

<b>PROGRAMME SPECIFICATION</b>	
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<b>1</b>	<b>Awarding Institution</b>	Newcastle University
<b>2</b>	<b>Teaching Institution</b>	Newcastle University
<b>3</b>	<b>Final Award</b>	BSc (Honours)
<b>4</b>	<b>Programme Title</b>	Biochemistry C700  Biochemistry with Professional Placement Year C703  Biochemistry with International Study Year 1988U*  Biochemistry with Placement Year 1304U
<b>5</b>	<b>UCAS/Programme Code</b>	C700 / C703 / 1988U / 1304U
<b>6</b>	<b>Programme Accreditation</b>	Royal Society of Biology (*except for 1988U)
<b>7</b>	<b>QAA Subject Benchmark(s)</b>	Bioscience
<b>8</b>	<b>FHEQ Level</b>	6
<b>9</b>	<b>Date written/revised</b>	June 2026

<b>10</b>	<b>Programme Aims</b>
<p>The academic aims of the programme are as follows:</p> <ul style="list-style-type: none"> <li>• To produce graduates with a sound knowledge and understanding of Biochemistry, aligned with Royal Society of Biology accreditation, the Quality Assurance Agency (QAA) National Qualifications Framework, and the QAA Benchmark Statements for Biosciences.</li> <li>• To produce graduates with an ability to manage their own learning, make use of current research and have an awareness of sustainability within Biochemistry.</li> <li>• To produce graduates capable of working in a wide variety of careers, including careers in biochemistry and related biosciences within the sector, graduate careers and recognise enterprising opportunities.</li> </ul> <p>In addition, the optional placement year (BMD3030/NCL3000) will:</p> <ul style="list-style-type: none"> <li>• Provide students with the experience of seeking and securing a position with an employer and facilitation of independent self-management and proactive interaction in a workplace setting.</li> <li>• Provide a period of experiential learning that will benefit both current academic study and longer-term career plans.</li> <li>• BMD3032 (international study year) will provide an overseas experiential learning opportunity to develop intercultural competence and self-management skills.</li> </ul>	

<b>11</b>	<b>Learning Outcomes</b>
<p>The programme provides opportunities for students to develop and demonstrate knowledge and understanding, qualities, skills and other attributes in the following areas. The programme outcomes have references to the benchmark statements for Biosciences.</p>	
<b>Knowledge and Understanding (A)</b>	
Graduates will be able to:	

- A1. Demonstrate core knowledge and understanding of the breadth of biochemistry including related ethical principles and sustainable practices.
- A2. Exhibit comprehensive and critically informed knowledge of selected areas of biochemistry, including current research developments and the experimental methods that underpin this knowledge

Students who have successfully completed a Professional Placement Year (BMD3030) will have (A3-A6) and students who have successfully completed the Placement Year (NCL3000) will have (A5-A6) and those who have completed BMD3032 (International study year) (A5 and A7):

- A3. Developed a sustained awareness of a Biosciences work environment.
- A4. Applied their knowledge for Biochemistry in a professional context.
- A5. Relate their placement-based learning to other areas of personal development, including academic performance.
- A6. Demonstrate an understanding of a placement environment, how it functions and their contribution to it.
- A7. Applied their knowledge of Biochemistry in a different setting and gained a global cultural and learning experience.

#### **Teaching and Learning Methods: Knowledge and Understanding (A)**

The teaching and learning strategy is designed to encourage a progressive acquisition of knowledge and understanding. The first two semesters of the programme and subsequent core modules will provide core knowledge and understanding of biosciences. The remaining parts of the programme aim to develop students' knowledge of the breadth and scope of biochemistry, an in-depth knowledge of selected areas and understand the experimental basis of this knowledge up to the current research level (A2). There is a gradual change of emphasis over the three taught years from strongly supported teaching, such as lectures which provide the core knowledge and understanding required, to a greater use of study groups and more independent self-directed learning.

The importance of a solid foundation of maths, biology and chemistry knowledge to successful studies is emphasised in the teaching of stage 1. Students use formative tests to assess their current understanding and are directed to remedial on-line and other forms of support material.

Knowledge and understanding are further promoted by seminars and coursework (A1), which allow students to explore material in more depth and to exchange ideas with staff and fellow students. Practical classes reinforce the taught curriculum (A1). A2 is promoted through individual student projects and in-depth analysis of current research literature.

