

**BSc Biochemistry with French for Science
BSc Biochemistry with German for Science
BSc Biochemistry with Spanish for Science**

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 | | | |
|--|---|-----|-----------|
| Programme Title | Biochemistry with French for Science; Biochemistry with German for Science; Biochemistry with Spanish for Science | | |
| Award(s) | BSc | | |
| Programme Code | C7R1; C7R2; C7R4 | | |
| Associateship | Associateship of the Royal College of Science (ARCS) | | |
| Awarding Institution | Imperial College London | | |
| Teaching Institution | Imperial College London | | |
| Faculty | Faculty of Natural Sciences | | |
| Department | Department of Life Sciences | | |
| Main Location of Study | South Kensington Campus | | |
| Mode and Period of Study | 4 academic years full-time | | |
| Cohort Entry Points | Annually in October | | |
| Relevant QAA Benchmark Statement(s) and/or other external reference points | Biosciences | | |
| Total Credits | ECTS: | 270 | CATS: 540 |
| FHEQ Level | Level 6 | | |
| EHEA Level | 1 st cycle | | |
| External Accrator(s) | None | | |

| Specification Details | |
|---|-----------------|
| Student cohorts covered by specification | 2017/18 entry |
| Person responsible for the specification | Dr Huw Williams |
| Date of introduction of programme | |
| Date of programme specification/revision | August 2017 |
| Programme Overview | |
| <p>The four-year BSc Biochemistry with French/German/Spanish for Science programmes include training in the chosen language using language labs in the first and second year. Students spend the third year attending taught courses and conducting a research project at an approved educational institute in another European country. Students will then specialise in the final year, making their choice from a wide range of options and research projects.</p> <p>Our biochemistry and biotechnology courses contain topics covering all aspects of the applied biochemistry and the biotechnology industry, such as intellectual property and patents, commercialising technology, and entrepreneurship, with lectures and case studies from biotechnology business leaders and academics.</p> | |
| Learning Outcomes | |
| <p>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</p> | |
| <p>Knowledge and Understanding of:</p> <ul style="list-style-type: none"> • Biological chemistry; molecular biology and genetics; cell biology; protein and enzyme structure and function; (Year 1) • Genes and genomics; macromolecular structure and function; integrative cell biology; (Year 2) • Advanced knowledge and understanding of three specialist modules; (Year 3) <p>Intellectual Skills (thinking) skills - able to:</p> <ul style="list-style-type: none"> • Analyse and solve biochemistry-based problems; • Integrate and evaluate information; • Formulate and test hypotheses using appropriate experimental design and statistical analysis of data; • Plan, conduct and write-up a programme of original research <p>Practical skills – able to:</p> <ul style="list-style-type: none"> • Plan and execute safely a series of experiments; • Use laboratory methods to generate data; • Analyse experimental results and determine their strength and validity; • Prepare technical reports; • Give technical presentations; • Use the scientific literature effectively; • Use computational tools and packages. | |

Transferable skills – able to:

- Communicate effectively through oral presentations, computer processing and presentations, and written reports;
- Work independently and as part of a team
- Integrate and evaluate information from a variety of sources;
- Use Information and Communications Technology;
- Manage resources and time;
- Learn independently with open-mindedness and critical enquiry;
- Learn effectively for the purpose of continuing professional development.

Entry Requirements

| | | |
|----------------------------------|----------------------|--|
| Academic Requirement | Grade Requirement | Normally a minimum AAA overall |
| | Subject Requirements | A in Chemistry A in another science subject (Biology is preferred but not mandatory) or Mathematics (or a comparable qualification recognised by the College) Candidates must also have achieved a minimum grade B at AS level in the relevant foreign language |
| | Excluded Subjects | Key Skills Critical Thinking General Studies |
| International Baccalaureate (IB) | Grade Requirement | Minimum 38 overall |
| | Subject Requirements | 6 in Chemistry at higher level 6 in Biology or Mathematics at higher level 6 at standard level or 5 at higher level in the relevant foreign language (or a comparable qualification recognised by the College) |
| GCSE Requirements | | B in Mathematics, Chemistry and Biology (or Combined Sciences) |
| English Language Requirement | | Higher requirement IELTS score of 7.0 overall (minimum 6.5 in all elements) |
| Admissions Tests | | None |
| Interview | | No |

