equipment; | Tutorials; problem-based learning; research projects. | Written reports; oral presentations; assessed practical work; written examinations. |
| describe and adhere to laboratory safety procedures; | Tutorials; problem-based learning; research projects. | Written reports; oral presentations; assessed practical work; written examinations. |
| describe and discuss some areas of current research in chemistry | Tutorials; problem-based learning; research projects. | Written reports; oral presentations; assessed practical work; written examinations. |

**b) Transferable skills**

i) Oral communication

| Intended Learning Outcomes | Teaching and Learning Methods | How Demonstrated? |
|---|---|---|
| On successful completion of the programme students will be able to: | | |
| describe and discuss scientific concepts to a variety of audiences; | Tutorials; problem-based learning; group problem solving classes; research projects. | Oral presentations and questioning (including projects) |
| give reasoned arguments in response to chemical questions. | Tutorials; problem-based learning; group problem solving classes; research projects. | Oral presentations and questioning (including projects) |

ii) Written communication

| Intended Learning Outcomes | Teaching and Learning Methods | How Demonstrated? |
|---|---|---|
| On successful completion of the programme students will be able to: | | |
| write concise and clear scientific reports (including abstracts), laboratory notebooks & reports and project summaries; | Tutorials; problem-based learning; laboratory practical classes; CV writing workshop; research projects. | Written lab-notebooks, project and laboratory reports; assessed CVs; assessed coursework including essays, written examinations. |
| write CVs; | Tutorials; problem-based learning; laboratory practical classes; CV writing workshop; research projects. | Written lab-notebooks, project and laboratory reports; assessed CVs; assessed coursework including essays, written examinations. |

| Intended Learning Outcomes | Teaching and Learning Methods | How Demonstrated? |
|---|---|---|
| clearly discuss some areas of current research in chemistry in written form. | Tutorials; problem-based learning; laboratory practical classes; CV writing workshop; research projects. | Written lab-notebooks, project and laboratory reports; assessed CVs; assessed coursework including essays, written examinations. |

iii) Information technology

| Intended Learning Outcomes | Teaching and Learning Methods | How Demonstrated? |
|---|---|---|
| On successful completion of the programme students will be able to: | | |
| use spreadsheets, word processing and presentation facilities; | Problem classes; research projects; literature based coursework exercises; laboratory practical classes | Assessed IT tasks; laboratory/project assessments; practical and project reports; assessed problems. |
| use basic IT skills to access chemical information from online databases; | Problem classes; research projects; literature based coursework exercises; laboratory practical classes | Assessed IT tasks; laboratory/project assessments; practical and project reports; assessed problems. |
| use mathematical packages for data analysis; | Problem classes; research projects; literature based coursework exercises; laboratory practical classes | Assessed IT tasks; laboratory/project assessments; practical and project reports; assessed problems. |
| use chemistry specific software such as drawing or molecular modelling packages. | Problem classes; research projects; literature based coursework exercises; laboratory practical classes | Assessed IT tasks; laboratory/project assessments; practical and project reports; assessed problems. |

iv) Numeracy

| Intended Learning Outcomes | Teaching and Learning Methods | How Demonstrated? |
|---|---|---|
| On successful completion of the programme students will be able to: | | |
| use analytical and graphical methods; | Lectures; group problem solving classes; problem-based learning; research project; laboratory practical classes. | Written examinations; practical and project reports; oral presentations; assessed practical work; assessed problems |
| analyse data; | Lectures; group problem solving classes; problem-based learning; research project; laboratory practical classes. | Written examinations; practical and project reports; oral presentations; assessed practical work; assessed problems |

| Intended Learning Outcomes | Teaching and Learning Methods | How Demonstrated? |
|---|---|---|
| solve numerical problems involving e.g. calculus, linear algebra. | Lectures; group problem solving classes; problem-based learning; research project; laboratory practical classes. | Written examinations; practical and project reports; oral presentations; assessed practical work; assessed problems |

v) Team working

| Intended Learning Outcomes | Teaching and Learning Methods | How Demonstrated? |
|---|---|---|
| On successful completion of the programme students will be able to: | | |
| discuss concepts and formulate plans working with peers; | Group problem solving classes, coursework & projects; problem-based learning; research projects. | Group assessment (outcomes and oral questioning); project assessment. |
| recognise individual strengths within a team; | Group problem solving classes, coursework & projects; problem-based learning; research projects. | Group assessment (outcomes and oral questioning); project assessment. |
| organise time and tasks coherently between group members; | Group problem solving classes, coursework & projects; problem-based learning; research projects. | Group assessment (outcomes and oral questioning); project assessment. |
| produce joint reports/presentations. | Group problem solving classes, coursework & projects; problem-based learning; research projects. | Group assessment (outcomes and oral questioning); project assessment. |

