

Programme Specification for Undergraduate Programme

Leading to:

BSc Biomedical Sciences (Human Health)

BSc Biomedical Sciences (Human Health) with Placement

Applicable for all undergraduate students **starting at FHEQ Level 4 on or after 1st September 2021**

| Version No. | Date | Notes – QA USE ONLY | QA |
|-------------|--------|---|----|
| 1 | May 21 | 2021/22 version of programme spec created with no changes | BT |

| Undergraduate Programme | |
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| 1. Awarding institution | Brunel University London |
| 2. Teaching institution(s) | Brunel University London |
| 3. Home college/department/division | College of Health, Medicine and Life Sciences, Dept of Life Sciences, Biosciences |
| 4. Contributing college/department/division/ associated institution | None |
| 5. Programme accredited by | The Royal Society of Biology |
| 6. Final award(s) and FHEQ Level of Award | BSc (Hons) Biomedical Sciences (Human Health) (FHEQ Level 6) BSc (Hons) Biomedical Sciences (Human Health) with Placement (FHEQ Level 6) |
| 7. Programme title | BSc Biomedical Sciences (Human Health) |
| 8. Programme type (Single honours/joint/major minor) | Single honours |
| 9. Normal length of programme (in months) for each mode of study | 36 months FT, 48 months sandwich |
| 10. Maximum period of registration for each mode of study | Normal or standard duration plus 3 years |
| 11. Variation(s) to September start | n/a |
| 12. Modes of study | Standard |
| 13. Modes of delivery | Full-time and Thick Sandwich |
| 14. Intermediate awards and titles with FHEQ Level of Award | Cert HE in Biomedical Sciences (FHEQ Level 4) Dip HE in Biomedical Sciences (FHEQ Level 5) Dip HE in Biomedical Sciences with Placement (FHEQ Level 5) BSc (Ord) in Medical Biology (FHEQ Level 6) BSc (Ord) in Medical Biology with Placement (FHEQ Level 6) |
| 15. UCAS Code | B990 : 3-year full-time course / B991 : 4-year sandwich course |
| 16. HECoS Code | 100948 (Biomolecular Science) |
| 17. Route Code | B990UBIOMEHH |
| 18. Relevant subject benchmark statements and other external and internal reference points used to inform programme design. | QAA UK Quality Code for Higher Education QAA Benchmark Statement (Biomedical Science) QAA Benchmark Statement (Biosciences) Brunel 2030 |

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| | Brunel Placement Learning Policy, as published under the 'Placements' section of the 'Managing Higher Education Provision with Others' page. |
| 19. Admission Requirements | Details of entry requirements are provided on the University's and College website. Levels of English for non-native speakers are outlined on Brunel International's language requirements pages. |
| 20. Other relevant information (e.g. study abroad, additional information on placements) | Optional work placement year is available after completion of FHEQ level 5 (thick sandwich mode) leading to the award of BSc Biomedical Sciences (Genetics) with Placement. |
| 21. Programme regulations not specified in Senate Regulation 2. Any departure from regulations specified in Senate Regulation 2 must be stated here and approved by Senate. | The Board of Examiners may award students who are registered on the Placement programmes the BSc Biomedical Sciences (Forensic) if they meet the requirements for the award, but have failed to meet the requirements for the award for which they are registered. |
| 22. Further information about the programme is available from the College website. | http://www.brunel.ac.uk/courses/undergraduate/biomedical-sciences-human-health-bsc |

23. EDUCATIONAL AIMS OF THE PROGRAMME

The aim of the BSc Biomedical Sciences programme is to provide students with an understanding of the main subject areas in biosciences and medically related research. These subject areas include biochemistry, genetics, cell and molecular biology, immunology, anatomy and physiology as related to human health, disease and treatment. The programme also seeks to develop good practical, analytical and transferable skills within graduates, applicable to a wide range of employment opportunities, including medicine, MSc and PhD, pharmaceutical research, pathology and diagnosis, clinical trials and data management. Students will be encouraged to exercise independence, initiative and responsibility, and appreciate the need for continued professional development.

FHEQ Level 4

We aim to give students a broad, core foundation of knowledge covering the major themes in biomedical sciences, including biochemistry, cell and molecular biology and physiology, with an emphasis on the underlying processes and functioning of the normal human body. Development of professional attributes is supported by a comprehensive skills programme.

