|  | **PROGRAMME SPECIFICATION** | Newcastle University |
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| 1 | **Awarding Institution** | Newcastle University |
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| 2 | **Teaching Institution** | Newcastle University |
| 3 | **Final Award** | Master of Research (MRes) |
| 4 | **Programme Title** | Master of Research |
| 5 | **Programme Code** | 4807F MRes Medical & Molecular Biosciences<br>4813F MRes Immunobiology<br>4814F MRes Ageing & Health<br>4816F MRes Cancer<br>4817F MRes Regenerative Medicine & Stems Cells<br>4818F MRes Neuroscience<br>4819F MRes Biotechnology & Business Enterprise<br>4822F MRes Translational Medicine & Therapeutics<br>4829F MRes Transplantation<br>4826F MRes Epidemiology<br>4825F MRes Animal Behaviour<br>4828F MRes Molecular Microbiology<br>4827F MRes Medical Genetics<br>4832F MRes Evolution and Human Behaviour<br>4834F MRes Mitochondrial Biology and Medicine<br>4835F MRes Diabetes (open only to internal intercalators)<br>4837F MRes Cardiovascular Science in Health and Disease<br>4840F MRes Global Health (open only to internal intercalators)<br>4862F MRes Molecular Cell Biology in Health and Disease<br>4863F MRes Clinical Exercise Physiology (open only to internal intercalators)<br>4869F MRes Drug Delivery and Nanomedicine<br>4872F MRes Oral and Dental Sciences (open only to internal intercalators and intercalating Dental students from Universitas Indonesia)<br>4873F MRes Animal Welfare<br>4882F MRes Human Nutrition<br>4874F MRes Biomedical Informatics |
| 6 | **Programme Accreditation** | N/A |
| 7 | **QAA Subject Benchmark(s)** | N/A |
| 8 | **FHEQ Level** | 7 |
| 9 | **Last updated** | March 2025 |

| 10 | **Programme Aims** |
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This programme has been designed to provide students with opportunities to develop a scholarly approach to a chosen area of research in biosciences. The programme aims to help students acquire the necessary expertise for effective day-to-day management and reporting of research activities in the context of their own roles, responsibilities and interests.

i)  to enable students to gain an advanced knowledge and understanding of self-selected areas of biosciences.

ii)  to enable students to undertake a general training in an area of research in a leading research laboratory either within the University or in local industry.

iii) to encourage the students to develop a range of professional and key skills which will enable them to engage in teaching and/or research at an advanced level in higher education or in a senior professional capacity in other fields of employment.

## 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.

### Knowledge and Understanding

On completing the programme students should:

A1 demonstrate an advanced knowledge in self-selected areas of special interest or professional relevance

A2 demonstrate an appropriate knowledge of the principles of safe working practice that under-pin their chosen area of study

A3 demonstrate an appropriate knowledge of the ethical principles that under-pin their chosen area of study

### Teaching and Learning Methods

Students undertaking the MRes select three subject knowledge modules from a wide range of options for study. In addition, all students study a compulsory module in Research Skills and Principles for the Biosciences. Additional training in critical appraisal, presentation skills and library and IT skills is offered to all students. Subject knowledge module selection allows students a wide-choice, subject to module viability, timetabling and individual programme- specific requirements (see below) and is made in consultation with supervisors and the Degree Programme Director or nominees, and subject to confirmation by the Degree Programme Director. Students select areas to study that are within their own areas of interest and that are key to developing a better understanding of their project. A1 is addressed through a mixture of lectures, small group discussion and classroom exercises, augmented by independent study, directed by the provision of reading lists, resource materials and by individual tutorial support, with feedback on in-course assignments. A2 is addressed in the research project and A3 in the compulsory module in research skills and principles for the biosciences.

### Assessment Strategy

Knowledge and understanding are assessed through a range of methods including in-course essays, MCQ tests, student presentations, data interpretation tests, critical appraisal of published works and conventional unseen examinations. Formative feedback is given for all in-course assessment. A2 is assessed by the project supervisor both on a day-to-day basis and through regular interaction with research staff.  Guidance is provided at all times and the students understanding is assessed summatively as part of the students' overall project assessment. A3 is assessed by an examination involving identification of ethical issues in a case scenario.

### Intellectual Skills

On completing the programme students should be able to:

B1 source and evaluate current research evidence in biosciences

B2 formulate arguments and engage in academic debate about current research and research practice in biosciences

B3 critically appraise and contribute to the body of knowledge about current research in biosciences

B4 discuss ethical issues in biosciences research and the need for ethical approval in research

### Teaching and Learning Methods

All of these skills are developed through the mixture of lectures, small group discussion and classroom exercises in semester 1 above and are further developed during the research project through active participation as a member of the research group where there are additional (less formal) activities including: journal clubs, regular research seminars, group meetings etc.