vi) Problem solving

| Intended Learning Outcomes | Teaching and Learning Methods | How Demonstrated? |
|---|---|---|
| On successful completion of the programme students will be able to: | | |
| analyse problems; | Lectures; tutorials; problem-based learning; laboratory classes; open ended group work; research projects. | Assessed examinations; assessed problems; group work assessment; project assessments. |
| plan and implement projects; | Lectures; tutorials; problem-based learning; laboratory classes; open ended group work; research projects. | Assessed examinations; assessed problems; group work assessment; project assessments. |
| apply chemistry knowledge and problem-solving ability to novel applications; | Lectures; tutorials; problem-based learning; laboratory classes; open ended group work; research projects. | Assessed examinations; assessed problems; group work assessment; project assessments. |

| Intended Learning Outcomes | Teaching and Learning Methods | How Demonstrated? |
|---|---|---|
| solve unfamiliar numerical problems. | Lectures; tutorials; problem-based learning; laboratory classes; open ended group work; research projects. | Assessed examinations; assessed problems; group work assessment; project assessments. |

vii) Information handling

| Intended Learning Outcomes | Teaching and Learning Methods | How Demonstrated? |
|---|---|---|
| On successful completion of the programme students will be able to: | | |
| gather, retrieve, and manipulate chemical information and data from a variety of sources, analyse & use it to support a chemical argument; | Lectures, tutorials; problem-based learning; laboratory and project supervision; group problem solving classes; research projects. | Assessed examinations; assessed problems; project and laboratory reports; oral presentations. |
| describe and discuss the scientific method; | Lectures, tutorials; problem-based learning; laboratory and project supervision; group problem solving classes; research projects. | Assessed examinations; assessed problems; project and laboratory reports; oral presentations. |
| present data in various forms (e.g. tabular and graphical); | Lectures, tutorials; problem-based learning; laboratory and project supervision; group problem solving classes; research projects. | Assessed examinations; assessed problems; project and laboratory reports; oral presentations. |
| access, search and appraise articles in scientific journals/literature. | Lectures, tutorials; problem-based learning; laboratory and project supervision; group problem solving classes; research projects. | Assessed examinations; assessed problems; project and laboratory reports; oral presentations. |

viii) Skills for lifelong learning

| Intended Learning Outcomes | Teaching and Learning Methods | How Demonstrated? |
|---|---|---|
| On successful completion of the programme students will be able to: | | |
| plan and undertake projects involving elements of independent research; | Laboratory classes & research projects; careers / skills training sessions; lectures from visiting speakers | Open note assessments; meeting deadlines; Project assessments; written examinations; assessed CVs |

| Intended Learning Outcomes | Teaching and Learning Methods | How Demonstrated? |
|---|---|---|
| access, search and appraise scholarly articles; | Laboratory classes & research projects; careers / skills training sessions; lectures from visiting speakers | Open note assessments; meeting deadlines; Project assessments; written examinations; assessed CVs |
| collect and analyse data; | Laboratory classes & research projects; careers / skills training sessions; lectures from visiting speakers | Open note assessments; meeting deadlines; Project assessments; written examinations; assessed CVs |
| search for and pursue employment and/or further study opportunities; | Laboratory classes & research projects; careers / skills training sessions; lectures from visiting speakers | Open note assessments; meeting deadlines; Project assessments; written examinations; assessed CVs |
| work effectively in teams; | Laboratory classes & research projects; careers / skills training sessions; lectures from visiting speakers | Open note assessments; meeting deadlines; Project assessments; written examinations; assessed CVs |
| work to deadlines managing their time effectively. | Laboratory classes & research projects; careers / skills training sessions; lectures from visiting speakers | Open note assessments; meeting deadlines; Project assessments; written examinations; assessed CVs |
| Students taking an industrial placement year will also appreciate the cultural environment of different businesses. | Experience with industry. | Reflective coursework exercises. |

ix) Year in Industry

| Intended Learning Outcomes | Teaching and Learning Methods | How Demonstrated? |
|---|---|---|
| Select appropriate resources for researching/securing placement opportunities. | Problem solving classes, Masterclasses, Career development programmes, Independent research. | |
| Explain the process for applying for and securing a relevant placement. | Problem solving classes, Masterclasses, Career development programmes, Independent research. | |
| Construct effective applications for placement opportunities. | Problem solving classes, Masterclasses, Career development programmes, Independent research. | |

