PROGRAMME SPECIFICATION	

1	**Awarding Institution**	Newcastle University
2	**Teaching Institution**	Newcastle University
3	**Final Award**	BA /BSc Honours
4	**Programme Title**	Geography
5	**UCAS/Programme Code**	L701, F800
6	**Programme Accreditation**	Not applicable
7	**QAA Subject Benchmark(s)**	Geography
8	**FHEQ Level**	6
9	**Date written/revised**	Revised May 2010

10 Programme Aims

A1 to inspire students to think about their own place in the world, their values, and their responsibilities to other people and the environment

A2 to enable students to develop their knowledge and understanding of the theoretical and empirical basis of the discipline of geography by challenging their assumptions and the assumptions of others

A3 to provide students with opportunities to make well reasoned arguments and to think both critically and creatively through active engagement with a wide range of geographical information

A4 to equip graduates with the knowledge and skills appropriate for a career in a wide range of geographical and non-geographical professions or for further study

A5 to promote the development of personal attributes and skills that foster initiative, innovation, self-reflection, effective communication, problem setting, problem solving, responsibility and teamwork

A6 to provide an award which meets the requirements at level 6 in the Framework for Higher Education Qualification and which conforms to University policies about quality assurance and QAA codes of practice

11 Intended 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 primary aims of provision (above) produce Intended Learning Outcomes in four key areas of; Knowledge and Understanding; Intellectual (Thinking) Skills; Practical and Professional Skills; and Key Transferable Skills. Each ILO has a corresponding suite of Teaching and Learning Methods and an appropriate Assessment Strategy.

Knowledge and Understanding

On completing the programme students should have a knowledge and understanding of:

A1 The dynamic and contested nature of geographical thought and practice and the inter-relationships between the discipline and the physical and natural sciences, the social sciences and humanities

A2 Contested debates concerning a wide range of earth science systems and issues, including sustainability, geomorphologic processes, geo-hazards and global environmental change

A3 Patterns and processes of environmental change and their inter-relationships with human activities, combining scientific enquiry with environmental awareness to challenge debates and draw on a range of evidence and new perspectives

A4 Spatial patterns and relationships in human phenomena; challenging assumptions about contemporary problems and responsibilities in an interconnected world

A5 complex and uneven geographies of places, cultures and peoples and their constitution by social, economic, political and environmental processes, and the influence of places on these processes

A6 The geographies of difference and inequality with particular reference to historical development, ethnicity, class, gender and the changing nature of urban and regional development and policy

A7 Contemporary debates about time-space relationships, globalization, sustainability, community, geopolitics and global interconnections

A8 The role of changes in technology, the nature of work and labour markets in influencing spatial patterns of economic activity

A9 The theory and application of quantitative and qualitative geographic information; critically engaging with discourse analysis, visual images, participatory and ethnographic methods and spatial techniques across a wide range of geographical contexts

A10 The relevance of geographical perspectives to the development of environmental, political, economic and cultural agendas and policies and action to address real-world problems

Teaching and Learning Methods

Geographical knowledge and understanding (A1-10) is acquired throughout the curriculum through an emphasis on field-based and experiential learning alongside a mix of well established and more experimental teaching and learning practices including: lectures, tutorials, staff and student-led seminars, guided independent study, oral and poster presentations and teamwork. This mix of cognate and experiential teaching and learning promotes creativity, critical thinking, active learning, problem setting and problem posing, information literacy, numeracy and spatial awareness.

A compulsory Stage 1 programme develops the main themes of the degree (A1-10) while an overview of disciplinary thought and practice (A1) is provided by core Stage 2 modules. During Stages 2 and 3 students can follow particular pathways through the degree programme, specialising in physical geography (A2-3, 10), human geography (A4-10) or a combination of both.

Assessment Strategy

Knowledge and understanding (A1-10) is assessed by combinations of examinations (seen and unseen, including computer-aided assessments) and coursework (including essays, individual and group projects, dissertations, practical reports, oral presentations, poster presentations, portfolios and field-based project work).

Examinations are primarily intended to assess knowledge of core information while written and oral coursework places more emphasis on the development of critical analysis and understanding of the concepts within a wider geographical context. Field-based projects, and

individual and group presentations emphasise effective communication, data synthesis, personal enterprise, innovation, creativity and teamwork.