The programme's competency standards documents can be found at:
<http://www.imperial.ac.uk/students/academic-support/graduate-attributes/>

Learning & Teaching Strategy

| | | | | | |
|---|---|----------|----------|------------|-----------|
| Scheduled Learning & Teaching Methods | <ul style="list-style-type: none"> • Laboratory • Lectures • Tutorials • Seminars | | | | |
| E-learning & Blended Learning Methods | <ul style="list-style-type: none"> • Computer-based work | | | | |
| Project Learning Methods | <ul style="list-style-type: none"> • Group project • Research project/dissertation | | | | |
| Placement Learning Methods | <ul style="list-style-type: none"> • Site visits | | | | |
| Assessment Strategy | | | | | |
| Assessment Methods | <ul style="list-style-type: none"> • Written Examinations • Coursework • Laboratory write-ups • Essays • Reports • Dissertations • Presentations • Individual research project report • Viva | | | | |
| Academic Feedback Policy | | | | | |
| <p>Coursework feedback is provided by a feedback form attached to items of coursework. Feedback is also provided via Blackboard on automatically-assessed pieces of coursework and on formative MCQ quizzes. Personal tutors hold timetabled tutorials at the start of the academic year to give feedback on examination performance and can be approached by their tutees at any point in the year for further guidance. The undergraduate teaching office repeatedly informs individual staff via email when coursework is due back at the appropriate time. The Director of Undergraduate Studies routinely monitors the quality and quantity of feedback provided on marked coursework. In some instances, generic class feedback is returned to all students via email or a Blackboard announcement once coursework is marked.</p> | | | | | |
| Re-sit Policy | | | | | |
| <p>The College's Policy on Re-sits is available at: http://www.imperial.ac.uk/student-records-and-data/for-current-students/undergraduate-and-taught-postgraduate/exams-assessments-and-regulations/</p> | | | | | |
| Mitigating Circumstances Policy | | | | | |
| <p>The College's Policy on Mitigating Circumstances is available at: http://www.imperial.ac.uk/student-records-and-data/for-current-students/undergraduate-and-taught-postgraduate/exams-assessments-and-regulations/</p> | | | | | |
| Programme Structure | | | | | |
| Year One | Pre-session | Term One | Term Two | Term Three | Term Four |

| | | | | | |
|---|--------------------------------------|--|----------|------------|-----------|
| Core Modules | 0 | 2 in term one, 3 over term one and two | 2 | 0 | 0 |
| Elective Modules | 0 | 0 | 0 | 0 | 0 |
| Projects | 0 | 0 | 0 | 0 | 0 |
| Year Two | Pre-session | Term One | Term Two | Term Three | Term Four |
| Core Modules | 0 | 2 in term one, 3 over term one and two | 2 | 0 | 0 |
| Elective Modules | 0 | 0 | 0 | 1 | 0 |
| Projects | 0 | 0 | 1 | 0 | 0 |
| Year Three | Pre-session | Term One | Term Two | Term Three | Term Four |
| Core Modules | Varies according to host institution | | | | |
| Elective Modules | | | | | |
| Projects | | | | | |
| Year Four | Pre-session | Term One | Term Two | Term Three | Term Four |
| Core Modules | 0 | 2 | 0 | 0 | 0 |
| Elective Modules | 0 | 2 | 1 | 0 | 0 |
| Projects | 0 | 0 | 1 | | 0 |
| Assessment Dates & Deadlines | | | | | |
| Year One | | | | | |
| Written Examinations | | January and June | | | |
| Coursework Assessments | | Continuous | | | |
| Project Deadlines | | N/A | | | |
| Practical Assessments | | Continuous | | | |