| Intended Learning Outcomes | Teaching and Learning Methods | How Demonstrated? |
|---|---|---|
| Recognise suitable plans for transitioning into a placement. | Problem solving classes, Masterclasses, Career development programmes, Independent research. | |
| Apply the theoretical and practical aspects of the material studied at the University and demonstrate the personal and professional skills necessary for your role within the organisation. | Project supervision, independent research | Completion of Monthly Reflective Journals to record skills development, major achievements, key areas of work, learning points and challenges overcome.<br><br>Assessed by a Placement Portfolio, comprising of a Reflective Summary, Professional Development Plan, and Updated CV (excluded from word count) to formally assess on a pass or fail basis.<br><br>Formative feedback during a Placement Visit (in person or via Skype) from Placement Provider and Placement Tutor regarding reflection on skills development, areas of strength and weakness and contribution to the workplace. |
| Compose a Professional Development Plan considering your strengths, development areas and motivations for your next step. | Students undertake a minimum of 9 months experience in the workplace.<br><br>Project supervision, independent research | Completion of Monthly Reflective Journals to record skills development, major achievements, key areas of work, learning points and challenges overcome.<br><br>Assessed by a Placement Portfolio, comprising of a Reflective Summary, Professional Development Plan, and Updated CV (excluded from word count) to formally assess on a pass or fail basis.<br><br>Formative feedback during a Placement Visit (in person or via Skype) from Placement Provider and Placement Tutor regarding reflection on skills development, areas of strength and weakness and contribution to the workplace. |

| Intended Learning Outcomes | Teaching and Learning Methods | How Demonstrated? |
|---|---|---|
| Modify your CV to include the skills and experience you have gained through your significant experience gained in the past 12 months. | Students undertake a minimum of 9 months experience in the workplace.<br><br>Project supervision, independent research | Completion of Monthly Reflective Journals to record skills development, major achievements, key areas of work, learning points and challenges overcome.<br><br>Assessed by a Placement Portfolio, comprising of a Reflective Summary, Professional Development Plan, and Updated CV (excluded from word count) to formally assess on a pass or fail basis.<br><br>Formative feedback during a Placement Visit (in person or via Skype) from Placement Provider and Placement Tutor regarding reflection on skills development, areas of strength and weakness and contribution to the workplace. |

## 10. Progression points

This programme follows the standard Scheme of Progression set out in Senate Regulations – see the version of Senate Regulation 5 governing undergraduate programmes relevant to the year of entry.

The following additional progression requirements for this programme have been approved:

The following modules must be passed at the first attempt and a re-sit will not, as standard, be provided:

- CH1205
- CH2204
- CH3263
- CH3264

Discretion may be given by the Board of Examiners, who may require resubmission of one or more assessed coursework elements, where it is possible for students to achieve a pass mark for the module by improving their mark in individual coursework elements. There are no resit opportunities for non-mitigated missed practical work.

These modules are not eligible for compensated pass and must be passed at 40.00%.

The following modules have a requirement of 100% completion of scheduled laboratory sessions (attendance and submission of any associated assessment):

- CH1205

- CH2204

A limited number of additional "catch-up" sessions may be provided for students who have accepted mitigation for non-attendance.

If, during the year, a student reaches a point where they have failed to complete more lab sessions than there are catch-up sessions available, the module will be failed as they are now unable to meet the 100% completion requirement. As these modules are not eligible for compensation, this means a student's studies for the current academic year will come to an immediate end.

The Board of Examiners will convene at the earliest subsequent opportunity to make a decision regarding the student's progression (determined in line with the standard Senate Regulations; typically, Termination of Studies).

A Repeat Year may be granted in certain exceptional circumstances.

Student-initiated transfers between BSc and MChem may take place at any point up until the end of July in Year Two. Transfers between BSc and MChem may take place after this only in exceptional cases, such as awaiting reassessment results, mitigating circumstances, or significant change of personal circumstances. Approval of transfers to MChem degrees is subject to students meeting the MChem progression criteria.

In cases where a student has failed to meet a requirement to progress he or she will be required to withdraw from the course.

**a) Course transfers**

**Transfer to MChem degrees**

- Students may be permitted to transfer onto a MChem degree during Year Two if their final credit weighted average for Year One is greater than 50%.
    - An internal deadline will be set by the Department during Year Two for such transfers; this will be clearly communicated to all Year Two students.

**Transfer between different degrees**

- Transfer from BSc Medicinal Chemistry to BSc or MChem Chemistry is allowed at the end of Year One (and in exceptional cases at the end of Year Two).
- Transfer from BSc Chemistry to BSc Medicinal Chemistry is only allowed up until the start of Semester 2 of Year One. Note: any transfer from BSc to MChem is subject to the additional requirements set out above.
- **Year abroad**

For the Year Abroad variant (for experiential Year Abroad only) the additional progression points apply

- **Year in Industry**

For the Year in Industry variant, the additional progression points apply

## 11. Criteria for award and classification

This programme follows the standard scheme of undergraduate award and classification set out in Senate Regulations – see the version of *Senate Regulation 5 governing undergraduate programmes* relevant to the year of entry.