FHEQ Level 5

We aim to give students knowledge of the underlying principles of human health, and an advanced understanding of molecular -, cellular - and immuno-biology. They are able to develop their interests in biochemistry, genetics and microbiology. All pathways develop practical laboratory skills, critical thinking and problem solving skills, and strong emphasis is placed on developing employability and professional skills.

FHEQ Level 6

We aim to give students in-depth knowledge of the underlying mechanisms of selected human pathologies, and to develop confident individuals able to critically analyse, evaluate, interpret and communicate science.

24. PROGRAMME AND INTERMEDIATE LEARNING OUTCOMES

The programme provides opportunities for students to develop and demonstrate knowledge and understanding (K) cognitive (thinking) skills (C) and other skills and attributes (S) in the following areas:

| FHEQ Level | Category (K = knowledge and understanding, C = cognitive (thinking) skills, S = other skills and attributes) | Learning Outcome | Associated Assessment Blocks Code(s) | Associated Study Blocks Code(s) | Associated Modular Blocks Code(s) |
|------------|--|---|--------------------------------------|---------------------------------|-----------------------------------|
| 4 | | | | | |
| 4 | K | Demonstrate knowledge of core topics in biomedical sciences | BB1801 BB1802 | BB1701 BB1702 | |

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| | | | BB1803 BB1804 BB1805 BB1806 | BB1719 BB1704 BB1720 | |
| | K | Demonstrate knowledge of the complexity and interrelationship of scientific disciplines | BB1802 BB1806 | | |
| | C | Apply subject knowledge to address practical problems | BB1802 BB1803 BB1804 | BB1701 BB1702 BB1704 BB1720 BB1706 | |
| | C | Analyse and interpret data | BB1802 BB1803 BB1804 | BB1719 | |
| | S | The ability to communicate basic scientific topics | BB1801 BB1802 BB1804 | BB1701 BB1702 BB1718 BB1719 BB1704 BB1720 BB1706 | |
| | S | Demonstrate awareness of skills required for self managed professional and life-long learning | BB1801 | BB1718 | |
| | S | Demonstrate awareness of IT skills and critical thinking | BB1802 BB1803 BB1804 | BB1719 BB1706 | |
| 5 | | | | | |
| 5 | K | Demonstrate knowledge and understanding of the major themes in biomedical sciences | BB2801 BB2802 BB2803 BB2804 BB2805 BB2806 | BB2704 BB2705 BB2712 BB2710 BB2716 BB2722 BB2730 | |
| | K | Demonstrate knowledge and understanding of topical scientific issues | BB2802 BB2806 | | |
| | C | Apply subject knowledge to address familiar and unfamiliar problems | BB2803 BB2804 BB2805 | BB2704 BB2705 BB2712 BB2710 BB2730 BB2716 BB2722 BB2708 | |
| | C | Analyse and interpret data and scientific literature | BB2802 BB2803 BB2804 | BB2707 | |
| | S | The ability to communicate scientific data and literature | BB2802 BB2803 BB2804 | BB2704 BB2705 BB2712 BB2710 BB2730 BB2716 BB2722 BB2708 | |
| | S | Demonstrate development of skills required for self-managed professional development (experimental techniques, team work and information retrieval) | BB2801 BB2803 BB2804 | BB2707 BB2708 | |

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| | S | Demonstrate development of IT skills and critical thinking | BB2802 BB2803 BB2804 | BB2704 BB2705 BB2712 BB2710 BB2730 BB2716 BB2722 BB2708 BB2707 | |
| 6 | | | | | |
| 6 | K | Demonstrate in-depth knowledge and understanding of selected topics in biomedical sciences | BB3801 BB3802 BB3803 BB3804 | BB3716 BB3701 BB3704 BB3707 BB3714 BB3720 BB3733 | BB3091 |
| | K | Demonstrate engagement with current developments in biosciences and awareness of the wider implications, debate and controversies surrounding these topics | BB3801 BB3802 BB3804 | | BB3091 |
| | C | Apply subject knowledge to address complex familiar and unfamiliar problems | BB3802 BB3803 | BB3716 BB3701 BB3704 BB3707 BB3714 BB3720 BB3733 | BB3091 |
| | C | Critically analyse and interpret data, evaluating it in light of current literature | BB3801 BB3802 | | BB3091 |
| | S | Effectively communicate complex scientific information | BB3801 BB3802 BB3803 BB3804 | BB3716 BB3701 BB3704 BB3707 BB3714 BB3720 BB3733 | BB3091 |
| | S | Demonstrate skills required for self-managed for professional development (Team working, time management, organisation, information retrieval,) | BB3801 BB3802 | | BB3091 |
| | S | Demonstrate IT skills and critical thinking/problem solving skills | BB3802 BB3804 | | BB3091 |

