

PROGRAMME SPECIFICATION



| | | |
|----------|---------------------------------|--|
| 1 | Awarding Institution | Newcastle University |
| 2 | Teaching Institution | Newcastle University |
| 3 | Final Award | MSci (Honours) |
| 4 | Programme Title | Biomedical Sciences B900 Biomedical Sciences with Professional Placement Year B944 Biomedical Sciences with International Study Year 1991U* Biomedical Sciences with Placement Year 1309U Biochemistry C701 Biochemistry with Professional Placement Year C704 Biochemistry with International Study Year 1990U* Biochemistry with Placement Year 1307U |
| 5 | UCAS/Programme Code | B900/B944/1991U/1309U/C701/C704/1990U/1307U |
| 6 | Programme Accreditation | Royal Society of Biology (*except for 1990U and 1991U) |
| 7 | QAA Subject Benchmark(s) | Biomedical Science; Bioscience |
| 8 | FHEQ Level | 7 |
| 9 | Date written/revised | May 2026 |

10 Programme Aims

The programme aims to recruit high quality students who are committed to a career in science. The degree will comprise the curriculum followed by current BSc students through years 1-3. The fourth year, which offers a choice of M level modules (40 credits) together with a substantial laboratory project (80 credits) will allow students to acquire higher level knowledge in selected disciplines aligned to the research strengths of the Faculty and to gain additional practical laboratory experience to prepare them for a research-based career. The option to take a professional placement/ placement year/ international study year between stages 2 and 3 will enhance skills development and employability.

The programme aims to ensure that our graduates are equipped at a Masters level with understanding and knowledge which is at, or informed by, the forefront of their subject area. This programme also aims to ensure graduates are equipped with the specific practical and transferable skills that meet the needs of employers (including PhD Supervisors) of bioscientists. Whilst the degree is designed to support students wishing to pursue a research career, the development of both intellectual and transferable skills also ensures that our graduates are well equipped for the non-research job market. The inclusion of vocationally related components and emphasis on career development throughout the programme enhances the employability of our students

The academic aims of the programme are as follows:

- To produce graduates with advanced knowledge and understanding of Biomedical Sciences, aligned with Royal Society of Biology accreditation, the Quality Assurance Agency (QAA) National Qualifications Framework, and the QAA

Benchmark Statements for Biosciences and Biomedical Sciences, except for elements specific to Institute of Biomedical Sciences.

- Enable students to develop advanced research skills up to Masters level, and gain a comprehensive understanding of techniques applicable to their own research.
- To produce graduates who can demonstrate self-direction and originality in tackling and solving problems, with an awareness of sustainability within Biosciences.
- To produce graduates who can deal with complex issues – both systematically and creatively
- To produce graduates capable of seeking and securing employment in a wide-variety of careers, including careers in biomedical and related sciences sectors, research positions, graduate careers in which the emphasis is on non-subject specific skills as well as further studies and recognise enterprising opportunities.

In addition, the optional placement year (BMD3030/NCL3000) will:

- 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.
- Provide a period of experiential learning that will benefit both current academic study and longer-term career plans.
- BMD3032 (international study year) will provide an overseas experiential learning opportunity to develop intercultural competence and self-management skills.

11 Learning Outcomes

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 and Biomedical Sciences.

Knowledge and Understanding (A)

Graduates will be able to:

- A1. Demonstrate core knowledge and understanding of biomedical sciences / biochemistry, including related ethical principles and sustainable practices.
- A2. Exhibit comprehensive knowledge of selected areas of biomedical sciences / biochemistry including current research and the experimental basis of this knowledge.
- A3. Demonstrate advanced knowledge and understanding of the experimental techniques of biomedical sciences / biochemistry up to current masters research level.