Students are provided with extensive, prioritised reading lists as well as digital resources and they are expected to use these to supplement the taught material, and to prepare for seminars. Seminars and digital resources allow for students to check their knowledge and understanding, and to develop their ability to apply this to novel situations. Study groups are used to reinforce the learning process and develop students as independent learners. A range of diverse assessments enable students to monitor the progress of their learning and understanding. In the final year capstone experience (research project) students are supported by one-on-one supervision to apply their knowledge and understanding to the development of hypotheses which can be critically analysed using independently sourced information.

A3 and A4 applicable to the Biochemistry with Professional Placement Year are acquired through a one-year professional placement which will also enhance their knowledge and understanding of academic material taught at university.

A5-A7 are learning outcomes that are met by successfully completing the degree-focused placement year (BMD3030), the careers placement year (NCL3000) or the international

study year as well as gaining a global cultural and learning experience placement year from the latter (BMD3032).

### **Assessment Strategy: Knowledge and Understanding (A)**

Knowledge and understanding are assessed via a wide range of assessments including unseen written examinations that may be open or closed book as well as wide range of authentic coursework components. Understanding and the ability to apply knowledge is further assessed by coursework. The weighting of examination and coursework varies as appropriate to the module and many modules include some aspect of formative assessment.

The format of the unseen examination also varies as appropriate to the module and the level of study but can include multiple-choice questions (MCQ), structured short answer questions (SAQ), paper interpretation exercises, essays, problem solving, literature reviewing and data analysis.

The coursework element can include practical write ups/laboratory reports, study group tasks, oral presentations, posters, case studies, graphical abstracts, grant proposals, in course tests (typically MCQ), extended essays and timed essays.

Peer review will be employed in assessment in group tasks.

A3 and A4 are assessed by means of a report, and oral presentation or blog post on the Professional Placement Year (BMD3030).

A5 and A6 are assessed by means of the reflective log on the Placement Year (NCL3000 and BMD3032).

These components must be passed for the degree 'with Professional Placement Year' or 'with Placement Year' or with 'International Study Year'.to be awarded.

### **Practical Skills (B)**

On completing the programme students will have:

- B1. Mastered essentials of laboratory skills, safe working practices and the ability to carry out experiments accurately and responsibly.
- B2. The ability to obtain, record, collate, analyse and interpret data.
- B3. The ability to summarise and present such data according to scientific conventions.
- B4. Developed the ability to use primary literature and bibliographic databases.
- B5. Developed the ability to critically evaluate scientific information.
- B6. Developed the ability to undertake independent, in-depth, research in a specific area of biochemistry.

Students who have successfully completed a professional placement year/international study year will also have:

- B7. Further practised and enhanced some or all the above skills during a 1-year placement.

### **Teaching and Learning Methods: Practical Skills (B)**

The core experimental skills of laboratory work and data handling (B1, B2 and B3) are progressively developed throughout the programme through a series of practical classes. Practical classes are supported by postgraduate demonstrators who undergo compulsory training offered by the School of Biomedical, Nutritional and Sport Sciences.

Laboratory practical classes and seminars throughout the programme encourage students to evaluate critically scientific information in a range of forms (data from their own experiments, published papers and problem-solving tasks). Students are introduced at Stage 1 to a Laboratory Code of Practice, where safety and responsibility in the laboratory are outlined. Students develop these skills further through modules that contain practical skills in stage 2 and 3.

Students are provided in their first and second year with training in the use of bibliographic databases including PubMed, Medline and Google Scholar and referencing systems including Endnote. Laboratory practical classes and seminars throughout the programme encourage students to evaluate critically scientific information in a range of forms (data from their own experiments, published papers and problem-solving tasks). The ability to undertake research in relation to the subject specialism is developed progressively from group-based tasks early in the programme to individual in-depth research projects in the final year (B6).

Feedback on laboratory work and practical reports reinforces students' acquisition of basic experimental skills (B1-3). All submitted practical work must be presented according to scientific conventions. Feedback on assessed course work requiring the student to search bibliographic databases reinforces this skill (B4). Study Group tasks and seminars are used to encourage students to develop the confidence to evaluate critically scientific information and students are provided with feedback on these activities (B5). Feedback on study group-based and individual assignments enables students to improve their research skills and this is further reinforced at an advanced level by one-to-one supervision of research projects by experienced, research active academic staff (B6).

The professional placement year will provide a range of opportunities to attain a higher level of competence and develop a wider range of practical skills (B7).