Learning/teaching strategies and methods to enable learning outcomes to be achieved, including formative assessments

The rapid change and development of knowledge in the biosciences necessitates a learning strategy that enables graduates to continue their self-education. We are therefore focussing on developing graduates who have a range of professional (including practical) and generic skills; who are capable of independent and life-long learning; who are able to apply their knowledge to unfamiliar problems and situations; who can critically analyse and interpret data and information; and who can communicate complex information with clarity. The separation of study and assessment allows us to pursue a holistic and over-arching teaching strategy, where topics are explored in lectures, seminars and laboratory sessions, and students' knowledge and understanding are tested through a range of formative activities. All learning outcomes are supported by activities in several study blocks at each level. Additionally, these activities develop the skills expected of bioscience graduates, including competence in basic experimental techniques, safe laboratory practice, (both of which are formatively assessed in Level 4), working independently and in teams, time management and organisational ability.

Summative assessment strategies and methods to enable learning outcomes to be demonstrated

Students are assessed by in-year coursework, end-of-year examinations and a final year project. The coursework assignments and deadlines are set at the beginning of the academic year, encouraging students to see the relevance of the formative activities to the summative assessments. The assignments are challenging (requiring integration of information obtained from various sources) and relevant to employment and further study (analysis, interpretation and communication of data, evaluated in context of current knowledge), as well as requiring creativity to problem solve. Examinations testing knowledge, understanding and problem solving in the main subject areas in biomedical sciences increase in complexity as students progress through the programme, and require students to demonstrate an appreciation of the complexity of biosciences and engagement with current issues. Reflection on learning is assessed at each level with students developing their innovation and entrepreneurial skills in Level 4 and 5. The final year project is the single most important assessment of the programme, requiring students to undertake and report on an extended, independent investigation. Each learning outcome is covered by more than one assessment.

25. Programme Structure, progression and award requirements

Programme structures and features: levels, assessment blocks, credit and progression and award requirements

- **Compulsory block:** one which all students registered for the award are required to take as part of their programme of study. These will be listed in the left hand column;
- **Optional block:** one which students choose from an 'option range'. These will be listed in the right hand column;
- A **core assessment** is an assessment identified within an assessment block or modular block (either compulsory or optional) which must be passed (at grade D- or better) in order to be eligible to progress and to be eligible for the final award. All core assessments must be specified on the programme specification next to the appropriate assessment or modular block:

Where students are expected to pass the block at D- or better, but not necessarily all elements, then the block itself is core.

e.g. AB3000 Project (40)
Core: Block

Where only some elements of assessments are required to be passed at D- or better, these will be identified by listing each element that is core

e.g. ABXXX1 Title (XX credits)
Core: 1 & 4

Where students are expected to pass all assessments in a block then this will be identified. By setting the assessment this way, students are also required to pass the block by default. This will be identified thus:

e.g. ABXXXX Title (XX credits)
Core: All, Block

- A **non-core assessment** does not have to be passed at grade D- or better, but must be better than a grade F, in order to progress and to be eligible for the final award.

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| FHEQ Level 4 | |
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| <p>Compulsory assessment block codes, titles and credit</p> <p>All L4 assessment blocks are core.</p> <p>BB1801 Research and Communication Skills (20) Core, Block BB1802 Practical Skills 1: Microscopy (20) Core, Block BB1803 Practical Skills 2: Biochemical Analysis (20) Core, Block BB1804 Practical Skills 3: Molecular Analysis (20) Core, Block BB1805 Biomedical Sciences Examinations 1 (20) Core, Block BB1806 Synoptic Examination 1 (20) Core, Block</p> | <p>Optional assessment block codes, titles and credits</p> |
| <p>Compulsory study block codes, titles and credit volume</p> <p>BB1701 The Human Body: Principles of Anatomy and Physiology (20) BB1702 Biochemistry: Structure and Function (20) BB1718 Career Planning and Innovation (15) BB1719 Introduction to Data Analysis (10)</p> <p>BB1704 Practical Skills in Biomedical Sciences (20) BB1720 Biology of the Cell (30) BB1706 Critical Thinking 1 (5) BB1700 Tutoring (0, zero)</p> | <p>Optional Study block codes, titles and credit volume</p> |
| <p>Compulsory modular block codes, titles and credits</p> | <p>Optional modular block codes, titles and credits</p> |
| <p>FHEQ Level 4 Progression and Award Requirements</p> <p>As per Senate Regulation 2</p> | |

| FHEQ Level 5 | |
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| <p>Compulsory assessment block codes, titles and credits</p> <p>BB2801 Professional Skills in Biomedical Sciences (20) BB2802 Primary Literature Interrogation and Synthesis (20) BB2803 Data Evaluation and Reporting (20) BB2804 Data Analysis, Interpretation and Presentation (20) BB2805 Biomedical Sciences Examinations 2 (20) BB2806 Synoptic Examination 2 (20)</p> | <p>Optional assessment block codes, titles and credits</p> |

