UNIVERSITY OF LEICESTER

Programme Specification (Undergraduate)
For students entering in 2020/21 (Ignite)
Date amended: June 2020

1. Programme Title(s) and UCAS code(s):

MGeol Applied and Environmental Geology F611
MGeol Applied and Environmental Geology with a Year Abroad*
MGeol Applied and Environmental Geology with a Year in Industry**
* selected when on course and currently Year Abroad in New Zealand is not available for this degree programme.
** selected when on course.

2. Awarding body or institution:

University of Leicester

3. a) Mode of study:

Full time

b) Type of study:

Campus-based

4. Registration periods:

The normal period of registration is four years (five years for year in industry)

The maximum period of registration is six years (seven years for year in industry)

5. Typical entry requirements:

A-level: AAB including at least two from: Biology, Chemistry, Computer Science, Environmental Science, Geography, Geology, Maths or Physics.

International Baccalaureate: Pass diploma with 34 points including some science based subjects at higher level.

6. Accreditation of Prior Learning:

APL will not be accepted for exemptions from individual modules, however may be considered for direct entry to year 2, on a case by case and subject to the general provisions of the University APL policy.

7. Programme aims:

The programme aims to

1) provide students with a breadth of knowledge of Applied and Environmental Geology, and exposure to areas of research at the cutting edge of the Applied and Environmental Earth Sciences;
2) provide students with a thorough understanding of the theoretical and practical applications of Applied and Environmental Geology in the study of the Earth, and environmental and societal issues;
3) equip students with transferable and subject-specific skills necessary for a career in the Earth Sciences, other science based industries, education, and for training at management levels in other professions;
4) promote the development of ICT and written, oral and presentation skills appropriate for a science graduate at the MGeol level;
5) stimulate students to develop a wide range of independent and team skills;

6) ensure that students benefit from an extensive programme of work in the field, developing fundamental geological knowledge through observation and critical analysis as well as developing personal and character skills;
7) provide students, via the curriculum and research expertise of staff, with a first training in research and research techniques appropriate for further postgraduate study or a research position in industry;
8) provide students with the environment in which to develop their interest in Applied and Environmental Geology;
9) enthuse and motivate all students to achieve their full potential in their degree course.
10) provide breadth and depth, via advanced M-level modules, in the subject area of Applied and Environmental Geology;
11) provide students with a training in, and appreciation of, research methods in Applied and Environmental Geology.

Additional aims and objectives for Year Abroad degree

The Year Abroad will provide students with the opportunity to spend their third year of academic study at the University of Arizona, USA.

In addition, for the 'with Industry' variant

- To provide experience of applications of geology and other professional skills in Industry and to reinforce knowledge through their use in different environments

8. Reference points used to inform the programme specification:

QAA Benchmarking Statement for Earth sciences, environmental sciences and environmental studies (2014)

Degree programmes broadly concerned with earth sciences

2.4 It is anticipated that all graduates have appropriate knowledge of the main aspects of the Earth sciences, as listed:

- A holistic view of the present and past interactions between components of the Earth system, including the effects of extra-terrestrial influences on these interactions.
- The cycling of matter and the flows of energy into, between and within the solid Earth, the Earth's surface, the hydrosphere, the atmosphere and the biosphere.
- The study of the biological, chemical and physical processes that underpin our understanding of the structure, materials and processes relevant to the Earth and planetary bodies.
- The central paradigms in the Earth sciences: uniformitarianism (the present is the key to the past); the extent of geological time; evolution (the history of life on Earth); and plate tectonics
- Geological time, including the principles of stratigraphy, the stratigraphic column, the methods of geochronology, the rates of Earth processes, major events in Earth history, the evolution of life as revealed by the fossil record, the quaternary and anthropocene.
- Collection and analysis of Earth science data in the field, and the appropriate presentation, manipulation and extrapolation of these sometimes incomplete data in both two and three-dimensions, including the generation of geological maps and cross sections.
- The study of structures, materials and processes that includes an appreciation of temporal and spatial variations at appropriate scales.
- The study of the structure, the composition and the materials of the solid Earth (core, mantle, crust, asthenosphere, lithosphere and so on), the hydrosphere, the atmosphere, the cryosphere and the biosphere, and the processes operating within and between them.
- An understanding of other planetary bodies.
- Earth science terminology, nomenclature and classification of rocks, minerals, fossils, and

geological structures.

