

**PROGRAMME SPECIFICATION  
(Research Postgraduate)**



<b>1</b>	<b>Awarding Institution</b>	Newcastle University
<b>2</b>	<b>Teaching Institution</b>	Newcastle University
<b>3</b>	<b>Final Award</b>	Master of Research
<b>4</b>	<b>Programme Title</b>	MRes in Environmental Geoscience
<b>5</b>	<b>Programme Code</b>	4867F
<b>6</b>	<b>Programme Accreditation</b>	N/A
<b>7</b>	<b>QAA Subject Benchmark(s)</b>	N/A
<b>8</b>	<b>FHEQ Level</b>	7
<b>9</b>	<b>Last updated</b>	April 2024

**10 Programme Aims**

The course aims to provide its students with the advanced skills and knowledge of the tools required to carry out a postgraduate research project in an area of environmental geoscience. They should learn:

1. To produce original research, of publishable quality, in any area of environmental geoscience.
2. To design, and lead, an original research project, from start to finish.
3. To understand, and appropriately apply, advanced methods to address research questions within environmental geoscience.
4. The relevant subject-specific knowledge and practical skills required for their chosen specialism within environmental geoscience.

The programme is designed to:

5. Contribute to the University's objectives by providing high quality research training to an increasing number of postgraduates and enhancing their key skills and employability.
6. Produce graduates who can proceed to careers in research in universities, the public sector, the voluntary sector or the private sector.
7. Satisfy the requirements of the Framework for Higher Education Qualifications for a level 7 award and to comply with University policies and the QAA Quality

**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 Geography.

**Knowledge and Understanding**

On completing the programme students should have:

- A1 - Understanding of key concepts, theories and ideas, relevant to their chosen area of study.
- A2 - Knowledge of a range of advanced methods used within environmental geosciences, and the capability to apply these methods to their chosen area of study.
- A3 - The ability to design and successfully complete a scientific research dissertation.
- A4 - Capacity to synthesise the scientific literature and to use it to analyse results.

A5 - The ability to acquire, process and analyse relevant scientific datasets.  
A6 - IT skills, comprising both i) advanced software used within the geosciences (e.g. GIS software); and ii) generic software, such including word processing, spreadsheets, bibliographic software and presentation software.  
A7 - The skills to identify and retrieve relevant materials relating to research, including annals, books, journals, theses, conference proceedings and resources available electronically and on the world-wide web.

### **Teaching and Learning Methods**

The compulsory modules provide students with base-line training in methods that are central to Environmental Geoscience, including research, planning and writing skills, training in scientific approaches and training in data analysis for research projects. Therefore delivering A2 to A7, A5 and A6.

Students will take a series of optional modules, which are best suited to their area of interest and best support their research dissertation. These more specialist modules will primarily address A1, but also A2 and A4-7.

The Research Dissertation will enable students to develop their independent research projects. This will be done with support and intellectual input from supervisors. This will particularly teach A3-5 but will also contribute to the other aims.

### **Assessment Strategy**

The Research Dissertation will assess A1-7, with a focus on A3-5. Students will need to effectively design their dissertation and produce a good-quality final dissertation, as this is fundamental to a research degree (A3). In order to do this, they will need to acquire, process and analyse relevant scientific datasets, which address their research question(s) (A5). The research dissertation then needs to set these results within the scientific literature, both in terms of setting out the scientific background and interpreting the results of the research dissertation (A4). Successful dissertations will apply subject-specific understanding from optional modules (A1) and advanced methods (A2). Students will need to apply IT skills (A6) and skills in retrieving research (A7) to their research dissertation topic, in order to successfully complete it.

Students are required to write effectively and critically assess the literature and project proposals. They will need to demonstrate IT skills to produce a good quality report, and their capacity to access and synthesise scientific literature. They will be required to process and analyse scientific data and use it to address a scientific question (A2-A7).

Students will conduct an open book assessment, during which they are required to determine the best way to present, analyse and interpret datasets to address specific questions (A5&6).

Topic-specific knowledge (A1) will be assessed via the assignments completed in the optional module choices for the programme. These assessments will also examine different aspects of A2 and A4-7.

### **Intellectual Skills**

On completing the programme students should be able to:

#### **B1 Principles**

- (i) Define and formulate research problems, questions and hypotheses.
- (ii) Demonstrate an advanced understanding of the rationale for different research methods and analysis techniques, and the ability to select and evaluate appropriate research methods and techniques.
- (iii) Understand sampling, sampling error, and biases in results.