#### **Assessment Strategy: Practical Skills (B)**

Across stage 1, students will be required to demonstrate a basic level of practical skills competence via a Practical Skills Audit (B1). Practical-related assessments require students to demonstrate the skills associated with experimental work (B1-B3), and these are further assessed at advanced level by the stage 3 project supervisor's assessment of the student's competence, the project report and oral presentation. Written assignments throughout the course will assess students' ability to undertake research and to use bibliographic databases (B4, B6) and this is further assessed in the project report. The ability to critically evaluate scientific information (B5) is assessed by various written assignments and seminar presentations, by the project report and by unseen examinations.

The ability to work independently in the research active environment (B6) is primarily assessed by the Stage 3 project supervisors' assessment of competence and professionalism and the ability to show originality in the application of knowledge.

B7 is assessed by means of a report and oral presentation on the professional placement year, plus a satisfactory Placement Supervisor's report.

#### **Intellectual Skills (C)**

On completing the programme students will have:

- C1. An ability to read and use scientific literature with a full and critical understanding, addressing content, context, aims, objectives, quality of information and its interpretation and application.
- C2. An ability to critically evaluate information and data from a variety of sources, to interpret quantitatively and qualitatively scientific information, and to explain complex scientific ideas in written, visual and oral form.
- C3. An ability to assess the value and limitations of existing knowledge and experimental techniques.
- C4. An ability to use and integrate evidence to formulate key hypotheses, to test hypotheses using logical and consistent quantitative and qualitative arguments, and to identify key data in these processes to solve scientific problems.
- C5. Developed skills of independent and reflective learning.
- C6. An ability to solve work-based problems.

#### **Teaching and Learning Methods: Intellectual Skills (C)**

<p>Intellectual skills (C1-C5) are progressively developed throughout the programme by practical and seminar work, study group tasks, written work and the research project.</p> <p>At all stages students are encouraged to consider critically and evaluate information and experimental data from a wide variety of sources, including textbooks, the internet, and primary sources of scientific literature (C1-C5). In Stage 3 students undertake a research project which supports the development of all cognitive skills (C1-C6), and students are supported in this by one-to-one supervision. In seminar discussions students are supported in critically interpreting and discussing some of the latest scientific developments in relation to their subject with experts in the various fields of research and in developing skills of problem-solving in relation to complex material through the application of knowledge and understanding (C1-C6).</p> <p>C6 is further developed during the optional placement year.</p>
<p><b>Assessment Strategy: Intellectual Skills (C)</b></p>
<p>Intellectual skills are assessed via a range of coursework assignments including written exercises, seminar presentations and study group tasks. Unseen examinations further test the students' cognitive skills. The research project has an important role in assessing all of the cognitive skills, including the ability to use scientific literature in a critical manner (C1), the ability to evaluate, interpret and explain complex information from a range of sources (C2), assessing the limitations of existing knowledge (C3), integrating several lines of evidence and testing hypotheses (C4), and the skills of independent learning (C5).</p> <p>C6 is assessed by means of a report and oral presentation on the professional placement alongside a supervisor's report and via reflective report in the placement year.</p>
<p><b>Transferable/Key Skills (D)</b></p>
<p>On completing the programme students will have:</p> <ul style="list-style-type: none"> <li>D1. Study skills of reading, noting, recall and essay/report writing.</li> <li>D2. Gained competence in the use of digital skills including e-mail, word processing, spreadsheets, presentation and statistical software, coding, appropriate use of AI and the Internet and on-line library facilities.</li> <li>D3. Developed the ability to work independently.</li> <li>D4. Developed collaborative skills, including team working.</li> <li>D5. Developed the ability to plan, organise and prioritise work activities.</li> <li>D6. Developed skills of written, oral and visual presentation.</li> <li>D7. Demonstrated the ability to develop and work towards targets for personal, academic and career development.</li> <li>D8. Applied their knowledge and skills to solve scientific problems.</li> <li>D9. Demonstrated the ability to reflect, use initiative and creativity, allied to critical thinking and analytical skills to analyse biological questions of interest as well as gained confidence, curiosity and developed resilience as aligned with Newcastle Graduate Framework.</li> </ul> <p>Students who have successfully completed the Professional Placement Year (BMD3030) or Placement Year (NCL3000/BMD3032) will be able to:</p> <ul style="list-style-type: none"> <li>D10. Reflect on and manage own learning and development in the placement.</li> <li>D11. Use existing and new knowledge to enhance personal performance in a placement environment, evaluate the impact and communicate this process.</li> <li>D12. Use graduate skills in a professional manner in a placement environment, evaluate the impact and communicate the personal development that has taken place.</li> </ul>
<p><b>Teaching and Learning Methods: Transferable/Key Skills (D)</b></p>
<p>Skills of reading, noting, recall and document creation (D1) are developed through study skills support sessions, and tasks including directed reading and written assignments on</p>