The following additional award requirements for this programme have been approved:

**Awarding requirements for Royal Society of Chemistry accredited degrees**

- To meet Royal Society of Chemistry accreditation requirements, we require all students to pass at least one Level One or Level Two module in all three areas of the subject (organic, inorganic, and physical chemistry – see table below). Students will need to do this by the end of their studies in order to graduate with a degree in Chemistry/Medicinal Chemistry.

| Organic Chemistry | Inorganic Chemistry | Physical Chemistry | Medicinal Chemistry only |
|---|---|---|---|
| By the end of their studies, students must have passed at least one of the following modules: CH1201 and CH2201. | By the end of their studies, students must have passed at least one of the following modules: CH1202 and CH2202. | By the end of their studies, students must have passed at least one of the following modules: CH1203 and CH2203. | By the end of their studies, students must have passed at least two of the following modules: CH1211, CH2211, CH3211 |

- In addition, students will also need to gain an overall (CWA across both modules) pass mark of 40% for the two final year project modules CH3263 & CH3264.
- Students who meet all other progression and awarding regulations but fail to meet all of these accreditation requirements may be awarded a non-accredited degree in Chemical Science/Chemical and Pharmaceutical Sciences.

## 12. Special features

Small group tutorials, group problem solving, student-centred learning, research-based projects, links with industry, problem and context-based learning.

### 12a. Research-inspired Education

**Students on this programme will advance through the four quadrants of the University of Leicester Research-inspired Education Framework as follows:**

| RiE Quadrant | Narrative |
|---|---|
| **Research-briefed**<br>Bringing staff research content into the curriculum. | Our programme offers a solid foundation in fundamental inorganic, organic and physical chemistry topics. This, coupled with chemistry-focussed support in mathematics, critical thinking, problem solving and practical skills, provides a good foundation for the research-focussed modules and research project in later years. All of our modules are contextualised through real-world examples and application to solve modern challenges in: catalysis; medicine; materials; sustainability and biotechnology.<br><br>**Research briefed** – Students experience challenging and inspiring learning in classes informed by cutting-edge research. Our programme leverages the expertise of our two core research themes: *Chemistry for Health* and *Chemistry for a Sustainable Future,* along with other expertise from across the university. Our staff bring their research straight into the classroom, making learning exciting, relevant and highly contextualised to modern-day issues. Additionally, students are exposed to the research culture of the school from their very first year, with a particular highlight being a dedicated series of lectures showcasing the research of selected Leicester chemistry academics. |

| | |
|---|---|
| **Research-based**<br>Framed enquiry for exploring existing knowledge. | **Research based** – Students engage in a variety of authentic assessments, working both individually and as a team to solve real-world problems and develop the necessary skills for both research and employment suitable for STEM graduates. This will include how to apply theory concepts to unseen problems; practical techniques, programming, data processing, data analysis; and how to effectively communicate science. |
| **Research-oriented**<br>Students critique published research content and process. | **Research oriented** – Students will develop the ability to critically appraise their own experimental technique/processes, analyses, and conclusions through lectures, problem classes, laboratory work, computer classes, and authentic assessments. Students receive guidance on evaluating published research and engaging critically with literature through lectures and seminars. Students will also learn to write in the style of scientific research papers, formal reports and populate science articles, enhancing their ability to communicate complex ideas effectively. |
| **Research-apprenticed**<br>Experiencing the research process and methods; building new knowledge. | **Research apprenticed** – Our programme provides the training to ensure the students become junior researchers by the end of their degrees. Across the programme students develop crucial transferable skills for both research and future employment, including report writing, group work, presentation skills, reading research papers, and data searching skills. In the final year of the programme students will be able to undertake small research project(s) to practice the transferable skills developed throughout the course and to solve their own research question. |

**As part of studying at a research-intensive university, students on this programme have the following extra or co-curricular opportunities available to them to gain exposure to research culture:**

In addition to the research-oriented content embedded in the programme's modules, students have several extra-curricular routes to increase their exposure to a global research culture. For example, the School hosts regular academic research seminars throughout the year. These provide all students the opportunity to see Chemistry from outside of Leicester and are an effective way to also establish new connections. Refreshments before and after the seminar facilitate this networking and provide the audience time to meet the speaker for informal conversation and questions. Additionally, we offer the opportunity to conduct a summer research internship in one of the School's academic research groups – although availability of such placements is variable, competitive and limited.