Students who have successfully completed a Professional Placement Year (BMD3030) will have (A4-A7) and students who have successfully completed the Placement Year (NCL3000) will have (A6 and A7) and those who have completed BMD3032 (International study year) (A6 to A8):

- A4. Developed a sustained awareness of a Bioscience work environment.
- A5. Applied their knowledge for Biosciences in a professional context.
- A6. Relate their placement-based learning to other areas of personal development, including academic performance.
- A7. Demonstrate an understanding of a placement environment, how it functions and their contribution to it.
- A8. Applied their knowledge of Biosciences in a different academic 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 provide core knowledge and understanding of biomedical sciences / biochemistry, including ethical and sustainable principles (A1). The remaining modules of

the programme aim to develop students' comprehensive knowledge of the breadth and scope of biomedical sciences / biochemistry (A2). In stage 4 modules students develop advanced knowledge and understanding of experimental techniques, especially within the research project (A3). There is a gradual change of emphasis over the four 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 optional modules and stage 4 modules. The individual student research projects in stage 3 and 4 supports 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 stage 3 and 4 research projects 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.

A4 and A5 applicable to the Biomedical Sciences/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. A6 and 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 (BMD3032) as well as gaining a global cultural and learning experience placement year from the latter (A8) (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) (A1), structured short answer questions (SAQ), paper interpretation exercises (A2), essays, problem solving, literature reviewing and data analysis (A3).

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), data analysis, extended essays and timed essays. The stage 3 and 4 research project assessment includes a written project report, presentation and supervisory professionalism mark (A3).

Peer review will often be employed in assessment in group tasks.

A4 to A7 are assessed on the Professional Placement Year (BMD3030) by means of a report, oral presentation or blog post, and supervisor's competence report. A6 and A7 are assessed by means of the reflective log on the Placement Year (NCL3000 and also A8 with 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)

Graduates will be able to:

- B1. Master essential laboratory skills and safe working practices.
- B2. Accurately obtain, record, analyse and interpret data.
- B3. Make sound judgments in the absence of complete data, present data according to scientific conventions, and communicate conclusions clearly to specialist and non-specialist audiences.
- B4. Effectively use primary literature and bibliographic databases.
- B5. Critically evaluate scientific information, including methodologies.
- B6. Using originality in the application of knowledge, conduct independent, in-depth, research in a specific area of the biosciences.
- B7. Effectively use initiative and personal responsibility, decision-making in unpredictable situations, and independent learning ability required for continuing professional development.

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

- B8. 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 critically evaluate 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, 3 and 4.

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 (methodologies, 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 stage 3 and 4 (B3, B5, B6 and B7).

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 critically evaluate 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 and B7).

Training in communication to both specialists and non-specialists is delivered throughout this programme from the core skills modules in stage 1, 2 and 3 through to the project modules in 3 and 4 (B3).

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 (B8).

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 and 4 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 at advanced level in the project report in stage 4 (B7). The ability to critically evaluate scientific information (B5) is assessed by various written assignments and seminar presentations, by the project report in stage 3 and 4, and by unseen examinations.

The ability to work independently in the research active environment (B6 and B7) is primarily assessed by the Stage 3 and 4 project supervisors' assessment of competence and professionalism and the ability to show originality in the application of knowledge.

B8 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)

Graduates will be able to:

- C1. Critically engage with scientific literature, including at the forefront of research, assessing context, quality, and relevance to current biomedical challenges.
- C2. Evaluate and interpret complex data and communicate scientific ideas clearly.
- C3. Critically assess the strengths and limitations of current scientific knowledge, methodologies, experimental designs, and ethical considerations within biomedical sciences.
- C4. Independently integrate evidence to formulate and test hypotheses using logical reasoning.
- C5. Demonstrate self-directed and reflective learning.
- C6. Make informed, evidence-based and sound judgements to solve complex or unpredictable problems in academic and professional bioscience contexts.

Teaching and Learning Methods: Intellectual Skills (C)

Intellectual skills (C1-C5) are progressively developed throughout the programme by practical and seminar work, study group tasks, written work and the research project.

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 Stages 3 and 4 students undertake a substantial research project which supports the development of all cognitive skills (C1-C6). 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).

C6 is further developed during the optional placement year.

Assessment Strategy: Intellectual Skills (C)

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 projects have 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 and C6).

C6 is further assessed on the placement year by means of a report and oral presentation, alongside a supervisor's report and via reflective report.