which formative assessment opportunity is provided. Skills in the use of digital resources (D2) are developed through classes at various stages throughout the course and practised in a wide range of assessments. Skills of independent working (D3) are progressively developed by assignments throughout the programme. Students are initially encouraged to learn through group-based tasks and then through individual assignments culminating in the research project. Planning, organising and prioritising (D5) are developed through study skills support sessions and the project. The skills of written, oral and visual communication are developed in seminars and in the research project (D6). Students are challenged with increasingly complex scientific problems that they will resolve using their knowledge and skills (D8), initiative and creativity (D9).

Interpersonal skills (D4) are developed through study group work, team working exercises, seminars and the research project. The ability to develop and work towards targets for personal, academic and career development is developed through a programme of career management sessions and reflective practice.

Students receive training and develop their study skills throughout the programme (D1). Students are provided with feedback on tasks requiring the use of digital skills (D2). Students are encouraged to reflect on their team-working skills and feedback on these are provided by peer-assessment of group tasks (D7). Skills of planning, organising and prioritising are developed by a progressively more complex series of assignments, culminating in the research project and greatly enhanced by a placement year. Students are encouraged to reflect on these skills and support is available from module leaders and the research project supervisor. Students are enabled to monitor the development of their written, oral and visual presentational skills by feedback from peers and teachers on various assignments. Students are encouraged to discuss their personal goals with their tutors (D7).

The placement year is an ideal vehicle to explore their career goals. Students will reflect on (D10) and discuss with the Placement supervisor and Academic Placement Officer their professional placement year with respect to the knowledge and skills they have developed and the implications for their career-planning and personal development (D11, D12).

#### **Assessment Strategy: Transferable/Key Skills (D)**

Transferable/key skills D1 to D9 are all assessed via assessments e.g., study group tasks, posters, oral presentations, and essays. An assessment schedule including deadlines is set for all modules and students are penalised for late submission of work (D5). The project and professional placement, where relevant, have key roles in assessment of all of these skills including problem solving (D8), report-writing (D1), oral presentation (D5) and digital skills including advanced word processing and the use of PowerPoint (D2). Both the project and placement supervisors are asked to assess students' inter-personal skills (D4) and skills of planning and organisation (D5), as well as the ability to exercise sound judgment and show personal responsibility and initiative in the environment of the research laboratory (D7). Where relevant, placement portfolios and progression forms are used to provide evidence of their ability to work towards targets for personal and professional development (D7).

D3-D12 are further assessed by means of a report and oral presentation at the end of the professional placement year alongside the Placement Supervisor's report.

## **12 Programme Curriculum, Structure and Features**

### **Basic structure of the programme**

#### **BSc (Hons) Biochemistry**

Duration of course: 3 years full time based on 30 weeks attendance per annum.

Number of stages: 3

Total credits: 360

Module credits: range from 20 to 40; with each 20 credits representing 200 hours of student learning time.

Requirements for progression: passing all core modules and gaining appropriate overall number of credits.

### **BSc (Hons) Biochemistry with Professional Placement Year**

Duration of course: 4 years full time based on 30 weeks attendance per annum in years 1, 2 and 4 and with the third year on professional placement (minimum 34 weeks)

Number of stages: 3

Total credits: 480 for programme with placement year

Module credits: range from 20 to 120 with each 20 credits representing 200 hours of student learning time

Requirements for progression: passing all core modules and gaining appropriate overall number of credits.

### **BSc (Hons) Biochemistry with International Study Year**

Duration of course: 4 years full time based on 30 weeks attendance per annum in years 1, 2 and 4 and with the third year on placement (minimum 34 weeks)

Number of stages: 3

Total credits: 480 for programme with international study year

Module credits: range from 20 to 120 with each 20 credits representing 200 hours of student learning time

Requirements for progression: passing all core modules and gaining appropriate overall number of credits.

