PROGRAMME SPECIFICATION	

1	**Awarding Institution**	Newcastle University
2	**Teaching Institution**	Newcastle University
3	**Final Award**	BSc (Honours)
4	**Programme Title**	Biomedical Genetics Biomedical Genetics with Professional Placement Year Biomedical Genetics with Placement Year
5	**UCAS/Programme Code**	B901 / B913 / 1302U
6	**Programme Accreditation**	Royal Society of Biology
7	**QAA Subject Benchmark(s)**	Bioscience
8	**FHEQ Level**	6
9	**Date written/revised**	July 2022

10 Programme Aims

The academic aims of the programme are as follows:

- To produce graduates who have a sound knowledge and understanding of Biomedical Genetics.
- To produce graduates who have a core knowledge and understanding in the cognate subject areas of physiology, biochemistry, immunology, microbiology and pharmacology.
- To develop students' intellectual and general transferable (key) skills including the ability to communicate effectively, to use digital and library resources appropriately, to prioritise work and to meet deadlines, to work alone and with others, to adopt a creative approach, use initiative and solve problems, to use critical and analytical skills to analyse biological questions of interest, propose solutions and to critically assess alternatives.
- To produce graduates who have well developed practical skills in relation to the biosciences, have an awareness of good practice in laboratory work and health and safety, and are able to apply quantitative and qualitative analysis to biological investigations and presentational skills including data analysis and statistics.
- To produce honours graduates who are capable of carrying out independent research.
- To produce graduates who have an understanding of ethical reasoning and the ethical issues associated with current biomedical research.
- To provide a flexible programme which leads to a qualification which meets the criteria for an Honours degree laid down in the QAA's National Qualifications Framework and which fully meets the Quality Assurance Agency Benchmarking Statement in Biosciences.
- To produce graduates capable of working in a wide variety of careers, including 1) careers in physiology and related sciences in research, development, and education; 2) graduate careers in which there is greater emphasis on non-subject specific skills; 3) further advanced study.

In addition, the optional placement year will:

- Provide students with the experience of seeking and securing a position with an employer.
- Facilitate independent self-management and proactive interaction in a workplace setting.

- Provide a period of practical work experience that will benefit current academic study and longer-term career plans.
- Enable students to ethically apply their knowledge and skills in the workplace, reflect upon their development and effectively evidence and articulate their learning and relevant future settings.

Aims in relation to the needs of stakeholders:
The programme aims to ensure that our graduates are equipped with a current understanding and knowledge of their subject area and those specific practical skills that meet the needs of employers of bioscientists. The emphasis on the development of both intellectual and transferable skills also ensures that our graduates are also well equipped for the broader non-specialist graduate job market. The inclusion of vocationally related components and emphasis on career development throughout the programme ensures the employability of our students. Successful completion of the year-long placement and the further enhanced employability this brings is immediately recognisable in the name of the degree.

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

On completing the programme students will have:

A1. Gained a core knowledge and understanding of Biomedical Genetics and a variety of related disciplines.
A2. Gained a knowledge of the scope of the subject area.
A3. Gained an in-depth knowledge of selected areas of biomedical sciences up to current research level and developed an understanding of the experimental basis of this knowledge.

Students who have successfully completed a Professional Placement Year (BMS3030) will have:
A4. Developed an awareness of the context of a life science work environment including strategic imperatives and constraints.
A5. Applied their knowledge for life sciences in a professional context.

Students who have successfully completed the Placement Year (NCL3000/CMB3005) should be able to:
A6. Apply personal and professional development strategies to prioritise, plan, and manage their own skills, development and learning.
A7. Relate their placement-based learning to other areas of personal development, including academic performance.
A8. Demonstrate an understanding of a work environment, how it functions and their contribution to it.
A9. Relate their work-based learning to other areas of personal development, including academic performance.