Transferable/Key Skills (D)

Graduates will be able to:

- D1. Apply effective study skills of reading, noting, and recall.
- D2. Demonstrate digital literacy, including coding, appropriate AI use, and data tools
- D3. Work independently, manage their own learning and personal responsibility.
- D4. Collaborate effectively in teams.
- D5. Plan, organise, and prioritise tasks efficiently.
- D6. Communicate effectively to specialist and non-specialist audiences
- D7. Set and work towards targets for personal, academic and career goals.
- D8. Demonstrate self-direction and originality to solve scientific problems using critical thinking and initiative.
- D9. Reflect on learning, demonstrate resilience, and apply creativity, aligned with Newcastle Graduate Framework.

Students who have successfully completed the Professional Placement Year (BMD3030) or Placement Year (NCL3000/BMD3032) will be able to:

- D10. Reflect on and manage own learning and development in the placement.
- D11. Use existing and new knowledge to enhance personal performance in a placement environment, evaluate the impact and communicate this process.
- D12. Use graduate skills in a professional manner in a placement environment, evaluate the impact and communicate the personal development that has taken place.

Teaching and Learning Methods: Transferable/Key Skills (D)

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 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 projects. Planning, organising and prioritising (D5) are developed through study skills support sessions and the projects. The skills of written, oral and visual communication are developed in seminars and in the research projects (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 projects. 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 projects 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 time to explore 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, authentic assessments, and essay style tasks. 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 presentation slide design (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

MSci Biomedical Sciences

/ MSci Biochemistry

Duration of course: 4 years full time based on 30 weeks attendance per annum.

Number of stages: 4

Total credits: 480

Module credits: range from 20 to 80; with each 20 credits representing 200 hours notional student learning time.

Requirements for progression: passing all core modules and gaining appropriate overall number of credits with specific criteria defined in the programme regulations.

MSci Biomedical Sciences / with Professional Placement Year /

MSci Biochemistry with Professional Placement Year

Duration of course: 5 years full time based on 30 weeks attendance per annum in campus based 'taught' years and with the year on professional placement (minimum 34 weeks) taken between stages 2 and 3.

Number of stages: 4

Total credits: 600 for programme with placement year

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

Requirements for progression: passing all core modules and gaining appropriate overall number of credits with specific criteria defined in the programme regulations.

MSci Biomedical Sciences / with International Study Year /

MSci Biochemistry with Placement Year

Duration of course: 5 years full time based on 30 weeks attendance per annum in campus based 'taught' years and with the year on placement (minimum 34 weeks) taken between stages 2 and 3

Number of stages: 4

Total credits: 600 for programme with placement year

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

Requirements for progression: passing all core modules and gaining appropriate overall number of credits with specific criteria defined in the programme regulations

MSci Biomedical Sciences / with Placement Year

MSci Biochemistry with Placement Year

Duration of course: 5 years full time based on 30 weeks attendance per annum in campus based 'taught' years and with the year on placement (minimum 34 weeks) taken between stages 2 and 3

Number of stages: 4

Total credits: 600 for programme with placement year

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

Requirements for progression: passing all core modules and gaining appropriate overall number of credits with specific criteria defined in the programme regulations

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 between programmes if they so wish. At Stage 1 students are introduced to those practical skills essential for studying biosciences 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 cell and molecular biosciences with correlations to molecular medicine. The course focuses on the technologies that underpin our current understanding in these areas 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. For those studying Biochemistry there will be a focus on protein structure and function.

Stage 2 semester 2 provides greater specialisation with option choices in a range of bioscience related modules that investigate the science of human health and disease. Further emphasis is also given to developing practical skills in techniques considered important for Biomedical Science/Biochemistry graduates. Biochemistry students will study gene expression 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 and process in the Core Module. Students are able to select options that consolidate a theme or equally a diverse range of modules that give a breadth of knowledge that reflect the current research within this field. Biochemistry students 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. In semester 2 all students undertake a 40 credit research project supported by their project supervisor, an expert in their field.

At **Stage 4** two 20 credit modules will be selected from a wide range available at Masters level within the faculty provided by research active staff from across the research institutes. The defining feature of the final year and the MSci degree is a major research project undertaken within a research institute in the Faculty of Medical Sciences. Students will be individually guided in their choices to ensure that the modules that they take are appropriate to their named degree and the projects that they undertake have a core basis in the degree subject area.