### **BSc (Hons) Biochemistry with Placement Year**

Duration of course: 4 years full time based on 30 weeks attendance per annum in years 1, 2 and 4 and with the third year on placement (minimum 34 weeks)

Number of stages: 3

Total credits: 480 for programme with placement year

Module credits: range from 20 to 120 with each 20 credits representing 200 hours of student learning time

Requirements for progression: passing all core modules and gaining appropriate overall number of credits.

**Stage 1** provides a multi-disciplinary foundation covering a range of related biosciences, and the analytical techniques used in each of these fields to test and confirm their knowledge base. At this stage students gain an appreciation of each of these areas and at the end of Stage 1 students may opt to transfer onto the Biomedical Sciences programme if they so wish. At Stage 1 students are introduced to those practical skills essential for studying biochemistry and must pass a Practical Skills Audit. The students are also exposed to concepts of ethical reasoning and students also develop a number of generic skills including digital capabilities, coding, information literacy, writing skills, numeracy skills, oral presentation skills, bioinformatics and data handling skills. To allow students to evaluate their understanding and knowledge base of maths, biology and chemistry there are three separate formative tests that students are encouraged to use. Students identify areas needing improvement and are then directed at an early stage to on-line and other forms of support material to ensure they are appropriately prepared to study the content of stage 1 of the degree. The chemistry test in particular will evaluate the student's understanding of basic atomic theory and structure, matter, bonding, thermodynamics, types of chemical reaction and reaction kinetics, acids, bases and buffers, gases, nomenclature and terminology used in chemistry and in particular organic chemistry.

**Stage 2** semester 1 builds on Stage 1 and provides students with a deeper knowledge of Biochemistry focusing on proteins. The course focuses on the technologies that underpin our current understanding and provides students with hands-on experience of a range of molecular techniques. The course also explores how coding, bioinformatics and statistics help make sense of the ever-increasing amount of biological data alongside responsible use of AI.

Cell biology is studied in greater depth, particularly focusing on transcription, membrane transport, cell signalling and immunology with reference to the development and presentation of human disease.

**Stage 2** semester 2 provides greater specialisation into the biochemistry of gene expression and with optional modules in a range of bioscience related topics that investigate the science of human health and disease including protein trafficking and membranes. Further emphasis is also given to developing practical skills in techniques considered important for Biochemistry graduates. At Stage 2 students also enhance their research and presentation skills, data handling, and team working.

**In year 3** students can undertake a professional placement year between Stages 2 and 3, providing experience of working in a life science company, research facility or similar relevant employment and affording the opportunity to acquire additional knowledge and skills in the workplace. The placement must be approved by the Degree Programme Director as appropriate to meet the learning outcomes of the 'with Professional Placement Year' programme. Students who undertake a placement year in a non-science related role can meet the learning outcomes for the 'with Placement Year' award. There is also an option for students to complete an International Study Year between stages 2 and 3.

At **Stage 3** students further develop their research skills through learning research methodology, process and data communication in the Core Module and the research project. They will also engage with two compulsory modules Applied Biochemistry for drug discovery and Biochemistry of Disease whilst choosing a third module to extend their interest from the catalogue of optional modules prior to undertaking a research project supported by a research-active supervisor.

Students have the option to study a supernumerary language module in all years of the programme.

### **Links between learning outcomes, curriculum and structure of the programme**

The modules that comprise this degree programme are shown in the annex. Further detail can be seen in the module outline forms, which also show how the modules contribute to development of skills throughout the programme.

The curriculum is designed to allow systematic progression of students towards the programme's learning outcomes. Knowledge and understanding is progressively developed as students move from a broad overview of their subjects at Stage 1 to a much more specialised and detailed understanding at Stages 2 and 3 with the placement year providing the students who opt for this experience to put this knowledge into context. Practical techniques are also progressively developed throughout the course as students' progress from competence in basic laboratory skills to the use of sophisticated laboratory techniques and equipment. For those who chose it, the professional placement year also provides unique opportunities not available in the university. Cognitive and intellectual skills are also developed throughout the programme from simple problem-solving exercises at Stage 1 to more complex data handling and experimental design and data analysis at Stages 2 and 3, culminating in the research project that requires students to develop a highly critical approach to the scientific literature and to their own independently sourced data/information. Students who have completed the professional placement year will be able to bring their experience and skills to Stage 3. Key skills are also progressively developed, being first introduced to the students (e.g., in formal lectures or seminars) and then practised and assessed in subsequent modules.