Throughout the programme much emphasis is placed on independent study and guided reading. In-course work is assessed, and formative feedback is given.

### Assessment Strategy

Intellectual skills are assessed in two parts. First: along with knowledge and understanding where a range of methods are employed depending on the modules selected including: in- course essays; MCQ tests; student presentations; data interpretation tests; critical appraisal of published works and conventional unseen examinations. Second: there is further substantial assessment of the research project through a submitted dissertation and an oral presentation.

### Practical Skills

On completing the programme students should be able to:
C1 identify practical and methodologically robust design solutions to selected research questions in medical and molecular biosciences
C2 select and apply relevant statistical techniques in an appropriate research setting
C3 identify key safety issues and procedures related their own research project

### Teaching and Learning Methods

Practical skills C1, C2 and C3 are achieved largely during the research project. Work on the project leads to the practise and development of these skills. Project learning is informed by independent guided reading necessary for the production of a dissertation and oral presentation. Students receive tutorial guidance from their supervisors and feedback where relevant.

### Assessment Strategy

These skills are assessed though an oral presentation and both a poster and a 7500 word dissertation which are assessed by an external examiner and an internal examiner.

### Transferable/Key Skills

On completing the programme students should be able to:
D1 communicate effectively orally and in writing
D2 use library and other information sources skilfully and appropriately
D3 plan, organise and prioritise work activities in order to meet deadlines
D4 work independently

### Teaching and Learning Methods

These skills are developed through the requirement to carry out and produce written assignments for study modules and the research project.  Tutorial guidance with the support of liaison librarians aims to enhance these skills. The course is deliberately designed in a way that requires students to address D1 to D4 throughout its duration.

### Assessment Strategy

These skills are formatively assessed through the written assignments and dissertation. D2 and D4 are not summatively assessed independently, although they are indirectly assessed through the successful production of written assignments and the dissertation.

### 12    Programme Curriculum, Structure and Features
### Basic structure of the programme

This broad-based full-time research programme has a modular structure. Level 7 (Masters) academic credits are accrued for each module completed successfully. Students undertake 180 credits in total: 110 credits are assigned to the research project; 10 credits are assigned to a compulsory module in Research Skills and Principles for the Biosciences, and 60 credits of subject knowledge modules.  In addition, critical appraisal, presentation and library and IT skills training is offered to all students.

**Research Project:** The research project is the largest single component of the degree programme at 110 credits. Projects are selected by students with help and guidance as required. Projects run for 24 weeks and include a week devoted to project preparation; a two-week allowance for a break at Easter and a three-week period set aside for writing up.

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

The key features of this programme are the diversity of choice offered to students and the research-focused approach to learning.

The programme provides a wide choice of select areas of study to match students' individual needs. Students choose three from a wide choice of specialist, research-informed subject knowledge modules. For some programmes this selection must include one or more specific subject specialist modules.

Research projects are self-selected by the students and map to areas of research excellence within the Faculty of Medical Sciences, University and other providers including industry and NHS. Thus, projects offered on this course form part of on-going research programmes and students have an opportunity to experience cutting-edge research identified in their chosen area.

It may be possible to select alternative level 7 (Masters) modules offered in the University at the discretion of the Degree Programme Director.

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

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**13    Support for Student Learning**

General Information

The Student Services portal provides links to key services and other information and is available at: *https://my.ncl.ac.uk/students/*

All students are registered in the School of Biomedical, Nutritional and Sport Sciences School which has an excellent infrastructure to support postgraduate students and their learning.

All students attend a course introduction where they are issued with the degree programme handbook detailing the course curriculum, degree regulations, assessment methods and sources of help and support. During the first week of the programme students are introduced to their module options, the Walton Library, a computer cluster and may attend an optional session on careers. Further sessions on academic skills and integrity are also provided during Induction week, and an International Student Information Seminar is provided for International Students.

Further information on Support for Student Learning can be found in the Degree Programme Handbook.

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

General Information

Information on evaluating and improving quality and standards of teaching and learning can be found in the Degree Programme Handbook.

| 15 | Regulation of assessment |
|---|---|

General Information

Please refer to the Regulations for Research Masters Degree Programmes, at
https://www.ncl.ac.uk/regulations/docs/

***Role of the External Examiners***
For each individual student, an External Examiner who is a distinguished member of the biosciences community is appointed by the Head of School and Dean of Postgraduate Research upon nomination of the Degree Programme Director. The External Examiner is expected to evaluate and mark the student's project dissertation and poster and provide a detailed (brief) written report to the University. An External Examiner is normally asked to consider up to 10 projects.