Teaching and Learning Methods

The teaching and learning strategy is designed to encourage a progressive acquisition of knowledge and understanding. The first three semesters of the programme are concerned with providing a core knowledge and understanding of biomedical genetics and a variety of related disciplines. The later parts of the programme aim to develop students' knowledge of the breadth and scope of biomedical genetics and an in-depth knowledge of selected areas of their disciplines and of the experimental basis of this knowledge up to the current research level (A2, A3). There is a gradual change of emphasis over the three taught years from strongly supported teaching, such as lectures which provide the core themes, the scope of the knowledge and understanding required, and explanation of concepts to a greater use of

study groups and more independent self-directed learning from the scientific literature.

The importance of a solid foundation of maths, biology and chemistry knowledge to successful studies is emphasised by the use of formative tests in each of these subject areas during the first few weeks of stage 1. Students use the tests to identify key areas that need support and are directed to remedial on-line and other forms of support material.

Knowledge and understanding are further promoted by seminars and coursework (A1, A2, A3), 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). A3 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 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. Regular MCQ tests and feedback on laboratory reports and essays 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.

A4 and A5 applicable to the Biomedical Genetics 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-A9 are learning outcomes that are met by successfully completing the degree-focused placement year (BMS3030) or the more generic placement (NCL3000/CMB3005).

Assessment Strategy

Knowledge and understanding are primarily assessed via unseen written examinations. Understanding and the ability to apply knowledge are further assessed by coursework. The weighting of examination and coursework varies as appropriate to the module and most 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 Extended Matching Item (EMI) and multiple-choice questions (MCQ), structured short answer questions (SAQ), essays, problem solving, literature and data analysis.

The coursework element can include practical write ups/laboratory reports, study group tasks, oral presentations, posters, in course tests (normally MCQ or EMI), extended essays and timed essays.

Peer review may be employed in the assessment of study group tasks and presentations.

A4 to A5 are assessed by means of a report and oral presentation on the Professional Placement Year (BMS3030).
A6 to A9 are assessed by means of the report on the Placement Year (NCL3000/CMB3005).
These components must be passed for the degree ‘with Placement Year’ or ‘with Professional Placement Year’ to be awarded.

Practical Skills

On completing the programme students should have:

B1. Mastered essentials of basic 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 from experiments.
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 evaluate critically scientific information.
B6. Developed the ability to undertake independent in-depth research in Biomedical Genetics.

Students who have successfully completed a professional placement year will also have:
B7. Further practised and enhanced some or all of the above skills during a 1-year professional placement.

Teaching and Learning Methods

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 the Practical Skills modules at Stage 2.

Students are provided in their first and second year with training in the use of bibliographic databases including PubMed and Medline and referencing using 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).

Attendance at laboratory practical classes is compulsory and 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

At stage 1, students will be required to demonstrate a basic level of practical skills competence via a Practical Skills Test (B1). Practical reports require students to demonstrate the skills associated with experimental work (B1-B3), and these are further assessed at advanced level by the 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 examination.

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

On completing the programme students should 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 several lines of evidence to formulate key hypotheses, to test hypotheses using logical and consistent quantitative and qualitative arguments, and to identify key data in these processes in order to solve scientific problems.
C5. Developed skills of independent learning.

Students who have successfully completed a professional placement year will have:
C6. An ability to solve problems in the work environment.

Teaching and Learning Methods

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 Stage 3 students undertake a research project which supports the development of all of the cognitive skills (C1-C5), 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-C5).

C6 is supported by the Placement Supervisor and monitored by the Academic Placement Officer during the Professional Placement.

Assessment Strategy

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).

C6 is assessed by means of a report and oral presentation on the professional placement alongside a supervisor's report.

Transferable/Key Skills

On completing the programme students will have:

D1. Study skills of reading, noting, recall and essay/report writing.
D2. Gained competence in the use of digital skills including e-mail, word processing, spreadsheets, presentation and statistical software, use of the Internet and on-line library facilities.
D3. Developed the ability to work independently.
D4. Developed interpersonal skills, including team-working.
D5. Developed the ability to plan, organise and prioritise work activities.
D6. Developed skills of written, oral and visual presentation.