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 the biosciences. By the end of this Stage the students will have:

- gained a basic knowledge and understanding of subject areas within Biomedical Sciences/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 Biomedical Sciences/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 biomedical sciences/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 (B8)
- 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 Biomedical Sciences/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), inter-

personal 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.

In **Stage 4** students study two modules of choice from a range of Masters level modules available. They also undertake a substantial (80 credit) research project allowing them to develop to a higher level their subject-related, cognitive and key skills. By the end of this stage students will have:

- Further extended their knowledge and understanding of their chosen subject area up to the current research level, developed an understanding of the experimental basis of this knowledge, and shown originality in the application of knowledge (A3 and A4)
- Developed a sound appreciation of how the boundaries of knowledge, particularly scientific knowledge, are advanced through research (B6 and B7)
- Developed and demonstrated an ability to work independently in a research active environment (B6 and B7)
- Developed an ability to deal with complex problems systematically, creatively and with originality (C6)
- Developed the ability to develop and work towards targets for personal, academic and career development (D7)
- Developed the ability to exercise sound judgement, personal responsibility, and initiative in a complex and unpredictable professional environment (D8)
- Produced project work that demonstrates a range of skills including subject-specific skills (B1-B7), report-writing (D1), digital skills (D2), independent working (D3), inter-personal 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 intellectual skills (C1-C4)

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. The majority of teaching staff are research active, and many are members of the Faculty Research Institutes and teach in areas relating to their particular 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 stage 3 research project which provides an important opportunity for students to develop their practical skills at the highest level which is then followed up by an 80-credit research project in stage 4. All modules are supported by staff affiliated to the research institutes within the Faculty; this allows students to study 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 work-based learning within modules, or part time paid employment in one of the research laboratories during their second year of study, or other internship opportunities. This may involve either laboratory work or other areas of interest (e.g., science communication, data analysis). 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

Biomedical Sciences B900 / B944 / 1991U / 1309U

| | Module title | Credits | Type | Intended Learning outcomes | | | |
|---|---|---------|----------|----------------------------|-------------|-----------|-------------------|
| | | | | A | B | C | D |
| Stage 1 | | | | | | | |
| 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. | | | | | | | |
| Stage 2 | | | | | | | |
| 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 |
| List 1A (sem1)* | | | | | | | |
| BMD2004 | Control of Physiological Systems | 20 | Optional | 1,2 | 1,2,3,4,5,6 | 1,2,3,4,5 | 1,2,3,5,6,7,8,9 |
| BMD2005 | Factors Affecting Pharmacokinetics and Drug Disposition | 20 | Optional | 1,2 | 1,2,3,4,5,6 | 1,2,3,4,5 | 1,2,3,5,6,7,8,9 |
| BMD2007 | Neuroscience: Essentials and Beyond | 20 | Optional | 1,2 | 1,2,3,4,5,6 | 1,2,3,4,5 | 1,2,3,5,6,7,8,9 |
| BMD2006 | Microbial Mechanisms of Human Pathogenesis | 20 | Optional | 1,2 | 2,3,4,5,6 | 1,2,3,4,5 | 1,2,3,4,5,6,7,8,9 |
| BIC2001 | Proteins: Structure, Function and Biochemistry | 20 | Optional | 1,2 | 1,2,3,4,5,6 | 1,2,3,4,5 | 1,2,3,5,6,7,8,9 |