<p>(iv) Demonstrate a systematic understanding of, and ability to apply, concepts of generalisability, validity, reliability and replicability.</p> <p>(v) Synthesise complex information and key theories within their area of study.</p> <p>(vi) Demonstrate an in-depth understanding of the scientific method.</p> <p><b>B2 Data collection and analysis</b>  <b>Students should be able to demonstrate:</b></p> <p>(i) A systematic knowledge and understanding of the application of selected methods of data collection.</p> <p>(ii) An in-depth understanding of strengths and weaknesses of different types of data and the development of a critical approach to the use of different data sources.</p> <p>(iii) An advanced understanding of the use of research methods and tools to analyse data.</p> <p>(iv) Proficiency in a range of quantitative data analysis techniques.</p>
<p><b>Teaching and Learning Methods</b></p> <p>B1 and B2 are delivered via the Research Dissertation. Students will develop these intellectual skills, as their thesis progresses. This is via independent reading, discussion with peers and input from supervisors.</p> <p>Students will be taught how to approach scientific problems, how to develop hypotheses, and how to write effectively and critically in a scientific context (B1). Students will be introduced to a range of data analysis approaches and taught how to present results effectively (B2).</p> <p>The optional modules will deliver B1 (iv), by teaching students the relevant information and theory for their chosen area of study. They will also deliver B2 and the other elements of B1, as the courses will teach relevant skills and data analysis techniques. As part of the reading for these courses, students will be exposed to different data types (B2 ii) and methods (B2 i &amp; iii). They will be encouraged to think critically about these approaches, both during teaching time and in their assessments.</p>
<p><b>Assessment Strategy</b></p> <p>B1 and B2 will be assessed via the Research Dissertation. These intellectual skills are essential for producing a good quality research dissertation. For example, students must be able to design and formulate research questions (B1 i) as these will form the basis of the research dissertation.</p> <p>Students are required to write scientifically and to synthesise ideas and relevant literature and be able to select appropriate approaches to analyse a raw dataset and to present the results effectively (B1 and B2).</p>
<p><b>Practical Skills</b></p> <p>On completing the programme students should be able to:</p> <p>C1 - Use range of appropriate, advanced methods to address research questions within environmental geoscience.</p> <p>C2 - Identify, acquire and collate relevant primary and/or secondary data, from appropriate sources.</p> <p>C3 - Demonstrate advanced IT skills and capability with specialist software.</p>
<p><b>Teaching and Learning Methods</b></p> <p>Students will learn about a variety of techniques and scientific approaches and will then learn to apply and further develop this knowledge to their research dissertation, via guidance from supervisors and independent reading. This will be supported by work completed in the relevant optional modules (C1-C3).</p>

### **Assessment Strategy**

Students are directly assessed in data preparation, analysis, interpretation and presentation of data, and will need to apply appropriate methods to analyse datasets and present their results (C1-C3).

These practical skills will be assessed via the Research Dissertation, as they are central to producing a good dissertation. C1-3 will also be assessed via the various assessments in the optional modules, although the exact format of the assessment will vary depending on the modules chosen.

### **Transferable/Key Skills**

On completing the programme students should:

D1 - Be able to communicate effectively, via written material and oral presentations.

D2 - Have the capacity to manage research, including writing proposals, planning the research project, and implement the research and complete it on time

D3 - Have the skills to work effectively as a member of a team.

D4 - Be able to deal with complex issues both systematically and creatively, make sound judgements in the absence of complete data, and communicate their conclusions clearly to specialist and non-specialist audiences

D5 - Demonstrate self-direction and originality in tackling and solving problems, and act autonomously in planning and implementing tasks at a professional or equivalent level.

D6 - Continue to advance their knowledge and understanding, and to develop new skills to a high level.

### **Teaching and Learning Methods**

D1 is taught through all modules on the course. For example, in the 'Research Dissertation', students will learn how to present their project results in a clear and scientific manner, via feedback from supervisors on draft chapters and discussion in meetings. The optional modules of the programme will have a variety of assessments (e.g. written portfolios and oral presentations), meaning that students will develop both written and oral communication skills.

D2 is mainly taught through the 'Research Dissertation'. Students will learn these techniques via meetings with their supervisors and independent development of the project. These principles will be reinforced via deadlines and assessment submissions for the optional modules.

D3. Students will learn to work as team members within their taught modules (optional and compulsory skills module). This will be taught by encouraging students to work together to resolve problems during practical exercises. Students will also be encouraged to work as a community to help each with other issues encountered during their 'Research Dissertation' work, e.g. to discuss and develop their project ideas with peers, or to help each other with technical issues with data processing.