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| <p>Compulsory study block codes, titles and credit volume</p> <p>BB2704 Molecular and Cellular Biology (20) BB2709 Genetics, Genomics and Human Health (20) BB2711 Human Pathology and Immunology (20) BB2708 Data Analysis (15) BB2707 Career Planning and Entrepreneurship (5) BB2716 Medical Microbiology (20) BB2700 Tutoring (0, zero)</p> | <p>Optional Study block codes, titles and credit volume</p> <p>Choose 1:</p> <p>BB2710 Analytical Biochemistry (20) BB2713 Development, Genetics and Stem Cell Biology (20) BB2730 Metabolic Regulation (20)</p> |
| <p>Compulsory modular block codes, titles and credits</p> | <p>Optional modular block codes, titles and credits</p> |
| <p>FHEQ Level 5 Progression and Award Requirements</p> <p>As per Senate Regulation 2 Students on BSc Biomedical Sciences (Human Health) with Placement will progress to FHEQ Level 5 – With Placement; students on the full-time programme will progress to FHEQ level 6.</p> | |

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| FHEQ Level 5 – Sandwich Placement | |
| <p>Compulsory assessment block codes, titles and credits</p> | <p>Optional assessment block codes, titles and credits</p> |
| <p>Compulsory study block codes, titles and credit volume</p> | <p>Optional study block codes, titles and credit volume</p> |
| <p>Compulsory modular block codes, titles and credits</p> <p>BB2555_CB Professional Experience (120)</p> | <p>Optional modular block codes, titles and credits</p> |
| <p>FHEQ Level 5 Placement Progression and Award Requirements</p> <p>As per Senate Regulation 2 For BSc Biomedical Sciences (Human Health) with Placement, BB2555 will contribute 25% of the FHEQ Level 5 profile and 8.33% of the overall degree calculation.</p> | |

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| FHEQ Level 6 | |
| <p>Compulsory assessment block codes, titles and credits</p> <p>BB3801_CN Scientific Communication (20) BB3802_CN Problem Solving and Data Analysis (20) BB3803_CN Biomedical Sciences Examinations 3 (20) BB3804_CN Synoptic Examination 3 (20)</p> | <p>Optional assessment block codes, titles and credits</p> |
| <p>Compulsory study block codes, titles and credit volume</p> <p>BB3716 Microbial Pathogenesis (20) BB3700 Tutoring (0, zero)</p> | <p>Optional study block codes, titles and credit volume</p> <p>Choose 3:</p> <p>BB3701 Genomic Medicine (20) BB3704 The Biology and Treatment of Cancer (20) BB3707 Cellular Pathologies (20) BB3714 Endocrine Disorders (20) BB3720 Medical Immunology (20) BB3733 Molecular Pharmacology and Toxicology (20)</p> |

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| Compulsory modular block codes, titles and credits | Optional modular block codes, titles and credits |
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| BB3091 Final Year Project (40) Core, Block | |
| FHEQ Level 6 Progression and Award Requirements | |
| As per Senate Regulation 2 | |
| For BSc Biomedical Sciences (Human Health) with Placement, BB2555 will contribute 25% of the FHEQ Level 5 profile and 8.33% of the overall degree calculation. | |
| If registered on the BSc Biomedical Sciences (Human Health) with Placement programme and the work placement module BB2255_CB is not passed at D- or above, the degree of BSc Biomedical Sciences (Human Health) may be awarded by the Board of Examiners. | |
| Intermediate Award | |
| Students may be eligible for a BSc (Ord) in Medical Biology subject meeting SR2 criteria. | |

Please note: this specification provides a concise summary of the main features of the programme and the learning outcomes that a student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. More detailed information on the learning outcomes, content and teaching, learning and assessment methods can be found in the modular block, assessment and study block outlines and other programme and block information. The accuracy of the information contained in this document is reviewed by the University from time to time and whenever a modification occurs.