| | | | | | | | |
|-------------------------|--|----|----------|-----|-------------|-----------|-------------------|
| Sem 2 | | | | | | | |
| 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 |
| List 2A * (sem2) | | | | | | | |
| BMD2012 | Chromosome Biology in Development and Disease | 20 | Optional | 1,2 | 2,3,4,5,6 | 1,2,3,4,5 | 1,2,3,5,6,7,8,9 |
| BMD2017 | Bacterial Cell and Molecular Biology | 20 | Optional | 1,2 | 2,3,4,5,6 | 1,2,3,4,5 | 1,2,3,4,5,6,7,8,9 |
| BMD2013 | Human Reproduction and Fertility | 20 | Optional | 1,2 | 2,3,4,5,6 | 1,2,3,4,5 | 1,2,3,4,5,6,7,8,9 |
| BMD2015 | Introduction to Population and Public Health | 20 | Optional | 1,2 | 2,3,4,5,6 | 1,2,3,4,5 | 1,2,3,5,6,7,8,9 |
| BMD2018 | Mitochondrial Biology and Function | 20 | Optional | 1,2 | 1,2,3,4,5,6 | 1,2,3,4,5 | 1,2,3,5,6,7,8,9 |
| BMD2023 # | Sensory, Motor, and Cognitive Neuroscience | 20 | Optional | 1,2 | 2,3,4,5,6 | 1,2,3,4,5 | 1,2,3,5,6,7,8,9 |
| BMD2024 | The Principles of Cancer | 20 | Optional | 1,2 | 2,3,4,5,6 | 1,2,3,4,5 | 1,2,3,4,5,6,7,8,9 |
| BIC2000 | Biochemistry of Gene Expression | 20 | Optional | 1,2 | 2,3,4,5,6 | 1,2,3,4,5 | 1,2,3,5,6,7,8,9 |
| List 2B * (sem2) | | | | | | | |
| 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 | 20 | Optional | 1,2 | 1,2,3,4,5,6 | 1,2,3,4,5 | 1,2,3,4,5,6,7,8,9 |

| | | | | | | | |
|--|---|-----|------------|-------|-------------|-----------|------------------------|
| | Health and Disease. | | | | | | |
| * Students select one 20 credit module | | | | | | | |
| Optional Placement Year | | | | | | | |
| BMD3030 | <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 |
| NCL3000 | <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 |
| BMD3032 | <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 |
| Stage 3 | | | | | | | |
| BMD3000 Or | Research Project | 40 | Compulsory | 1,2 | 1,2,3,4,5,6 | 1,2,3,4,5 | 1,2,3,4,5,6,7,8,9 |
| BMD3004 Or | Research Project for Stage 3 MSci | 40 | Compulsory | 1,2 | 1,2,3,4,5,6 | 1,2,3,4,5 | 1,2,3,4,5,6,7,8,9 |
| BMD3002 | Overseas Research Project | 40 | Compulsory | 1,2 | 1,2,3,4,5,6 | 1,2,3,4,5 | 1,2,3,4,5,6,7,8,9 |
| BMD3005 | Core 4: Becoming a Bioscientist: Skills for Research and Beyond | 20 | Core | 1,2 | 2,3,4,5,6 | 1,2,3,4,5 | 1,2,3,5,6,7,8,9 |
| List 3A (sem1)* | | | | | | | |
| 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 |
| BMD3026 | The Science of Ageing: From Biological Mechanisms to Societal Impact | 20 | Optional | 1,2 | 2,3,4,5,6 | 1,2,3,4,5 | 1,2,3,5,6,7,8,9 |
| BMD3012 | Evolutionary Genomics in Fundamental | 20 | Optional | 1,2 | 2,3,4,5,6 | 1,2,3,4,5 | 1,2,3,5,6,7,8,9 |