- The identification of rocks, minerals, fossils, and geological structures.
- Surveying and measurement both in the field and laboratory, and using quantitative and instrumental techniques.
- An awareness that the understanding and knowledge gained from the subject and its application has to be considered within a wider socio-economic and environmental context. This may include:
- the exploration for and development of Earth resources (for example, hydrocarbons, minerals, water, carbon dioxide sequestration, aggregates and radioactive waste)
- the use of past climates to understand climate change
- geological aspects of human impact on the environment
- geohazards (for example, flooding, earthquakes, volcanic eruptions and landslides) and their impact on society and the environment
- an Earth science perspective on sustainability, environmental impact and social awareness.

2.5 Typical programme elements might include: engineering geology; geochemistry; geological mapping; geomorphology; geophysics; geographic information systems and remote sensing applications; hydrogeology; igneous and metamorphic petrology, local and global tectonics; mineralogy; mineral deposits; natural hazards;; palaeobiology; palaeoclimatology; palaeontology; petroleum geology; petrology; sedimentology; stratigraphy; and structural geology.

2.6 Applications of the subject areas might include the exploration, development and remediation/storage of Earth resources (e.g. hydrocarbons, minerals, water, carbon dioxide sequestration, aggregates & radioactive waste), using past climates to understand climate change and the impact on the environment and society, civil engineering projects (e.g. land restoration, site investigations and waste disposal and understanding geohazards (e.g. flooding, earthquakes, volcanic eruptions and landslides.

In addition, the Programme Specifications were informed by:

- QAA Frameworks for Higher Education Qualifications in England Wales and Northern Ireland QAA Benchmarking Statement
- PDR report (November 2013)
- University Learning Strategy
- University Employability Strategy
- University of Leicester Academic Audit Evaluation
- NSS
- First Destination Survey
- External Examiner's Reports
- Accreditation by the Geological Society of London http://www.geolsoc.org.uk/en/Education%20and%20Careers/Universities/Degree%20Accreditation/First%20Degree%20Programmes%20in%20Geoscience/Currently%20Accredited%20First%20Degree%20Programmes

9. Programme Outcomes:

Ignite blended learning combines online and on campus teaching and learning methods

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
(a) Discipline specific knowledge and competencies		
(i) Mastery of an appropriate body of knowledge		
Discuss and explain the general principles and techniques of Applied and Environmental Geology, including the structure, composition and evolution of the Earth, its interrelationships with the hydrosphere, cryosphere, biosphere, and atmosphere and the perturbations of these systems by extraterrestrial influences.	Lectures; Tutorials; Practical classes; Seminars; Field Courses; Demonstrations; Example sheets; Resource-based learning; Directed reading; Problem-solving classes.	Written and practical examinations, including short-answer and essay examinations; Problem-based examinations; Coursework; Module tests; Essays; Assessment of field reports and maps; Poster presentations; Field notebooks; Problem-based exercises, written reports.
Describe the issues associated with exploitation of resources and the protection of the environment.	As above	As above

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
(ii) Understanding and application of key concepts and techniques		
Describe, identify and interpret a range of geological materials in the laboratory and field; select appropriate techniques to enable this; and explain geological relationships.	Lectures; Tutorials; Practical classes; Field Courses; Demonstrations; Example sheets; Resource-based learning; Directed reading.	Written and practical examinations, including short-answer and essay examinations; Problem-based examinations; Field notebooks.
Examine, record and interpret the geology (*senso lato*) of a region via a range of field-based techniques.	Lectures; Tutorials; Practical classes; Field Courses; Demonstrations; Independent field work.	Practical examination; Report and field notebook and map assessment
Explain geological time, rates and fluxes, and the techniques required to determine them.	Lectures, Tutorials, Practical classes; Seminars; Field Courses; Demonstrations; Example sheets; Resource-based learning; Directed reading; Problem-solving classes.	Written and practical examinations, including short-answer and essay examinations; Problem-based examinations.
Select geological knowledge and data for modeling purposes (for example, for evaluation of scientific hypotheses, for hazard mitigation, or for resource estimation).	Lectures; Tutorials; Practical classes; Field Courses; Demonstrations.	Written and practical examinations, including short-answer and essay examinations; Problem-based examinations; field notebooks.
Describe the importance of geological materials as resources, their exploitation and associated environmental impact.	Lectures; Tutorials; Practical classes; Field Courses; Demonstrations.	Exam and group work.
Demonstrate and apply knowledge of safety procedures in the field.	Field-based practical classes and demonstrations	Demonstration and role play.
Discuss and explain the processes of mineral deposit formation and those processes that disseminate contaminants through the environment.	Lectures; Tutorials; Practical classes; Field Courses; Demonstrations.	Written and practical examinations, including short-answer and essay examinations; Problem-based examinations; field notebooks.