Thus, Stage 1 provides a firm grounding in the basic sciences underpinning biochemistry. By the end of this Stage the students will have:

- gained a basic knowledge and understanding of subject areas within Biochemistry (A1) and started to use this knowledge to address simple scientific problems (D8)

- been introduced to basic laboratory skills, safe working practices and recording and interpretation of experimental results (B1-3)
- developed skills of independent learning (C5)
- developed study skills of reading, noting and recall (D1)
- gained competence in the use of digital skills (D2)
- have developed the ability to work independently (D3)

At Stage 2 the course gives a broad overview of subject material considered essential to the subject of Biochemistry and starts to introduce the research basis of the acquired knowledge. By the end of this stage students will have:

- developed further, at the level presented in undergraduate textbooks, knowledge and understanding of the major areas that are the 'core' of biochemistry(A2)
- experienced use of primary literature (B4)
- mastered essential elements of relevant laboratory techniques and safe laboratory practice and developed the ability to write laboratory reports (B1-3)
- started to develop the ability to evaluate critically scientific information (B5) and to appreciate the relationship between research and knowledge gain in the discipline (B6)
- continued the development of transferable (key) skills as outlined in the Newcastle Graduate Framework, including the ability to use digital resources for information retrieval and data handling (D2, B4)
- further developed study skills of reading, noting and recall (D1) have developed the ability to work independently (D3)
- developed the ability to plan, organise and prioritise work activities (D5)
- been introduced to skills of scientific essay writing (D1) and oral and visual communication (D6)
- improved cognitive skills of reasoning, analysis of scientific literature, critical evaluation and the ability to apply their knowledge in problem-solving (C1-4, D8-9)
- developed further skills of independent learning (C5)
- developed inter-personal and team-working skills through collaborative work (D4, D9)

Through the professional placement year, students will:

- have the opportunity to apply, extend and enhance their knowledge (A5) in authentic problem solving (C6)
- appreciate how the biosciences sector use the knowledge and skills of its staff (A4)
- be able to demonstrate competence in a range of generic and placement specific skills (B7)
- produce a placement report (D1)
- further develop their interpersonal and team working skills (D4, D9)

Alternatively, through the placement year, students will have the opportunity to:

- apply and further develop their knowledge beyond science (A8 and A9)
- utilise transferable skills in a non-scientific role (A6 and A7)

At Stage 3, a higher level of specialisation is achieved with students being able to choose between different areas of interest in relation to their taught modules and their research project. By the end of this Stage the students will have:

- extended their knowledge and understanding of Biochemistry up to the current research level and developed an understanding of the experimental basis of this knowledge (A3)
- become fully competent in the use of primary literature and bibliographic databases, and have an improved ability to evaluate critically scientific information (B4-5)
- developed the ability to make oral and visual presentation of scientific data and knowledge (D3)
- developed skills of critical evaluation of scientific information (B3) and have acquired research and analysis skills (B6)

- produced project work that demonstrates a range of skills including subject-specific skills (B1-B6), report-writing (D1), digital skills (D2), independent working (D3), interpersonal skills (D4), planning, organising and prioritising (D5), creative problem solving, critical thinking and analytical skills (D8-9), presentation skills (D6), in-depth knowledge of selected areas (A3), and cognitive skills (C1-4)
- had further opportunities to practise a variety of transferable (key) skills that will be valuable for a range of employment opportunities.

#### **Key features of the programme (including what makes the programme distinctive)**

A major strength of the programme is the close linkage between teaching and research. Most teaching staff are research active, and many are members of the Faculty Research Institutes and teach in areas relating to their expertise. This ensures that the curriculum content is kept up-to-date and the links between scholarship and research are explicit throughout the programme. Furthermore, the continued participation of teaching staff in professional development programmes (e.g., Advance HE, UKPSF) ensures that delivery of teaching is informed by up-to-date practice. The strong research base in the Faculty ensures that the most modern equipment is available to undergraduate students for their practical work. Involvement of teaching staff for the programme on committees of national professional bodies helps to ensure that the programme continues to be informed by external developments.

A distinctive feature of the course is a full-time final year research project which provides an important opportunity for students to develop their practical skills at the highest level. All modules are supported by staff affiliated to the research institutes within the Faculty; this allows students to study in depth areas of particular interest that relate to Newcastle's research strengths. Students can also study their research project at a host overseas partner institution to gain experience of intercultural research.

The programme places a strong emphasis on employability of its graduates, not only via the placement or professional placement year, but also via part time paid employment in one of the research laboratories during their second year of study. This may involve either laboratory work or other areas of interest (e.g., science communication or pedagogical projects). Students are also encouraged to take advantage of the overseas study opportunities offered by the School which include exchanges for the final year research project in a number of international institutions.