In addition two Overarching External Examiners, who are also distinguished members of the biosciences community, are appointed by the University after recommendation from the Head of School and Graduate School PGR Committee to:

  i. confirm whether the standards of the University's awards meet or exceed the academic standards specified in external reference points such as the Framework for Higher Education Qualifications, the UK Quality Code, subject benchmark statements, and, where appropriate, the requirements of professional, statutory and regulatory bodies;
 ii. confirm whether the academic standards of the University's awards are consistent with those of similar programmes in other UK higher education institutions;
iii. report on whether the University's processes for assessment measure student achievement rigorously and fairly and are conducted in line with University policies and regulations;
 iv. identify, where appropriate, examples of exemplary practice and innovation in learning, teaching and assessment;
  v. comment on opportunities to enhance the quality of the learning experience provided to students.

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

The University Prospectus:  http://www.ncl.ac.uk/postgraduate/courses/

Degree Programme and University Regulations: University Regulations

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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.

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**Mapping of Intended Learning Outcomes onto Curriculum/Modules**

| Intended Learning Outcome | Module codes (Compulsory / Core in Bold) |
|---|---|
| A1 | MMB8003 - MMB8058, **MMB8101,** MEC8051, MEC8059 |
| A2 | **MMB8098,** MMB8056 |
| A3 | Primarily in **MMB8101**; but also, specifically in MMB8003, MMB8030, MMB8034, MMB8035, MMB8044, MMB8045, MMB8047, MMB8054, MMB8055, MMB8056 |
| B1 | MMB8003-MMB8058, (excluding MMB8038 and MMB8047), **MMB8098; MMB8101;** MEC8051, MEC8059 |
| B2 | MMB8003 – MMB8058, **MMB8098; MMB8101.** MEC8051, MEC8059 |
| B3 | MMB8003 – MMB8058, **MMB8098, MMB8101.** MEC8051 |
| B4 | Primarily in **MMB8101**; but also, specifically in MMB8003, MMB8030, MMB8034, MMB8035, MMB8042, MMB8044, MMB8045, MMB8047, MMB8054, MMB8055, MMB8056 |
| C1 | MMB8003, MMB8018, MMB8033, MMB8035, MMB8044, MMB8046, MMB8047, MMB8048, MMB8052, MMB8053, **MMB8098,** MEC8051, MMB8054, MMB8056 |
| C2 | **MMB8101,** MMB8054, MMB8056 |
| C3 | **MMB8098** |
| D1 | MMB8003 – MMB8058, **MMB8098, MMB8101.** MEC8051, MEC8059 |
| D2 | MMB8003 – MMB8058, **MMB8098,** MEC8051, MEC8059, **MMB8101** |
| D3 | Primarily **MMB8098**, but also MMB8003 – MMB8058, **MMB8101,** MEC8051, MEC8059 |
| D4 | Primarily **MMB8098**, but also MMB8003 – MMB8058, **MMB8101,** MEC8051, MEC8059 |