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Demonstrate and apply knowledge of safety procedures in the laboratory. Demonstrate a knowledge of a number of research techniques and procedures	Supervised classes and training with appropriate staff and supervisors. Supervised laboratory classes, discussion sessions with project supervisors.	MGeol research project diary and report. MGeol Research project poster, report, project diary, associated oral presentation.
(iii) Critical analysis of key issues		
Identify theories paradigms, concepts and principles; apply scientific principles to evaluate current geological paradigms; and evaluate environmental and societal aspects of the Earth's resources.	Lectures; Tutorials; Practical classes; Field Courses; Demonstrations; Example sheets; Resource-based learning; Directed reading.	Written and practical examinations, including short-answer and essay examinations; MGeol research project report and project diary; Problem-based examinations; Coursework; Module tests; Essays; Tutorial discussions.
(iv) Clear and concise presentation of material		
Synthesise and interpret results, in order to effectively communicate (*via* written, oral, graphical means) data and ideas to a range of audiences.	Tutorials; Group seminars; Practical classes	Essays, essay-based examinations; independent projects; MGeol research project report, poster and project diary; contributions to tutorial discussions; poster displays; reports; group talks.
(v) Critical appraisal of evidence with appropriate insight		
Debate geological ideas. Construct and test scientific hypotheses and analyse using geological data.	Lectures; Tutorials; Practical classes; Seminars; Field Courses; Demonstrations; Directed reading; Problem-solving classes.	Essays; essay- and practical examinations; reports; presentations.
(vi) Other discipline specific competencies		
Conduct a range of field-based studies (e.g. geological mapping and recording of field observations). Develop responsibility for the immediate working environment. Describe risks for hazard assessment for field-based work. Identify safe practice. Explain the geological structure and history of an area.	Field courses, practical classes and demonstrations. Field-based classes and projects. Field-based classes and projects. Field classes, lectures, practical classes.	Report, field notebook, and geological map. Practical examinations. Staff-monitoring of hazard assessment forms. Assessment of fieldwork. Staff-monitoring of hazard assessment forms. Assessment of fieldwork. Independent field project report.

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
b) Transferable skills		
(i) Oral communication		
Present geological data and theories using appropriate methods.	Tutorials; Group seminars/discussions; field-based presentations.	Oral presentations in tutorials and classes; MGeol research project oral presentation; MGeol poster discussions
Discuss and review geological topics in tutorial and other group discussions, and respond effectively to questioning.	Tutorials; Group seminars/discussions; field-based presentations.	Oral presentations in tutorials and classes
Effectively lead and direct discussion of controversial subject-specific topics.	Discussion groups within module.	Oral presentation in classes and assessment of debating skills and contributions.
(ii) Written communication		
Communicate effectively and appropriately in a variety of written formats including essays, reports, projects, CVs and posters	Tutorials, demonstrations and guidance notes	Assessed essays, reports, poster displays, and examinations
Draw and describe geological features, specimens and thin sections.	Practical classes, demonstrations, fieldwork, independent project work	Field notebooks; assessed practical folders; assessed reports.
(iii) Information technology		
Use spreadsheets or other software to enter, manipulate and display numerical data.	Subject-embedded exercises. Tutorials.	Assessed report; practical assignments.
Use appropriate software packages to prepare written reports, essays, posters and presentations (e.g. Word, PowerPoint)	Report-writing for tutorials; subject-embedded exercises; presentation to tutorial groups and classes.	Assessed report; tutorial and practical assignments; independent work assignments; MGeol Research project report, poster and oral presentation.
Critically review information from electronic sources.	Tutorial and class supported information retrieval for projects, essays and reports.	Assessed report; tutorial; practical assignments and independent work assignments (including MGeol research project report).