**Teaching on this programme will be research-informed (it draws consciously on systematic inquiry into the teaching and learning process itself) in the following way:**

The teaching in our School is underpinned by the *Research in Chemical Education (RICE*) group, whose reading and contribution to global pedagogic literature promotes the high quality and highly innovative delivery of our programmes. To this end the School has designed an advanced curriculum that promotes excellence, equal opportunity and high performance from its students through innovative practices such as active learning and authentic assessment strategies. These techniques are embedded across all modules in the programme, with all colleagues being

regularly briefed and trained to deliver a consistently excellence student experience. The School supports all staff involved in teaching to gain an accredited Higher Education teaching qualification, in which they demonstrate their use of teaching theory to support their own practice and reflect on their current teaching and continuing professional development.

## 13. Indications of programme quality

All degrees were accredited by the Royal Society of Chemistry in Jan 2016 and reaccredited in January 2022

Academic Review

External examiners reports

Destinations of Leavers from Higher Education (DLHE) survey.

## 14. External Examiner(s) reports

The details of the External Examiner(s) for this programme and the most recent External Examiners' reports for this programme can be found at exampapers@Leicester [log-in required]

UNIVERSITY OF LEICESTER

# Programme Specification (Undergraduate) FOR ENTRY YEAR: 2025/26

**Date created:** 03/02/2021 **Last amended:** 08/12/2024 **Version no.** 1

## Appendix 1: Programme structure (programme regulations)

The University regularly reviews its programmes and modules to ensure that they reflect the current status of the discipline and offer the best learning experience to students. On occasion, it may be necessary to alter particular aspects of a course or module.

**Updates to the programme** (EQED use only)

| Academic year | Module | Change |
|---|---|---|
| 2025/26 (BSc Chemistry) | CH1207 Chemistry of the Real World | Moved from Semester 2 to Semester 1 |
| 2025/26 (BSc Medicinal Chemistry) | CH1211 Introductory Medicinal Chemistry | Moved from Semester 2 to Semester 1 |

BSc Chemistry

**Level 4/Year 1** **2025/26**

Credit breakdown

| Status | Year long | Semester 1 | Semester 2 |
|---|---|---|---|
| Core | 75 credits | 30 credits | 15 credits |
| Optional | n/a | n/a | n/a |

120 credits in total

Core modules

| Delivery period | Code | Title | Credits |
|---|---|---|---|
| Sem 1 | CH1200 | General Chemistry | 15 credits |
| Sem 1 | CH1207 | Chemistry of the Real World | 15 credits |
| Sem 2 | CH1206 | Scientific Method & Principles of Analytical Chemistry | 15 credits |
| Year long | CH1201 | Introductory Organic Chemistry | 15 credits |
| Year long | CH1202 | Introductory Inorganic Chemistry | 15 credits |
| Year long | CH1203 | Introductory Physical Chemistry | 15 credits |
| Year long | CH1204 | Chemistry Maths and Skills | 15 credits |
| Year long | CH1205 | Introductory Practical Chemistry | 15 credits |

**Notes**
Delivery of Year Long modules is weighted towards Semester 2 to ensure approximate equal student workload between semesters.

## Level 5/Year 2 2026/27

Credit breakdown

| Status | Year long | Semester 1 | Semester 2 |
|---|---|---|---|
| Core | 75 credits | 30 credits | 15 credits |
| Optional | n/a | n/a | n/a |

120 credits in total

Core modules

| Delivery period | Code | Title | Credits |
|---|---|---|---|
| Sem 1 | CH2200 | Spectroscopy Theory and Practice | 15 credits |
| Sem 1 | CH2207 | Polymer and Materials Chemistry | 15 credits |

| Delivery period | Code | Title | Credits |
|---|---|---|---|
| Sem 2 | CH2206 | Analytical Chemistry in Practice | 15 credits |
| Year long | CH2201 | Organic Chemistry | 15 credits |
| Year long | CH2202 | Inorganic Chemistry | 15 credits |
| Year long | CH2203 | Physical Chemistry | 15 credits |
| Year long | CH2204 | Practical Chemistry and Key Skills | 30 credits |

**Notes**
Delivery of Year Long modules is weighted towards Semester 2 to ensure approximate equal student workload between semesters.