| Module | Type | A | B | C | D |
|--------|------|---|---|---|---|
| MMB8003 | Optional | 1; 3 | 1; 2; 3; 4 | | 1; 2; 3; 4 |
| MMB8004 | Optional | 1 | 1; 2; 3 | | 1; 2; 3; 4 |
| MMB8005 | Optional | 1 | 1; 2; 3 | | 1; 2; 3; 4 |
| MMB8006 | Optional | 1 | 1; 2; 3 | | 1; 2; 3; 4 |
| MMB8007 | Optional | 1 | 1; 2; 3 | | 1; 2; 3; 4 |
| MMB8008 | Optional | 1 | 1; 2; 3 | | 1; 2; 3; 4 |
| MMB8009 | Optional | 1 | 1; 2; 3 | | 1; 2; 3; 4 |
| MMB8010 | Optional | 1 | 1; 2; 3 | | 1; 2; 3; 4 |
| MMB8011 | Optional | 1 | 1; 2; 3 | | 1; 2; 3; 4 |
| MMB8015 | Optional | 1 | 1; 2; 3 | | 1; 2; 3; 4 |
| MMB8016 | Optional | 1 | 1; 2; 3 | | 1; 2; 3; 4 |
| MMB8018 | Optional | 1 | 1; 2; 3 | 1; | 1; 2; 3; 4 |
| MMB8019 | Optional | 1 | 1; 2; 3 | | 1; 2; 3; 4 |
| MMB8020 | Optional | 1 | 1; 2; 3 | | 1; 2; 3; 4 |
| MMB8022 | Optional | 1 | 1; 2; 3 | | 1; 2; 3; 4 |
| MMB8025 | Optional | 1 | 1; 2; 3 | | 1; 2; 3; 4 |
| MMB8030 | Optional | 1; 3 | 1; 2; 3; 4 | | 1; 2; 3; 4 |
| MMB8033 | Optional ** | 1 | 1; 2; 3 | 1 | 1; 2; 3; 4 |
| MMB8034 | Optional | 1; 3 | 1; 2; 3; 4 | | 1; 2; 3; 4 |
| MMB8035 | Optional | 1; 3 | 1; 2; 3; 4 | 1 | 1; 2; 3; 4 |
| MMB8037 | Optional | 1 | 1; 2; 3 | | 1; 2; 3; 4 |
| MMB8038 | Optional | 1 | 2 | | 1; 2; 3; 4 |
| MMB8043 | Optional | 1 | 1; 2; 3 | | 1;2; 3; 4 |
| MMB8044 | Optional | 1; 3 | 1; 2; 3 | 1 | 1; 2; 3; 4 |
| MMB8046 | Optional | 1 | 1: 2: 3 | 1 | 1; 2; 3; 4 |
| MMB8047 | Optional | 1; 3 | 2: 3: 4 | 1 | 1; 2; 3; 4 |
| MMB8048 | Optional | 1 | 1; 2; 3 | 1 | 1; 2; 3; 4 |
| MMB8050 | Optional | 1 | 1; 2; 3 | | 1; 2; 3; 4 |
| MMB8051 | Compulsory/ Core* only for 4872F | 1 | 1; 2; 3 | | 1; 2; 3; 4 |
| MMB8052 | Optional | 1 | 1; 2; 3 | 1 | 1; 2; 3; 4 |
| MMB8053 | Optional | 1; 3 | 1; 2; 3 | 1 | 1; 2; 3; 4 |
| MMB8054 | Optional | 1:3 | 1:2:3:4 | 1:2 | 1:2:3:4 |
| MMB8055 | Optional | 1:3 | 1:2:3:4 | | 1:2:3:4 |
| MMB8056 | Optional | 1:2:3 | 1:2:3:4 | 1:2 | 1:2:3:4 |
| MMB8057 | Optional | 1 | | | 1;2; 3; 4 |
| MMB8058 | Optional | 1 | 1; 2; 3 | | 1;2; 3; 4 |
| MEC8051 | Optional | 1 | 1; 2; 3 | 1 | 1; 2; 3; 4 |
| MEC8059 | Optional | 1 | 1; 2 | | 1; 2; 3; 4 |
| **MMB8101** | **Compulsory** | **1; 3** | **1; 2; 3; 4** | **2** | **1; 2; 3; 4** |
| **MMB8098** | **Compulsory/ Core** | **2** | **1; 2; 3** | **1; 3** | **1; 2; 3; 4** |

\* Module MMB8051 is only available to students studying 4872F Oral and Dental Sciences and is compulsory/core for this programme
\*\*Module MMB8033 is only open to intercalating medical students

Candidates studying subject specialist programmes are required to undertake relevant subject knowledge modules and therefore when selecting modules from the list must include those stipulated in the list below.

| MRes Programme | Module |
|----------------|--------|
| 4813F Immunobiology | MMB8015 |

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| 4814F Ageing & Health * | MMB8004 or MMB8011<br>Candidates must pass one of the above modules |
| 4816F Cancer | MMB8007 |
| 4817F Regenerative Medicine & Stem Cells | MMB8022 |
| 4818F Neuroscience * | MMB8010, MMB8019 or MMB8020<br>Candidates must pass one of the above modules |
| 4819F Biotechnology & Business Enterprise | MMB8038 |
| 4822F Translational Medicine & Therapeutics * | MMB8005 and MMB8006<br>Candidates must pass one of the above modules |
| 4826F Epidemiology | MMB8009 |
| 4827F Medical Genetics | MMB8030 and MMB8058<br>Candidates must pass one of the above modules |
| 4828F Molecular Microbiology | MMB8016 and MMB8048<br>Candidates must pass one of the above modules |
| 4829F Transplantation | MMB8025 |
| 4834F Mitochondrial Biology and Medicine | MMB8034 |
| 4835F Diabetes | MMB8035 |
| 4837F Cardiovascular Science in Health and Disease | MMB8037 |
| 4840F Global Health | MMB8057 |
| 4862F Molecular Cell Biology in Health and Disease | MMB8008 and MMB8050<br>Candidates must pass one of the above modules |
| 4863F Clinical Exercise Physiology | MMB8044 |
| 4869F Drug Delivery and Nanomedicine | MMB8046 |
| 4872F Oral and Dental Sciences | MMB8051 |
| 4873F Animal Welfare | MMB8054 |
| 4882F Human Nutrition | MMB8056 |
| 4874F Biomedical Informatics | MMB8052 |

*For MRes programmes with multiple specialist modules, candidates must select the modules specified, however only one module will be deemed as core.