| | |
|---|--------------------------------------|
| Year Two | |
| Written Examinations | January and June |
| Coursework Assessments | Continuous |
| Project Deadlines | May |
| Practical Assessments | Continuous |
| Year Three | |
| Written Examinations | Varies according to host institution |
| Coursework Assessments | |
| Project Deadlines | |
| Practical Assessments | |
| Year Four | |
| Written Examinations | January and February |
| Coursework Assessments | Continuous |
| Project Deadlines | June |
| Practical Assessments | Continuous |
| Assessment Structure | |
| Marking Scheme | |
| <p>Regulation of Assessment Minimum pass mark is 40% overall for each course module, which must include a mark of at least 35% in the coursework component and a mark of at least 35% in the examination.</p> <p>For course modules that include a written examination, coursework typically contributes 20- 25% of the total marks available.</p> <p>Assessment details are provided in the First, Second and Third Year Student Handbooks.</p> <p>The final degree mark is calculated from the mean mark achieved in Years 1, 2 and 4.</p> <p>The year weightings for students admitted in or after October 2013 are 11.1: 33.3: 0: 55.6, respectively.</p> <p>The year weightings for students admitted before October 2013 are 5:35:0:60.</p> <p>To qualify for the award of BSc Honours, students must pass all courses.</p> <p>Assessment Rules and Degree Classification: For undergraduate programmes classification of degrees will be according to the following range of</p> | |

marks:

First class 70 - 100%

Second class (upper division) 60 - 69.9%

Second class (lower division) 50 - 59.9%

Third class 40 - 49.9%

Fail 0-39%

| Module Weightings | | | |
|-------------------|------------------|--|--------------------|
| Year | % Year Weighting | Module | % Module Weighting |
| Year One | 11.1% | Molecular Biology | 20.83r% |
| | | Proteins and Enzymes | 20.83r% |
| | | Biological Chemistry | 20.83r% |
| | | Cell Biology | 20.83r% |
| | | French/German/Spanish Level 4 (Language for Science) | 12.5% |
| | | French/German/Spanish History & Politics | 4.16r% |
| Year Two | 33.3% | Genes and Genomics | 15.15r% |
| | | Integrative Cell Biology | 15.15r% |
| | | Fundamentals of Molecular Biochemistry | 15.15r% |
| | | Protein Science | 15.15r% |
| | | Tutored Dissertation | 10.60r% |
| | | <i>One module from elective group (A)</i> | 10.60r% |
| | | French/German/Spanish Level 5 (Language for Science) | 13.63r% |
| | | French/German/Spanish Science & Technology | 4.54r% |
| Year Three | 0% | Year Abroad | N/A |
| Year Four | 55.6% | French/German/Spanish Scientific and Technical Translation with the use of Translation Technology | 9.09r% |
| | | <i>EITHER:</i> Laboratory Based Research Project <i>OR</i> Literature Based Dissertation <i>AND</i> Science Communication | 31.81r% |
| | | <i>One module from elective group (B)</i> | 19.69r% |
| | | <i>One module from elective group (C)</i> | 19.69r% |
| | | <i>One module from elective group (D)</i> | 19.69r% |

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 |
|-----------------------|---|-------------------|------|--------------|------------------------|-------------------------|----------------|----------------------|----------------------|----------------|---------------|-------|
| LS1-MB | Molecular Biology | CORE | 1 | 96 | 279 | 0 | 375 | 75% | 10% | 15% | 4 | 15.00 |
| LS1-PE | Proteins and Enzymes | CORE | 1 | 65 | 310 | 0 | 375 | 75% | 13% | 12% | 4 | 15.00 |
| LS1-BC | Biological Chemistry | CORE | 1 | 74 | 301 | 0 | 375 | 75% | 5% | 20% | 4 | 15.00 |
| LS1-CB | Cell Biology | CORE | 1 | 61 | 314 | 0 | 375 | 75% | 8% | 17% | 4 | 15.00 |
| ML.04/ML.14/ ML.44 | French/German/Spanish Level 4 (Language for Science) | CORE | 1 | 70 | 155 | 0 | 225 | 35% | 65% | 0% | 6 | 9.00 |
| N/A | French/German/Spanish History & Politics | CORE | 1 | 20 | 55 | 0 | 75 | 50% | 50% | 0% | 5 | 3.00 |
| LS2-GG | Genes and Genomics | CORE | 2 | 49 | 201 | 0 | 250 | 75% | 7% | 18% | 5 | 10.00 |
| LS2-ICB | Integrative Cell Biology | CORE | 2 | 41 | 209 | 0 | 250 | 75% | 0% | 25% | 5 | 10.00 |
| LS2-MSF1 | Fundamentals of Molecular Biochemistry | CORE | 2 | 156 | 194 | 0 | 250 | 75% | 14% | 11% | 5 | 10.00 |
| LS2-MSF2 | Protein Science | CORE | 2 | 52 | 198 | 0 | 250 | 75% | 14% | 11% | 5 | 10.00 |
| LS2-TDBC | Tutored Dissertation | CORE | 2 | 4 | 171 | 0 | 175 | 0% | 100% | 0% | 5 | 7.00 |
| ML.05/ML.15/ ML.45 | French/German/Spanish Level 5 (Language for Science) | CORE | 2 | 70 | 155 | 0 | 225 | 35% | 65% | 0% | 6 | 9.00 |
| N/A | Science & Technology French/German/Spanish Course | CORE | 2 | 20 | 55 | 0 | 75 | 50% | 50% | 0% | 5 | 3.00 |