## Level 6/Year 3 2027/28

Credit breakdown

| Status | Year long | Semester 1 | Semester 2 |
|---|---|---|---|
| Core | 45 credits | 30 credits | n/a |
| Optional | n/a | n/a | 45 credits |

120 credits in total

Core modules

| Delivery period | Code | Title | Credits |
|---|---|---|---|
| Sem 1 | CH3201 | Advanced Organic Chemistry | 15 credits |
| Sem 1 | CH3202 | Advanced Inorganic Chemistry | 15 credits |
| Sem 1 | CH3263 | Chemistry BSc Projects Part 1 | 15 credits |
| Year long | CH3260 | Research Skills, Employability & General Paper | 15 credits |
| Sem 2 | CH3264 | Chemistry BSc Projects Part 2 | 15 credits |

**Notes**
Delivery of Year Long modules is weighted to ensure approximate equal student workload between semesters.

## Option modules

| Delivery period | Code | Title | Credits |
|---|---|---|---|
| Semester 2 | CH3203* | Advanced Physical Chemistry* | 15 credits |
| Semester 2 | CH3205 | Metals in Synthesis | 15 credits |
| Semester 2 | CH3206* | Advanced Analytical Chemistry* | 15 credits |
| Semester 2 | CH3208 | Advanced Materials Chemistry | 15 credits |
| Semester 2 | CH3213 | Major Therapeutic Areas | 15 credits |
| Semester 2 | NT3200 | Sustainability Enterprise Partnership Project | 15 credits |

**Notes**
This is an indicative list of option modules and not definitive of what will be available. Option module choice is also subject to availability, timetabling, student number restrictions and, where appropriate, students having taken appropriate pre-requisite modules.

*Students must choose at least one of CH3203 and CH3206.

# BSc Chemistry with Year in Industry

**Level 4/Year 1 2025/26**

## Credit breakdown

| Status | Year long | Semester 1 | Semester 2 |
|---|---|---|---|
| Core | 75 credits | 30 credits | 15 credits |
| Optional | n/a | n/a | n/a |

120 credits in total

Core modules

| Delivery period | Code | Title | Credits |
|---|---|---|---|
| Sem 1 | CH1200 | General Chemistry | 15 credits |
| Sem 1 | CH1207 | Chemistry of the Real World | 15 credits |
| Sem 2 | CH1206 | Scientific Method & Principles of Analytical Chemistry | 15 credits |
| Year long | CH1201 | Introductory Organic Chemistry | 15 credits |
| Year long | CH1202 | Introductory Inorganic Chemistry | 15 credits |
| Year long | CH1203 | Introductory Physical Chemistry | 15 credits |
| Year long | CH1204 | Chemistry Maths and Skills | 15 credits |
| Year long | CH1205 | Introductory Practical Chemistry | 15 credits |

**Notes**
Delivery of Year Long modules is weighted towards Semester 2 to ensure approximate equal student workload between semesters.

## Level 5/Year 2 2026/27

Credit breakdown

| Status | Year long | Semester 1 | Semester 2 |
|---|---|---|---|
| Core | 75 credits | 30 credits | 15 credits |
| Optional | n/a | n/a | n/a |

120 credits in total

Core modules

| Delivery period | Code | Title | Credits |
|---|---|---|---|
| Sem 1 | CH2200 | Spectroscopy Theory and Practice | 15 credits |
| Sem 1 | CH2207 | Polymer and Materials Chemistry | 15 credits |

| Delivery period | Code | Title | Credits |
|---|---|---|---|
| Sem 2 | CH2206 | Analytical Chemistry in Practice | 15 credits |
| Year long | CH2201 | Organic Chemistry | 15 credits |
| Year long | CH2202 | Inorganic Chemistry | 15 credits |
| Year long | CH2203 | Physical Chemistry | 15 credits |
| Year long | CH2204 | Practical Chemistry and Key Skills | 30 credits |

**Notes**
Delivery of Year Long modules is weighted towards Semester 2 to ensure approximate equal student workload between semesters.

**Year in Industry** 2027/28

Credit breakdown

| Status | Year long | Semester 1 | Semester 2 |
|---|---|---|---|
| Core | n/a | n/a | n/a |
| Optional | n/a | n/a | n/a |

0 credits in total

Core modules

| Delivery period | Code | Title | Credits |
|---|---|---|---|
| Year long | ADCH223 | On Placement | n/a |

**Level 6/Year 3 2028/29**

Credit breakdown

| Status | Year long | Semester 1 | Semester 2 |
|---|---|---|---|
| Core | 45 credits | 30 credits | n/a |

| Status | Year long | Semester 1 | Semester 2 |
|---|---|---|---|
| Optional | n/a | n/a | 45 credits |

120 credits in total

Core modules

| Delivery period | Code | Title | Credits |
|---|---|---|---|
| Sem 1 | CH3201 | Advanced Organic Chemistry | 15 credits |
| Sem 1 | CH3202 | Advanced Inorganic Chemistry | 15 credits |
| Sem 1 | CH3263 | Chemistry BSc Projects Part 1 | 15 credits |
| Year long | CH3260 | Research Skills, Employability & General Paper | 15 credits |
| Sem 2 | CH3264 | Chemistry BSc Projects Part 2 | 15 credits |

**Notes**

Delivery of Year Long modules is weighted to ensure approximate equal student workload between semesters.