The inclusion and recognition of the optional professional year placement gives students a clear distinctive employability advantage with many additional skills and experience gained over the year which will also aid the students with their academic studies. The science-focused professional placement also provides the potential to use industry standard equipment and techniques. The International Study Year provides the opportunity for personal growth through organisation skills, intercultural competencies, language acquisition, studying a diverse range of subjects and adapting to new learning styles.

#### **Programme regulations (link to on-line version)**

[-RC700\\_1309U\\_2627\\_vFinal.pdf](#)

#### **13 Support for Student Learning**

[Generic Info](#)

#### **14 Methods for evaluating and improving the quality and standards of teaching and learning**

[Generic Info](#)

**15 Regulation of assessment**

[Generic Info](#)

In addition, information relating to the programme is provided in:

The University Prospectus: <http://www.ncl.ac.uk/undergraduate/degrees/#subject>

The University Regulations: <http://www.ncl.ac.uk/regulations/>

Please note. This specification provides a concise summary of the main features of the programme and of the learning outcomes that a typical student might reasonably be expected to achieve if she/he takes full advantage of the learning opportunities provided.

## Annex: Mapping of Intended Learning Outcomes onto Curriculum/Modules

**Biochemistry:** C700 / C703/1988U/1304U

	Module title	Credits	Type	Intended Learning outcomes			
				A	B	C	D
<b>Stage 1</b>							
BMD1000	Molecules of Life	20	Core	1,2	1,2,3,4,5,6	1,2,3,4,5	1,2,3,5,6,7,8,9
BMD1001	Infectious Threats	20	Core	1,2	1,2,3,4,5,6	1,2,3,4,5	1,2,3,4,5,6,7,8,9
BMD1002	Core Skills in Biosciences	20	Core	1,2	2,3,4,5,6	1,2,3,4,5	1,2,3,4,5,6,7,8,9
BMD1003	Core Concepts in Biosciences	20	Core	1,2	2,3,4,5,6	1,2,3,4,5	1,2,3,4,5,6,7,8,9
BMD1004	Therapeutic Mechanisms	20	Core	1,2	1,2,3,4,5,6	1,2,3,4,5	1,2,3,5,6,7,8,9
BMD1005	Cells to Systems	20	Core	1,2	1,2,3,4,5,6	1,2,3,4,5	1,2,3,5,6,7,8,9
BMD1100*	Essential Bioscience Skills	-	Core		1,2,3		
*Candidates will be required to undertake and pass a competence-based Skills Audit. The audit is pass/fail and is undertaken during delivered sessions.							
<b>Stage 2 (Students select one 20 credit module)</b>							
BMD2000	Core 1: Skills for Bioscientists: Techniques, Tools, and Applications	20	Core	1,2	1,2,3,4,5,6	1,2,3,4,5	1,2,3,4,5,6,7,8,9
BMD2001	Core 2: Genomics and Gene Expression in Disease	20	Core	1,2	2,3,4,5,6	1,2,3,4,5	1,2,3,5,6,7,8,9
BIC2001	Proteins and Enzymes: Fundamentals for the Biochemist	20	Compulsory	1,2	1,2,3,4,5,6	1,2,3,4,5	1,2,3,5,6,7,8,9
BMD2003	Core 3: Anatomy and Cellular Systems	20	Core	1,2	1,2,3,4,5,6	1,2,3,4,5	1,2,3,5,6,7,8,9
BMD2009	Bioscience Study Overseas Semester	60	Optional	1,2	2,3,4,5,6	1,2,3,4,5	1,2,3,5,6,7,8,9
BIC2000	Biochemistry of Gene Expression	20	Compulsory	1,2	2,3,4,5,6	1,2,3,4,5	1,2,3,5,6,7,8,9
BMD2008	Bioinformatics for Biosciences	20	Optional	1,2	2,3,4,5,6	1,2,3,4,5	1,2,3,5,6,7,8,9
BMD2011	Cell Signalling in Health and Disease	20	Optional	1,2	2,3,4,5,6	1,2,3,4,5	1,2,3,4,5,6,7,8,9
BMD2014	Immunology of Health and Disease	20	Optional	1,2	2,3,4,5,6	1,2,3,4,5	1,2,3,4,5,6,7,8,9