D7. Demonstrated the ability to develop and work towards targets for personal, academic and career development.
D8. Applied their knowledge and skills to solve scientific problems.
D9. Demonstrated the ability to use initiative and creativity, allied to critical thinking and analytical skills, to analyse biological questions of interest.

Students who have successfully completed the Professional Placement Year (BMS3030) or Placement Year (NCL3000/CMB3005) 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

Skills of reading, noting, recall and essay/report writing (D1) are developed through study skills support sessions, and tasks including directed reading and essays on which formative assessment 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 coursework. 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 use of NU Reflect.

Students are encouraged to explore with their personal tutor the development of their study skills (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 of these skills and individual support is available from personal tutors 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 and record these meetings on the NU Reflect system (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 D1 to D9 are all assessed via coursework 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). A student's NU Reflect record and, where relevant, 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) Biomedical Genetics
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 10 to 40 with each 10 credits representing 100 hours of student learning time.
Requirements for progression: passing all core modules and gaining appropriate overall number of credits

BSc (Hons) Biomedical Genetics 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 10 to 120 with each 10 credits representing 100 hours of student learning time.
Requirements for progression: passing all core modules and gaining appropriate overall number of credits

BSc (Hons) Biomedical Genetics 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 professional placement (minimum 34 weeks)
Number of stages: 3
Total credits: 480 for programme with placement year
Module credits: range from 10 to 120 with each 10 credits representing 100 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, including biochemistry, cell biology, genetics, immunology, microbiology, physiology, and pharmacology and the analytical techniques used in each of these fields to test and confirm our 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 to another Bioscience programme if they so wish. At Stage 1 students are introduced to those practical skills essential for studying biomedical sciences and must pass a Practical Skills Test to evidence these skills. The students are also exposed to concepts of ethical reasoning and students also develop a number of generic skills including information literacy, writing skills, numeracy skills, oral presentation skills 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 or 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 bioinformatics and statistics help make sense of the ever-increasing amount of biological data.

A Biochemistry and Biomedical Genetics specific module covers key aspects of cell biology, including the cell cycle and cell signalling pathways including the use of phosphorylation, acetylation and methylation to chemically modify biomolecules and influence their function, the impact that reactive oxygen species have on the structure and function of key biomolecules.

Stage 2 semester 2 provides greater specialisation in Biomedical Genetics.
Further emphasis is given to developing practical skills in techniques considered important for Biomedical Genetics graduates. At Stage 2 students also enhance their research and presentation skills, data handling, and team-working.

In year 3 students have the opportunity to 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 are able to meet the learning outcomes for the 'with Placement Year' award.

At **Stage 3** students further develop their research skills as they undertake a research project supported by a research-active supervisor. They also study advanced topics in Biomedical Genetics that reflect the current research of this field.

Students also elect an optional vocational module aligned to their career, future study, or development aspirations.

Students also have the option to study a supernumerary language module in their second and third year.

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 biomedical genetics. By the end of this Stage the students will have:

- gained a basic knowledge and understanding of Biomedical Genetics and a variety of related disciplines (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 genetics 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 their discipline (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, 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. By the end of this Stage the students will have:

- extended their knowledge and understanding of Biomedical Genetics 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.

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 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.

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). Students are also encouraged to take advantage of the international exchange opportunities offered by the School which include exchanges for the final year research project in a number of international institutions. Optional modules at stage 3 also allow students to specialise in a number of subject-related vocational topics such as business, communication, and ethics.

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.

Programme regulations (link to on-line version)

-RC700_1300U_vFinal.pdf

13 Support for Student Learning

https://www.ncl.ac.uk/ltds/assets/documents/qsh_progspec_generic_info.pdf

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

https://www.ncl.ac.uk/ltds/assets/documents/qsh_progspec_generic_info.pdf

15 Regulation of assessment

https://www.ncl.ac.uk/ltds/assets/documents/qsh_progspec_generic_info.pdf

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/docs

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.