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
(iv) Numeracy		
Select appropriate numerical, statistical and graphical methods to explain and interpret geological concepts.	Introduced in the first year within practical classes and tutorials.	Mid-semester progress tests and as components within subject specific modules throughout the three years of study; feedback on practical class assignments.
(v) Team working		
Organize and work effectively within a team, and evaluate performance of self and of team.	Tutorials, seminars, practical classes, project work, and field-based discussions.	Tutorial-based assessments; assessed practical work, and team fieldwork.
Identify self and team goals and responsibilities for team working.	As above.	As above.
(vi) Problem solving		
Solve numerical, spatial, temporal and geometrical problems.	Lectures, tutorials, practical and field classes, group work, projects.	Assessment of field notebooks, practical class work, project work and reports.
Solve problems with incomplete or contradictory information.	Field and practical classes, independent research supervisory sessions.	Dissertation; independent field project and poster; MGeol research project report and poster.
(vii) Information handling		
Effectively search for, gather and utilise information relevant to geological problem solving.	Lectures, tutorials, practicals, study skills within tutorials, field and lab-based projects.	Tutorial assignments, project work.

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
(viii) Skills for lifelong learning		
Demonstrate intellectual independence via independent research.	Independent project work, including field-based project work; MGeol research project; dissertation.	Assessed independent work. Coursework within modules; MGeol project report, poster, oral presentations, dissertation.
Develop and implement a personal plan of work to meet a deadline.	All of the above, and particularly independent project work.	Assessed independent work including MGeol research project; field project, coursework within modules.
Identify targets for personal, career and academic development.	All of the above, and particularly independent project work and in tutorials.	Assessed independent work. Successful Placement for Year in Industry Students
Plan and execute an independent research project	Project planning classes, supervisory sessions, independent research project.	Assessed MGeol research project

10. Progression points:
In cases where a student has failed to meet a requirement to progress he or she will be required to withdraw from the course

In order for a student to continue on an M.Geol course, they will normally be expected to achieve an average mark of at least 60% at the end of the second year. Students whose overall average is less than 60% but more than 55% will be considered individually; they normally are required to achieve a mark of at least 60% in at least 60 credits of second year modules. Students who do not achieve the standard required for M.Geol, including those who have an average 2nd year mark of less than 55%, will be transferred to the B.Sc. degree course.

For Year in Industry Variant:

Progression onto the Year in Industry placement preparation module will require a 1st year CWA of 50%. Students who undertake the placement preparation module, but do not obtain a placement or do not satisfactorily complete (attendance, participation and completion of set tasks) the placement year will be transferred to the standard degree programme.

11. Scheme of Assessment

The programme follows the standard scheme of award and classification set out in Senate Regulation 5.

12. Special features:

Residential field courses
Group problem solving
Student centered learning – small-group tutorials
Field-based project
Accessible, extensive mineral, rock and fossils undergraduate teaching collections, including ore deposits
Modules incorporating industry-standard software training and application
Department-based specialist careers advisors
Independent research project
'Hot Topics' student-led debating/seminar module
Access to state-of-the-art analytical facilities for research projects

Placements

Students undertake a year in industry between the second and third years of their programme. Progression onto the Year in Industry placement preparation module will require a 1st year CWA of 50%. Students who undertake the placement preparation module, but do not obtain a placement or do not satisfactorily complete (attendance, participation and completion of set tasks) the placement year will be transferred to the standard degree programme.

As a condition of the 'with Industry' programme, students are required to undertake preparatory training during the second year of their degree.

Students are responsible for securing their own placement but will receive support in this from the Career Development Service. .

Once in placement, students will need to register their University 'attendance' by logging on to a dedicated Blackboard site once a week. In the course of the placement the student will receive one or two visits from a member of staff. The second 'visit' can be in the form of a Skype call. Should a student secure an overseas placement both visits will typically be delivered via a Skype call.

While in placement, students will be required to complete an online log. The placement log requires students to undertake reflective activities which are marked on a pass/fail basis. This, together with the final summative reflective report, constitutes the assessment for the placement year. Students have to submit the final report within one month of finishing the placement, and are allowed to resubmit once if required.

If a student fails to secure a placement or does not meet the academic progression requirements at the end of year 2, they will be transferred to the non-industry variant of their degree programme.