Option modules

| Delivery period | Code | Title | Credits |
|---|---|---|---|
| Semester 2 | CH3203* | Advanced Physical Chemistry* | 15 credits |
| Semester 2 | CH3205 | Metals in Synthesis | 15 credits |
| Semester 2 | CH3206* | Advanced Analytical Chemistry* | 15 credits |
| Semester 2 | CH3208 | Advanced Materials Chemistry | 15 credits |
| Semester 2 | CH3213 | Major Therapeutic Areas | 15 credits |
| Semester 2 | NT3200 | Sustainability Enterprise Partnership Project | 15 credits |

**Notes**

This is an indicative list of option modules and not definitive of what will be available. Option module choice is also subject to availability, timetabling, student number restrictions and, where appropriate, students having taken appropriate pre-requisite modules.

*Students must choose at least one of CH3203 and CH3206.

## BSc Medicinal Chemistry

**Level 4/Year 1 2025/26**

Credit breakdown

| Status | Year long | Semester 1 | Semester 2 |
|---|---|---|---|
| Core | 75 credits | 30 credits | 15 credits |
| Optional | n/a | n/a | n/a |

120 credits in total

Core modules

| Delivery period | Code | Title | Credits |
|---|---|---|---|
| Sem 1 | CH1200 | General Chemistry | 15 credits |
| Sem 1 | CH1211 | Introductory Medicinal Chemistry | 15 credits |
| Sem 2 | CH1206 | Scientific Method & Principles of Analytical Chemistry | 15 credits |
| Year long | CH1201 | Introductory Organic Chemistry | 15 credits |
| Year long | CH1202 | Introductory Inorganic Chemistry | 15 credits |
| Year long | CH1203 | Introductory Physical Chemistry | 15 credits |
| Year long | CH1204 | Chemistry Maths and Skills | 15 credits |
| Year long | CH1205 | Introductory Practical Chemistry | 15 credits |

**Notes**
Delivery of Year Long modules is weighted towards Semester 2 to ensure approximate equal student workload between semesters.

**Level 5/Year 2 2026/27**

Credit breakdown

| Status | Year long | Semester 1 | Semester 2 |
|---|---|---|---|
| Core | 75 credits | 30 credits | 15 credits |
| Optional | n/a | n/a | n/a |

120 credits in total

Core modules

| Delivery period | Code | Title | Credits |
|---|---|---|---|
| Sem 1 | CH2200 | Spectroscopy Theory and Practice | 15 credits |
| Sem 1 | CH2211 | Pharmaceutics | 15 credits |
| Sem 2 | CH2206 | Analytical Chemistry in Practice | 15 credits |
| Year long | CH2201 | Organic Chemistry | 15 credits |
| Year long | CH2202 | Inorganic Chemistry | 15 credits |
| Year long | CH2203 | Physical Chemistry | 15 credits |
| Year long | CH2204 | Practical Chemistry and Key Skills | 30 credits |

**Notes**

Delivery of Year Long modules is weighted towards Semester 2 to ensure approximate equal student workload between semesters.

**Level 6/Year 3 2027/28**

Credit breakdown

| Status | Year long | Semester 1 | Semester 2 |
|---|---|---|---|
| Core | 15 credits | 45 credits | 45 credits |
| Optional | n/a | n/a | 15 credits |

120 credits in total

## Core modules

| Delivery period | Code | Title | Credits |
|---|---|---|---|
| Sem 1 | CH3201 | Advanced Organic Chemistry | 15 credits |
| Sem 1 | CH3202 | Advanced Inorganic Chemistry | 15 credits |
| Sem 1 | CH3263 | Chemistry BSc Projects Part 1 | 15 credits |
| Sem 2 | CH3211 | Hit to Lead Drug Discovery | 15 credits |
| Sem 2 | CH3213 | Major Therapeutic Areas | 15 credits |
| Year long | CH3260 | Research Skills, Employability & General Paper | 15 credits |
| Sem 2 | CH3264 | Chemistry BSc Projects Part 2 | 15 credits |

**Notes**

Delivery of Year Long modules is weighted to ensure approximate equal student workload between semesters.

## Option modules

| Delivery period | Code | Title | Credits |
|---|---|---|---|
| Semester 2 | CH3203 | Advanced Physical Chemistry | 15 credits |
| Semester 2 | CH3205 | Metals in Synthesis | 15 credits |
| Semester 2 | CH3206 | Advanced Analytical Chemistry | 15 credits |
| Semester 2 | CH3208 | Advanced Materials Chemistry | 15 credits |
| Semester 2 | NT3200 | Sustainability Enterprise Partnership Project | 15 credits |

**Notes**

This is an indicative list of option modules and not definitive of what will be available. Option module choice is also subject to availability, timetabling, student number restrictions and, where appropriate, students having taken appropriate pre-requisite modules.