| | | | | | | | |
|---------------------------|---|----|----------|-----|-------------|-----------|-------------------|
| | Research and the Clinic | | | | | | |
| 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 Application 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 |
| List B 3B (sem1)* | | | | | | | |
| BMD3029 | Biomedical Engineering & Biotechnology | 20 | Optional | 1,2 | 2,3,4,5,6 | 1,2,3,4,5 | 1,2,3,4,5,6,7,8,9 |
| BMD3009 | Cancer Biology and Therapy | 20 | Optional | 1,2 | 2,3,4,5,6 | 1,2,3,4,5 | 1,2,3,5,6,7,8,9 |
| BMD3011 | Clinical Movement, Balance and Mobility Analysis | 20 | Optional | 1,2 | 1,2,3,4,5,6 | 1,2,3,4,5 | 1,2,3,5,6,7,8,9 |
| BMD3013 | Bioethics in the Biosciences | 20 | Optional | 1,2 | 4,5,6 | 1,2,3,4,5 | 1,2,3,5,6,7,8,9 |
| BMD3007 # | Antimicrobials – Mode of action, Discovery, and Resistance | 20 | Optional | 1,2 | 1,2,3,4,5,6 | 1,2,3,4,5 | 1,2,3,4,5,6,7,8,9 |
| BMD3018 | Molecular Oncology and Cancer Therapeutics | 20 | Optional | 1,2 | 2,3,4,5,6 | 1,2,3,4,5 | 1,2,3,4,5,6,7,8,9 |
| BMD3010 | Cardiovascular Development 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 |
| BMD3031 | Molecular Pathology | 20 | Optional | 1,2 | 2,3,4,5,6 | 1,2,3,4,5 | 1,2,3,4,5,6,7,8,9 |
| BIC3000 | Biochemistry of Disease | 20 | Optional | 1,2 | 2,3,4,5,6 | 1,2,3,4,5 | 1,2,3,5,6,7,8,9 |
| List C 3C (sem1) * | | | | | | | |
| BMD3006 # | Advanced Research Topics in Neuroscience | 20 | Optional | 1,2 | 2,3,4,5,6 | 1,2,3,4,5 | 1,2,3,5,6,7,8,9 |
| BMD3014 | Human Disease Genetics | 20 | Optional | 1,2 | 2,3,4,5,6 | 1,2,3,4,5 | 1,2,3,5,6,7,8,9 |
| BMD3022 | Patterns and Determinants of | 20 | Optional | 1,2 | 2,3,4,5,6 | 1,2,3,4,5 | 1,2,3,5,6,7,8,9 |

| | | | | | | | |
|---|--|----|------------|-------|-------------|-------------|-------------------|
| | Disease in Human Populations | | | | | | |
| BMD3017 | Mitochondrial Dysfunction: A Driver of Rare and Common Disease | 20 | Optional | 1,2 | 2,3,4,5,6 | 1,2,3,4,5 | 1,2,3,4,5,6,7,8,9 |
| BMD3021 | Omics and AI for Emerging and Future Biomedicine | 20 | Optional | 1,2 | 2,3,4,5,6 | 1,2,3,4,5 | 1,2,3,5,6,7,8,9 |
| BMD3028 | Translational Bioscience Research: From Bench to Bedside to Improve Human Health | 20 | Optional | 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 | Optional | 1,2 | 2,3,4,5,6 | 1,2,3,4,5 | 1,2,3,5,6,7,8,9 |
| BMD3023 | Precision Medicine, Genomics and Informatics | 20 | Optional | 1,2 | 2,3,4,5,6 | 1,2,3,4,5 | 1,2,3,5,6,7,8,9 |
| Stage 4 | | | | | | | |
| BMD4099 | MSci Research Project | 80 | Compulsory | 1,2,3 | 1,2,3,4,5,6 | 1,2,3,4,5,6 | 1,2,3,4,5,6,7,8,9 |
| Taught modules to the value of 40 credits from a range of M level modules available – see list below: | | | | 2 | 4,5,6 | 1,2,3,4,5 | 1,2,3,5,6,7,8,9 |

Biochemistry: C701 / C704 / 1990U / 1307U

| | | | | Intended Learning outcomes | | | |
|---|-------------------------------|----------------|-------------|-----------------------------------|-------------|-----------|-------------------|
| | Module title | Credits | Type | A | B | C | D |
| Stage 1 | | | | | | | |
| 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. | | | | | | | |
| Stage 2 (Students select one 20 credit module) | | | | | | | |
| BMD2000 | Core 1: Molecular Bioscience: | 20 | Core | 1,2 | 1,2,3,4,5,6 | 1,2,3,4,5 | 1,2,3,4,5,6,7,8,9 |

| | | | | | | | |
|--------------------------------|---|-----|------------|-------|-------------|-----------|------------------------|
| | Techniques, Tools and Applications | | | | | | |
| 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 |
| Optional Placement Year | | | | | | | |
| <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 |