13. Indications of programme quality

Accreditation by the Geological Society of London.

The research interests of the staff strongly inform the teaching programme. External industry involvement with the development of parts of the teaching programme, including the integration of relevant software and access to case studies.

Quotes from recent External Examiners:

'The department is excellent and deserves its reputation as one of the leading centres of geoscience teaching/research in Europe.'
'I believe that the BSc and MGeol programmes in Applied and Environmental Geology to be of high quality, delivered by a dedicated set of professional academics. I was impressed by the diverse range of assessment styles and the extremely positive reactions of the students to the course and the staff team.'

14. External Examiners

The details of the External Examiner(s) for this programme and the most recent External Examiners' reports can be found here.

Appendix 1: Programme structure (programme regulations)

MGEOL APPLIED AND ENVIRONMENTAL GEOLOGY

FIRST YEAR MODULES		
Core Modules		**Credits**
	YEAR LONG	
GL1100	Tutorials	15
GL1101	The Rock Cycle: our dynamic earth	30
	SEMESTER 1	
GL1102	Micro to Macro	15
GL1103	Palaeobiology and the Stratigraphic Record	15
	SEMESTER 2	
GL1104	Natural Resources and the Environment	15
GL1105	Geological Maps and Structures	15
GL1106	Introductory Field Course	15
SECOND YEAR MODULES		
Core Modules		**Credits**
	YEAR LONG	
GL2100	Geological Field Skills	30
	SEMESTER 1	
GL2106	Introductory Mineral Deposits	15
GL2103	Magmatic and Metamorphic Processes	15
GY2420	Climate Change: Impacts, Vulnerability and Adaptation	15
	SEMESTER 2	
GL2102	Structure and Tectonics	15
GL2101	Earth and Ocean Systems	15
GL2105	Depositional Processes and Environments	15
THIRD YEAR MODULES		
Core Modules		**Credits**
	SEMESTER 1	
GL3100	Field Based Project	30
GL3102	Environmental Geoscience	15
	SEMESTER 2	
GL3101	Dissertation	15
GL3109	Mineral Exploration and Evaluation	15
GL3113	Applied Field Course	15
Optional Modules		**Credits**
(To choose 15 credits)	**SEMESTER 1**	
GL3103	Petroleum Reservoir Petrophysics	15
GL3104	Concepts in sedimentology and stratigraphy with applications to reservoir geoscience	15

(To choose 15 credits)	**SEMESTER 2**	
GL3105	Earth Science in Education	15
GL3106	Planetary Science	15
GL3107	Reflection Seismology	15
GL3108	Geological Application of Microfossils	15
GL3110	Advanced Mineral Deposits	15
GY3434	Stable Isotopes in the Environment	15
FOURTH YEAR MODULES		
Core Modules		**Credits**
	YEAR LONG	
GL4100	Hot Topics	15
GL4102	Research Project (AEG)	60
	SEMESTER 1	
GL4107	Ore Genesis	15
Must choose either:		
GL4105	Overseas Field Course	15
GL4106	Urban Geology	15
	SEMESTER 2	
Optional Modules		**Credits**
(*To choose 15 credits*)		
	SEMESTER 1	
GL4106[a]	Urban Geology	15
GL4110	Igneous Petrogenesis	15
	SEMESTER 2	
GL4111	Methods and Modelling in Palaeoclimatology	15
a – available if GL4105 chosen as core		

MGEOL APPLIED AND ENVIRONMENTAL GEOLOGY WITH A YEAR IN INDUSTRY

FIRST YEAR MODULES		
Core Modules		**Credits**
	YEAR LONG	
GL1100	Tutorials	15
GL1101	The Rock Cycle: our dynamic earth	30
	SEMESTER 1	
GL1102	Micro to Macro	15
GL1103	Palaeobiology and the Stratigraphic Record	15
	SEMESTER 2	
GL1104	Natural Resources and the Environment	15
GL1105	Geological Maps and Structures	15
GL1106	Introductory Field Course	15
SECOND YEAR MODULES		
Core Modules		**Credits**
	YEAR LONG	
GL2100	Geological Field Skills	30
	SEMESTER 1	