BMD2016	Microbial Genomics and Genome Mining	20	Optional	1,2	2,3,4,5,6	1,2,3,4,5	1,2,3,4,5,6,7,8,9
BMD2020	Nature's Tinkerer: Mechanisms of Evolutionary Change	20	Optional	1,2	2,3,4,5,6	1,2,3,4,5	1,2,3,5,6,7,8,9
BMD2021	Protein Trafficking: Mechanisms and Roles in Disease	20	Optional	1,2	2,3,4,5,6	1,2,3,4,5	1,2,3,5,6,7,8,9
BMD2010	Business Enterprise for Bio-scientists	20	Optional	1,2	2,3,4,5,6	1,2,3,4,5	1,2,3,4,5,6,7,8,9
BMD2022 #	Respiration and Digestion: Global challenges in Health and Disease	20	Optional	1,2	1,2,3,4,5,6	1,2,3,4,5	1,2,3,4,5,6,7,8,9
<b>Optional Placement Year</b>							
<i>BMD3030</i>	<i>Professional Placement Year (4-year programme only)</i>	120	Core	3,4,5	2,3,4,5,6,7	2,3,4,5,6	3,4,5,6,7,8,9,10,11,12
<i>NCL3000</i>	<i>Careers Service Placement Year (4-year degree 'with Placement Year')</i>	120	Core	6,7		4,5,6	3,4,5,6,7,9,10,11,12
<i>BMD3032</i>	<i>International study year (4-year degree 'with International Study Year')</i>	120	Core	6,7		4,5,6	3,4,5,6,7,9,10,11,12
<b>Stage 3 (Students select one 20 credit module)</b>							
BMD3000 Or BMD3004 Or BMD3002	Research Project  Research Project for Stage 3 MSci  Overseas Research Project	40  40  40	Compulsory  Compulsory  Compulsory	1,2  1,2  1,2	1,2,3,4,5,6  1,2,3,4,5,6  1,2,3,4,5,6	1,2,3,4,5  1,2,3,4,5  1,2,3,4,5	1,2,3,4,5,6,7,8,9  1,2,3,4,5,6,7,8,9  1,2,3,4,5,6,7,8,9
BMD3005	Becoming a Bioscientist: Skills for Research and Beyond	20	Core	1,2	2,3,4,5	1,2,3,4,5	1,2,3,4,5,6,7,8,9
BMD3016	Microbiota and Pathogens in Fundamental Research and the Clinic	20	Optional	1,2	2,3,4,5,6	1,2,3,4,5	1,2,3,5,6,7,8,9
BMD3015	In vivo Research	20	Optional	1,2	1,2,3,4,5,6	1,2,3,4,5	1,2,3,4,5,6,7,8,9

BMD3019	Neurodegenerative and Neurological Disorders of the Nervous System	20	Optional	1,2	2,3,4,5,6	1,2,3,4,5	1,2,3,4,5,6,7,8,9
BMD3022	Patterns and Determinants of Disease in Human Populations	20	Optional	1,2	2,3,4,5,6	1,2,3,4,5	1,2,3,5,6,7,8,9
BMD3024	Rare diseases genetic variants to Physiological Function and Therapies	20	Optional	1,2	2,3,4,5,6	1,2,3,4,5	1,2,3,4,5,6,7,8,9
BMD3025 #	The Application of Bioinformatics Techniques to Biomedical Data	20	Optional	1,2	2,3,4,5,6	1,2,3,4,5	1,2,3,4,5,6,7,8,9
BMD3027	Therapeutic Applications of Cell Signalling	20	Optional	1,2	2,3,4,5,6	1,2,3,4,5	1,2,3,5,6,7,8,9
BMD3008	Applied Technologies enabling Biosciences – AI, cross-scale imaging, cytometry and 'omics	20	Optional	1,2	1,2,3,4,5,6	1,2,3,4,5	1,2,3,4,5,6,7,8,9
BMD3012	Evolutionary Genomics in Fundamental Research and the Clinic	20	Optional	1,2	2,3,4,5,6	1,2,3,4,5	1,2,3,5,6,7,8,9
BIC3000	Biochemistry of Disease	20	Compulsory	1,2	2,3,4,5,6	1,2,3,4,5	1,2,3,5,6,7,8,9
BIC3001	Applied Biochemistry for Drug Discovery	20	Compulsory	1,2	2,3,4,5,6	1,2,3,4,5	1,2,3,5,6,7,8,9

# - has pre-recs – see programme regulations