BSc Medicinal Chemistry with Year in Industry

**Level 4/Year 1 2025/26**

Credit breakdown

| **Status** | **Year long** | **Semester 1** | **Semester 2** |
|---|---|---|---|
| Core | 75 credits | 30 credits | 15 credits |
| Optional | n/a | n/a | n/a |

120 credits in total

Core modules

| **Delivery period** | **Code** | **Title** | **Credits** |
|---|---|---|---|
| Sem 1 | CH1200 | General Chemistry | 15 credits |
| Sem 1 | CH1211 | Introductory Medicinal Chemistry | 15 credits |
| Sem 2 | CH1206 | Scientific Method & Principles of Analytical Chemistry | 15 credits |
| Year long | CH1201 | Introductory Organic Chemistry | 15 credits |
| Year long | CH1202 | Introductory Inorganic Chemistry | 15 credits |
| Year long | CH1203 | Introductory Physical Chemistry | 15 credits |
| Year long | CH1204 | Chemistry Maths and Skills | 15 credits |
| Year long | CH1205 | Introductory Practical Chemistry | 15 credits |

**Notes**

Delivery of Year Long modules is weighted towards Semester 2 to ensure approximate equal student workload between semesters.

**Level 5/Year 2** **2026/27**

Credit breakdown

| Status | Year long | Semester 1 | Semester 2 |
|---|---|---|---|
| Core | 75 credits | 30 credits | 15 credits |
| Optional | n/a | n/a | n/a |

120 credits in total

Core modules

| Delivery period | Code | Title | Credits |
|---|---|---|---|
| Sem 1 | CH2200 | Spectroscopy Theory and Practice | 15 credits |
| Sem 1 | CH2211 | Pharmaceutics | 15 credits |
| Sem 2 | CH2206 | Analytical Chemistry in Practice | 15 credits |
| Year long | CH2201 | Organic Chemistry | 15 credits |
| Year long | CH2202 | Inorganic Chemistry | 15 credits |
| Year long | CH2203 | Physical Chemistry | 15 credits |
| Year long | CH2204 | Practical Chemistry and Key Skills | 30 credits |

**Notes**

Delivery of Year Long modules is weighted towards Semester 2 to ensure approximate equal student workload between semesters.

**Year in Industry** 2027/28

Credit breakdown

| Status | Year long | Semester 1 | Semester 2 |
|---|---|---|---|
| Core | n/a | n/a | n/a |
| Optional | n/a | n/a | n/a |

0 credits in total

Core modules

| Delivery period | Code | Title | Credits |
|---|---|---|---|
| Year long | ADCH223 | On Placement | n/a |

**Notes**
Delivery of Year Long modules is weighted to ensure approximate equal student workload between semesters.

## Level 6/Year 3 2028/29

Credit breakdown

| Status | Year long | Semester 1 | Semester 2 |
|---|---|---|---|
| Core | 15 credits | 45 credits | 45 credits |
| Optional | n/a | n/a | 15 credits |

120 credits in total

Core modules

| Delivery period | Code | Title | Credits |
|---|---|---|---|
| Sem 1 | CH3201 | Advanced Organic Chemistry | 15 credits |
| Sem 1 | CH3202 | Advanced Inorganic Chemistry | 15 credits |
| Sem 1 | CH3263 | Chemistry BSc Projects Part 1 | 15 credits |
| Sem 2 | CH3211 | Hit to Lead Drug Discovery | 15 credits |
| Sem 2 | CH3213 | Major Therapeutic Areas | 15 credits |
| Year long | CH3260 | Research Skills, Employability & General Paper | 15 credits |
| Sem 2 | CH3264 | Chemistry BSc Projects Part 2 | 15 credits |

**Notes**
Delivery of Year Long modules is weighted to ensure approximate equal student workload between semesters.

Option modules

| Delivery period | Code | Title | Credits |
|---|---|---|---|
| Semester 2 | CH3203 | Advanced Physical Chemistry | 15 credits |
| Semester 2 | CH3206 | Advanced Analytical Chemistry | 15 credits |
| Semester 2 | CH3208 | Advanced Materials Chemistry | 15 credits |
| Semester 2 | NT3200 | Sustainability Enterprise Partnership Project | 15 credits |

**Notes**
This is an indicative list of option modules and not definitive of what will be available. Option module choice is also subject to availability, timetabling, student number restrictions and, where appropriate, students having taken appropriate pre-requisite modules.

## Appendix 2: Module specifications

See undergraduate module specification database [login required] (Note - modules are organized by year of delivery