D4-6 are taught through all modules of the course. They are fundamental to the research dissertation and will be developed through interaction with supervisors and peers. The compulsory "Dissertation" and "Data analysis for Geoscience" modules will teach students how to approach scientific problems, to tackle problems independently and will continue to advance students' knowledge of scientific approaches and skills. The optional modules will develop these skills, as students will be required to understand complex issues within their area of study and to improve their knowledge with self-directed reading and practical work. This will develop both understanding and skills.

## **Assessment Strategy**

D1 is assessed via the research dissertation, in “Data analysis for Geoscience” and through the assessments in the 40 credits of optional taught modules.  
D2 is primarily assessed via the research dissertation.  
D3 is assessed indirectly, as the capacity to work as part of a team should elevate the quality of the student’s research project.  
D4-6 are assessed through all modules. These skills are central to producing a high quality research project and will also be assessed via the various practical reports and assignments for “Data analysis for Geoscience” and the optional modules.

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

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

The programme will be for one year and in full-time only mode. This is because students would otherwise miss the core training module, certain optional modules and the research dissertation development. The main components are as follows:

#### **A. Independent research project**

The primary focus of the degree is the research project. Students can choose any topic within environmental geosciences, but a supervisor must agree to supervise it. A list of staff available to supervise will be provided to students, who are then responsible for developing the idea with the staff member. Students will provide a statement of research interests at application, which will allow us to check we can supervise a given topic, before admission.

#### **B. Taught courses (60 credits)**

Students will take 60 credits of masters-level courses, chosen from those offered across the university OR the small number of new courses, focused on physical geography. Selection of modules beyond those in the pre-approved list will require approval by the DPD. Students will be required to take compulsory modules with a focus on data preparation, analysis, interpretation, and presentation and academic and professional skills. Students are then able to fill the remaining credits with modules of their choice. The modules will be grouped into streams, so that students are clear about different pathways. This information will be provided to students in the course handbook. The pathways are for guidance only, and students may choose modules outside of their stream, but students should consider the relevance of modules to their degree and discuss choices with supervisors. Module choices will be discussed with supervisors prior to commencement, to ensure students have appropriate prior knowledge and are building a skill portfolio suitable for their area of interest.

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

The programme is strongly focused on research within environmental geoscience, and aims to prepare students for research-related jobs, including further academic study and research-focused industry roles (e.g. environmental consultancy). As outlined above, this will be done through an original thesis, supported by a core training module and specialist relevant optional modules.

In summary, the distinctive points of the programme are:

- Strong focus on research.
- Broad range of thesis topics offered across environmental geoscience, rather than specialising in one single area.
- Opportunity for students to lead and develop in-depth research projects, with expert guidance from academics.
- Teaches students the entire research process, from study design, to data collection, analysis and presentation.
- Provides training in advanced skills and data collection, and their application to research questions.

- Allows students to choose their preferred pathway, through relevant optional modules.
- Links to industry and directly transferrable skills.

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

[4867 Specification 24-25](#)

**13 Support for Student Learning**

The Student Self Service Portal provides links to key services and other information and is available at: <https://s3p.ncl.ac.uk/login/welcome.aspx>

**Induction**

During the first week of the first semester students attend an induction programme. New students will be given a general introduction to University life and the University's principal support services and general information about the School and their programme, as described in the Degree Programme Handbook. New and continuing students will be given detailed programme information and the timetable of lectures/practicals/labs/tutorials/etc. The International Office offers an additional induction programme for overseas students.

**Study skills support**

Students will learn a range of Personal Transferable Skills, including Study Skills, as outlined in the Programme Specification. Some of this material, e.g. time management is covered in the appropriate Induction Programme. Students are explicitly tutored on their approach to both group and individual projects.

The Academic Skills Kit (ASK) provides advice on developing academic skills and information about support which is available. Numeracy support is available through Maths-Aid. The Writing Development Centre offers advice and guidance on academic skills including writing for assessment, critical reading and note-taking, time management or exams and revision.

**Academic and Pastoral support**

Each undergraduate and taught postgraduate student will be assigned a personal tutor.\*

A personal tutor is one part of a wider network of advice and guidance available to students to support their personal and general academic development. The module leader acts as the first point of contact for subject-specific academic advice. Thereafter the Degree Programme Director or Head of School may be consulted. Issues relating to the programme may be raised at the Student-Staff Committee, and/or at the Board of Studies. Within the academic unit, students may also receive additional academic and pastoral advice from a range of other student-facing staff including Degree Programme Directors, dissertation/project supervisors, and professional services colleagues.

\*Arrangements may vary for students taking special types of provision.