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 |
|-------------|---|-------------------|------|--------------|------------------------|-------------------------|----------------|----------------------|----------------------|----------------|---------------|-------|
| LS2-TB | Topics in Biotechnology | ELECTIVE (A) | 4 | 44 | 129 | 0 | 175 | 75% | 0% | 25% | 5 | 7.00 |
| LS2-CCB | Challenges in Cell Biology | ELECTIVE (A) | 4 | 42 | 133 | 0 | 175 | 75% | 12.5% | 12.5% | 5 | 7.00 |
| LS2-AMBC | Applied Molecular Biochemistry | ELECTIVE (A) | 4 | 39 | 136 | 0 | 175 | 75% | 0 | 25% | 5 | 7.00 |
| N/A | Year Abroad (Language for Science) | CORE | 3 | 0 | 0 | 1750 | 1750 | 0% | 100% | 0% | 6 | 66.00 |
| N/A | French/German/Spanish Scientific and Technical Translation with the use of Translation Technology | CORE | 4 | 40 | 110 | 0 | 150 | 0% | 40% | 60% | 5 | 6.00 |
| LS3-FYRP | Lab Based Research Project | CORE* | 4 | 360 | 165 | 0 | 525 | 0% | 100% | 0% | 6 | 21.00 |
| LS3-FYRD | Literature Based Dissertation | CORE* | 4 | 10 | 315 | 0 | 325 | 0% | 100% | 0% | 6 | 13.00 |
| LS3-SCICOMM | Science Communication | CORE* | 4 | 31 | 169 | 0 | 200 | 0% | 100% | 0% | 6 | 8.00 |
| LS3-ATPMB | Plant Biotechnology and Development | ELECTIVE (B) | 4 | 56 | 269 | 0 | 325 | 75% | 9% | 16% | 6 | 13.00 |
| LS3-DRIBS | Damage and Repair in Biological Systems | ELECTIVE (B) | 4 | 58.5 | 266.5 | 0 | 325 | 75% | 17% | 8% | 6 | 13.00 |
| LS3-SBDD | Structural Biology & Drug Design | ELECTIVE (B) | 4 | 73 | 252 | 0 | 325 | 75% | 20% | 5% | 6 | 13.00 |
| LS3-MM | Medical Microbiology | ELECTIVE (B) | 4 | 52 | 273 | 0 | 325 | 75% | 5% | 20% | 6 | 13.00 |
| LS3-SCRA | Stem Cells, Regeneration and Ageing | ELECTIVE (B) | 4 | 50 | 275 | 0 | 325 | 75% | 0% | 25% | 6 | 13.00 |