| Stage 3 (Students select one 20 credit module) | | | | | | | |
|---|---|----|------------|-----|-----------------|-----------|-----------------------|
| BMD3000 Or | Research Project | 40 | Compulsory | 1,2 | 1,2,3,4 ,5,6 | 1,2,3,4,5 | 1,2,3,4,5 ,6,7,8,9 |
| BMD3004 Or | Research Project for Stage 3 MSci | 40 | Compulsory | 1,2 | 1,2,3,4 ,5,6 | 1,2,3,4,5 | 1,2,3,4,5 ,6,7,8,9 |
| BMD3002 | Overseas Research Project | 40 | Compulsory | 1,2 | 1,2,3,4 ,5,6 | 1,2,3,4,5 | 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 |
| 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 |
| Stage 4 | | | | | | | |

| | | | | | | | |
|--|-----------------------|----|------------|-------|---------------|-------------|-------------------|
| BMD4099 | MSci Research Project | 80 | Compulsory | 1,2,3 | 1,2,3,4,5,6,7 | 1,2,3,4,5,6 | 1,2,3,4,5,6,7,8,9 |
| Taught modules to the value of 40 credits from a range of M level modules available – see list below *list is subject to change: | | | | 1,2,3 | 2,3,4,5,6,7 | 1,2,3,4,5,6 | 1,2,3,5,6,7,8,9 |

Taught M level modules

Taught modules to the value of 40 credits from a range of M level modules available – see list below:

| Code | Descriptive title | Total Credits | Credits Sem 1 | Credits Sem 2 | Level | Type |
|-----------|---|---------------|---------------|---------------|-------|----------|
| MMB8003 | The Biological Study of Behaviour | 20 | 20 | | 7 | Optional |
| MMB8004 | Ageing & Health | | | | 7 | Optional |
| MMB8005 | Experimental Medicine & Therapeutics | 20 | 20 | | 7 | Optional |
| MMB8006 | Drug Discovery & Development | 20 | 20 | | 7 | Optional |
| MMB8007 | Cancer Studies | 20 | 20 | | 7 | Optional |
| MMB8008 | Chromosome Biology and Cell Cycle Control in Health and Disease | 20 | 20 | | 7 | Optional |
| MMB8009 | Clinical Epidemiology | 20 | 20 | | 7 | Optional |
| MMB8010 | The Biological Basis of Psychiatric Illness & its Treatment | 20 | 20 | | 7 | Optional |
| MMB8015 | Applied Immunobiology of Human Disease | 20 | 20 | | 7 | Optional |
| MMB8016 | Molecular Microbiology | 20 | 20 | | 7 | Optional |
| MMB8019 | Sensory and Cognitive System Neuroscience | 20 | 20 | | 7 | Optional |
| MMB8020 | Scientific Basis of Neurological Disorders | 20 | 20 | | 7 | Optional |
| MMB8022 | Regenerative Medicine & Stem Cells | 20 | 20 | | 7 | Optional |
| MMB8025 | Transplantation Sciences | 20 | 20 | | 7 | Optional |
| MMB8030 | Genetic Medicine | 20 | 20 | | 7 | Optional |
| MMB8037 | Cardiovascular Science in Health and Disease | 20 | 20 | | 7 | Optional |
| MMB8038 * | Bioscience Research Development and Enterprise | 20 | 20 | | 7 | Optional |
| MMB8044 | Exercise in Health and Disease | 20 | 20 | | 7 | Optional |
| MMB8046 | Drug Delivery and Nanomedicine | 20 | 20 | | 7 | Optional |
| MMB8048 | Human Health and the Impact of Microbial Genomics | 20 | 20 | | 7 | Optional |
| MMB8050 | Therapeutic Applications of Cell Signalling Pathways | 20 | 20 | | 7 | Optional |
| MMB8052 | Bioinformatics for Biomedical Scientists | 20 | 20 | | 7 | Optional |
| MMB8058 | Mechanisms in Genetic Disease: from Genotype to Phenotype | 20 | 20 | | 7 | Optional |
| MMB8059 | Metabolism in Health and Disease | 20 | 20 | | 7 | Optional |

*suspended for 2026/27

- has pre-recs – see programme regulations