The University also offers a wide range of institutional services and support upon which students can call, such as the Writing Development Centre, Careers Service and Student Wellbeing Service. This includes one-to-one counselling and guidance or group sessions/workshops on a range of topics, such as emotional issues e.g. stress and anxiety, student finance and budgeting, disability matters etc. There is specialist support

available for students with dyslexia and mental health issues. The ASK (Academic Skill Kit) website is a one-stop shop which signposts students to various sources of provision across the University. Furthermore, the Student Union operates a Student Advice Centre, which can provide advocacy and support to students on a range of topics including housing, debt, legal issues etc.

### **Support for students with disabilities**

The University's Disability team provides advice and support for disabled applicants and students at Newcastle University. The team can provide individuals with: advice about the University's facilities, services and the accessibility of the campus; advice on support and adjustments e.g. exam access arrangements; details about assistive technology, and Disabled Students Allowances and provide specialist study skills support for students with a Specific Learning Difficulty and/or Autism Spectrum Disorder.

### **Learning resources**

The University Library provides access to extensive collections of print and online information resources, including textbooks, ebooks, ejournals and databases. The Philip Robinson, Walton, Law libraries and Marjorie Robinson Reading Rooms also offer a range of different study spaces as well as help and support. The University's IT Service (NUIT), supports campus-wide computing facilities.

All new students whose first language is not English are required to take an English Language Proficiency Test. This is administered by INTO Newcastle University Centre on behalf of Newcastle University. Where appropriate, in-session language training can be provided.

### **Support with outdoor equipment/clothing**

A limited number of walking boots, wellies, waterproofs, and backpacks can be borrowed for fieldwork for those students who do not have this kind of clothing/equipment themselves. Please contact the physical geography technicians to enquire: [physgeog-technicians@newcastle.ac.uk](mailto:physgeog-technicians@newcastle.ac.uk)

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

### **Module reviews**

Changes to, or the introduction of new, modules are considered at the Board of Studies. Student opinion is sought at the Student-Staff Committee and/or the Board of Studies. The introduction of new modules and major changes to existing modules are subject to approval by the Faculty Education Committee.

### **Programme reviews**

The Board of Studies conducts an Annual Monitoring and Review of the degree programme and reports to the Faculty Education Committee. The Faculty Education Committee takes an overview of all programmes within the Faculty and reports any Faculty or institutional issues to the Taught Programmes Sub-Committee.

### **External Examiner reports**

External Examiner reports are considered by the Board of Studies. External Examiner reports and the response to the External Examiner from the Board of Studies are shared with institutional student representatives, through the Student-Staff Committee.

### **Student evaluations**

The programme is subject to review through online questionnaires. Student evaluation is also obtained mid-module using a variety of methods, as well as informally at the Student-Staff Committee and the Board of Studies. Postgraduate taught students take part in the annual Postgraduate Taught Experience Survey. The results from student surveys are considered as part of the Annual Monitoring and Review of the programme and any arising actions are captured at programme and School/institutional level and reported to the appropriate body.

### **Mechanisms for considering student feedback**

Feedback is channelled via the Student-Staff Committee and the Board of Studies.

### **Faculty and University Review Mechanisms**

Every six years degree programmes in each subject area undergo Learning and Teaching Review. This involves both the detailed consideration of a range of documentation, and a review visit by a review team (normally one day in duration) which includes an external subject specialist and a student representative. Following the review a report is produced, which forms the basis for a decision by University Education Committee on whether the programmes reviewed should be re-approved for a further six year period.

Research programmes are subject to the University's Quality Assurance and Enhancement Framework for Research Degree Programmes. This provides Schools with an opportunity to reflect on practice and a forum for enhancement of the student experience through the sharing of good practice and feedback from external sources. An Annual Review of Research Degree Programmes provides a formal opportunity to monitor the effectiveness of provision. The Annual Review is supplemented by a Review Visit every six years. The outcome of the Annual Review and the Review Visit are considered by the Graduate School Committee and the outcomes reported to the University Education Committee.

## **15 Regulation of assessment**

Please refer to the Degree regulation and examination Conventions at

<https://www.ncl.ac.uk/regulations/docs/>

### **Role of the External Examiner**

An External Examiner, a senior member of the subject community, is appointed by the University following recommendation from the Board of Studies. The External Examiner is required 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.

### **Research Programmes**

The research elements of the programme will be reviewed by external examiners appointed in accordance with the University's Handbook for Examiners of Research Degree by Theses: <https://www.ncl.ac.uk/student-progress/pgr/forms/>

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: <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.