GL2106	Introductory Mineral Deposits	15
GL2103	Magmatic and Metamorphic Processes	15
GY2420	Climate Change: Impacts, Vulnerability and Adaptation	15
	SEMESTER 2	
GL2102	Structure and Tectonics	15
GL2101	Earth and Ocean Systems	15
GL2105	Depositional Processes and Environments	15
	YEAR LONG	
GL2xxx	Placement Preparation	0
THIRD YEAR MODULES		
Core Modules		**Credits**
	SEMESTER 1	
GL3100	Field Based Project	30
GL3102	Environmental Geoscience	15
	SEMESTER 2	
GL3101	Dissertation	15
GL3109	Mineral Exploration and Evaluation	15
GL3113	Applied Field Course	15
Optional Modules		**Credits**
(To choose 15 credits)	**SEMESTER 1**	
GL3103	Petroleum Reservoir Petrophysics	15
GL3104	Concepts in sedimentology and stratigraphy with applications to reservoir geoscience	15
(To choose 15 credits)	**SEMESTER 2**	
GL3105	Earth Science in Education	15
GL3106	Planetary Science	15
GL3107	Reflection Seismology	15
GL3108	Geological Application of Microfossils	15
GL3110	Advanced Mineral Deposits	15
GY3434	Stable Isotopes in the Environment	15
FOURTH YEAR MODULES		
Core Modules		**Credits**
	YEAR LONG	
GL4100	Hot Topics	15
GL4102	Research Project (AEG)	60
	SEMESTER 1	
GL4107	Ore Genesis	15
Must choose either:		
GL4105	Overseas Field Course	15
GL4106	Urban Geology	15
	SEMESTER 2	
Optional Modules		**Credits**
(*To choose 15 credits*)		

	SEMESTER 1	
GL4106[a]	Urban Geology	15
GL4110	Igneous Petrogenesis	15
	SEMESTER 2	
GL4111	Methods and Modelling in Palaeoclimatology	15
a – available if GL4105 chosen as core		

THIRD YEAR

Students who gain an industry placement will be assessed as per the standard model for undergraduate placements in the College of Science and Engineering. The marks from this year will not be included in the final degree assessment.

MGeol GEOLOGY WITH APPLIED GEOLOGY WITH A YEAR ABROAD

FIRST YEAR MODULES		
Core Modules		**Credits**
	YEAR LONG	
GL1100	Tutorials	15
GL1101	The Rock Cycle: our dynamic earth	30
	SEMESTER 1	
GL1102	Micro to Macro	15
GL1103	Palaeobiology and the Stratigraphic Record	15
	SEMESTER 2	
GL1104	Natural Resources and the Environment	15
GL1105	Geological Maps and Structures	15
GL1106	Introductory Field Course	15
SECOND YEAR MODULES		
Core Modules		**Credits**
	YEAR LONG	
GL2100	Geological Field Skills	30
	SEMESTER 1	
GL2103	Magmatic and Metamorphic Processes	15
GL2106	Introductory Mineral Deposits	15
GY2420	Climate Change: Impacts, Vulnerability and Adaptation	15
	SEMESTER 2	
GL2101	Earth and Ocean Systems	15
GL2102	Structure and Tectonics	15
GL2105	Depositional Processes and Environments	15

THIRD YEAR MODULES for students going to North America

Core Modules		**Credits**
GL3056	INDEPENDENT FIELD-BASED PROJECT (YEAR ABROAD)	20

The third year will be spent at the University of Arizona and modules taken there will substitute for 100 credits of normal third-year modules of the M.Geol. Applied and Environmental Geology at Leicester.

FOURTH YEAR MODULES		
Core Modules		**Credits**
	YEAR LONG	
GL4100	Hot Topics	15
GL4102	Research Project (AEG)	60
	SEMESTER 1	
GL4107	Ore Genesis	15
Must choose either:		
GL4105	Overseas Field Course	15
GL4106	Urban Geology	15
	SEMESTER 2	
Optional Modules		**Credits**
(*To choose 15 credits*)		
	SEMESTER 1	
GL4106[a]	Urban Geology	15
GL4110	Igneous Petrogenesis	15
	SEMESTER 2	
GL4111	Methods and Modelling in Palaeoclimatology	15
a – available if GL4105 chosen as core		

Appendix 2: Module specifications

See module specification database http://www2.le.ac.uk/offices/sas2/courses/documentation

Appendix 3: Skills matrix