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 |
|------------|--|-------------------|------|--------------|------------------------|-------------------------|----------------|----------------------|----------------------|----------------|---------------|-------|
| LS3-NR | Neuroscience Research | ELECTIVE (B) | 4 | 46 | 279 | 0 | 325 | 75% | 5% | 20% | 6 | 13.00 |
| LS3-MNE | Metabolic and Network Engineering | ELECTIVE (B) | 4 | 62 | 263 | 0 | 325 | 75% | 9% | 16% | 6 | 13.00 |
| LS3-PDB | Principles of Development | ELECTIVE (B) | 4 | 45 | 280 | 0 | 325 | 75% | 20% | 5% | 6 | 13.00 |
| LS3-ATII | Advanced Topics in Immunity and Infection | ELECTIVE (C) | 4 | 57 | 268 | 0 | 325 | 75% | 25% | 0% | 6 | 13.00 |
| LS3-MPMI | Symbiosis, Plant Immunity and Disease | ELECTIVE (C) | 4 | 48 | 277 | 0 | 325 | 75% | 17.50% | 7.50% | 6 | 13.00 |
| LS3-ATPVB | Advanced Topics in Parasitology and Vector Biology | ELECTIVE (C) | 4 | 43.5 | 281.5 | 0 | 325 | 75% | 22% | 3% | 6 | 13.00 |
| LS3-ISB | Integrative Systems Biology | ELECTIVE (C) | 4 | 73 | 252 | 0 | 325 | 75% | 5% | 20% | 6 | 13.00 |
| LS3-MGE | Mechanisms of Gene Expression | ELECTIVE (C) | 4 | 38 | 287 | 0 | 325 | 75% | 10% | 15% | 6 | 13.00 |
| LS3-CANCER | Cancer | ELECTIVE (C) | 4 | 56 | 269 | 0 | 325 | 75% | 5% | 20% | 6 | 13.00 |
| LS3-ME | Microbial Ecology | ELECTIVE (C) | 4 | 45 | 280 | 0 | 325 | 75% | 20% | 5% | 6 | 13.00 |
| LS3-SB | Synthetic Biology | ELECTIVE (D) | 4 | 52 | 273 | 0 | 325 | 75% | 10% | 15% | 6 | 13.00 |
| LS3-BDG | Biodiversity Genomics | ELECTIVE (D) | 4 | 40 | 285 | 0 | 325 | 75% | 10% | 15% | 6 | 13.00 |
| LS3-MBBI | Molecular Basis of Bacterial Infection | ELECTIVE (D) | 4 | 53 | 272 | 0 | 325 | 75% | 0% | 25% | 6 | 13.00 |

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 |
|------------|---|-------------------|------|--------------|------------------------|-------------------------|----------------|----------------------|----------------------|----------------|---------------|-------|
| LS3-BAP | Biotechnology Applications of Proteins | ELECTIVE (D) | 4 | 62 | 263 | 0 | 325 | 75% | 5% | 20% | 6 | 13.00 |
| LS3-BIOINF | Bioinformatics | ELECTIVE (D) | 4 | 61 | 264 | 0 | 325 | 75% | 20% | 5% | 6 | 13.00 |
| LS3-MG | Medical Glycobiology | ELECTIVE (D) | 4 | 63 | 262 | 0 | 325 | 75% | 16.50% | 8.50% | 6 | 13.00 |
| LS3-SN | Systems Neuroscience | ELECTIVE (D) | 4 | 44 | 281 | 0 | 325 | 75% | 12.50% | 12.50% | 6 | 13.00 |
| LS3-AI | Advanced Immunology | ELECTIVE (D) | 4 | 54 | 271 | 0 | 325 | 75% | 17.5% | 7.5% | 6 | 13.00 |
| LS3-ABECB | Advanced Bacterial and Eukaryotic Cell Biology | ELECTIVE (C) | 3 | 43 | 282 | 0 | 325 | 75% | 15% | 10% | 6 | 13.00 |

*See 4 table on page 6 (above).

Supporting Information

The Programme Handbook is available at:

<http://www.imperial.ac.uk/life-sciences/undergraduate/biochemistry-and-biotechnology/>

The Module Handbook is available at:

<http://www.imperial.ac.uk/life-sciences/undergraduate/biochemistry-and-biotechnology/>

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://www.imperial.ac.uk/about/governance/academic-governance/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/>

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

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

Modifications

| Modification | Committee | Date | Paper |
|---|---------------------------------|-----------------|------------|
| Introduce new elective module LS3-AI (Advanced Immunology) | Programmes Committee | 25 October 2016 | PC.2016.35 |
| Introduce new elective module LS3-DEE (Disease Ecology and Epidemiology) | Programmes Committee | 25 October 2016 | PC.2016.35 |
| Introduce new elective module LS3-ME (Microbial Ecology) | Programmes Committee | 25 October 2016 | PC.2016.35 |
| Introduce new elective module LS3-PDB (Principles of Development) | Programmes Committee | 25 October 2016 | PC.2016.35 |
| Introduce new elective module LS3-ABECB | Departmental Teaching Committee | 5 December 2016 | |
| Macromolecules in 3 Dimensions name changed to Structural Biology & Drug Design | Departmental Teaching Committee | 5 December 2016 | |

| | | | |
|---|---------------------------------------|----------------------|--|
| Suspend new elective module LS3-DEE (Disease Ecology and Epidemiology) | Departmental Teaching Committee | 27 September 2017 | |
|---|---------------------------------------|----------------------|--|