Intellectual Skills

On completing the programme students should be able to:

B1 Gather, abstract and synthesise data, text and information from a variety of sources using well developed skills of numeracy and information literacy

B2 Assess and critically evaluate the merits of contrasting theories, explanations, methods policies and action

B3 Demonstrate initiative, self awareness and reflection through well prepared and coherently structured oral and written communication

B4 Develop reasoned arguments and effective means of outward facing public engagement

B5 Draw on personal enterprise, innovation and creativity to solve problems and make reasoned decisions

Teaching and Learning Methods

Cognitive skills are introduced in Stage 1 modules and developed to advanced levels through Stage 2 and 3 modules. Seminars, projects and group work allow students to discuss and learn to evaluate arguments and evidence while fieldwork, and especially the dissertation, promotes personal enterprise, innovation and creativity alongside advanced intellectual skills of problem setting and problem solving.

Assessment Strategy

Cognitive skills are assessed by coursework essays, field-based projects, case studies, textual analysis, policy evaluations, portfolios and, to a lesser extent, via unseen written examinations. The dissertation provides a means of demonstrating the full range of cognitive/ intellectual skills.

Practical Skills

On completing the programme students should be able to:

C1 Plan, design, execute and report geographical research both individually and as part of a team

C2 Undertake effective laboratory and field work (with due regard for personal and public safety and risk assessment)

C3 Employ a variety of technical and laboratory-based methods for the analysis and presentation of spatial and environmental information (e.g. GIS, water chemistry, etc)

C4 Collect, interpret and synthesise different types of quantitative and qualitative geographical data (primary and secondary data, in the field and as a desk study) including discourse analysis, techniques for exploring visual media and ways of presenting data spatially

C5 Recognise the ethical issues involved in geographical debates and enquiries

C6 Apply practical insights and awareness of how different institutions and organisations work to future employment and their roles as world citizens

Teaching and Learning Methods

Subject-specific and professional skills are introduced and developed in dedicated core Stage 1 and 2 modules, and are developed to an advanced level in optional modules and the dissertation. Teaching and learning methods include lectures, seminars, computer based workshops, laboratory practicals and compulsory field-based experiential learning at stages 1 and 2.

Assessment Strategy

Subject-specific and professional skills are assessed by means of essays, oral and poster presentations, fieldwork and laboratory reports and written and computer-aided examinations. All skills (C1-5) are assessed in Stage 3 by means of the dissertation. Students who take work-based learning modules learn and practice self-management skills for which assessment is by mock job interview (C6).

Transferable/Key Skills	
D1	learn in familiar and unfamiliar situations, both independently and in groups
D2	communicate effectively (in writing, verbally and through visual and new media presentations)
D3	apply numerical and computational skills to geographical information
D4	use information technology effectively and creatively with full regard to the ethical and quality control issues of knowledge production and communication (including use of spreadsheet, database and word processing programmes; Internet and e-mail)
D5	identify, retrieve, sort and exchange geographical information using a wide range of sources (including on-line computer searches)
D6	work as part of a team and to recognise and respect the viewpoints of others
D7	manage their time, show initiative and organise their work effectively

Teaching and Learning Methods

Stage 1 introduces all key skills (D1-7) and these are taught formally and further developed in a step-wise fashion throughout each stage of the programme. Communication skills (D2) are developed in written coursework and exams, projects, oral and poster presentations and via the dissertation. Core modules at stages 1 and 2 support numerate skill development (D3) and the retrieval and use of information sources (D4-5). Self-management (D7) is promoted through a strict coursework and assessment timetable. The dissertation provides an opportunity for the development of a range of key skills, (D1-5, 7), particularly the ability to work independently (D1), while fieldwork provides opportunities to learn in unfamiliar situations (D1) and develop teamworking skills (D6).

Assessment Strategy

Key skills are assessed by a combination of examination and coursework assignments, including essays, project and practical reports, portfolios, oral and poster presentations and computer-aided assessments. A wide range of key skills are typically assessed within the dissertation.

12 Programme Curriculum, Structure and Features

Basic structure of the programme

The programme is studied over three years full-time and is undertaken in three stages (one for each year of study). Each stage is arranged in two 15 week semesters. The programme is divided into study units called modules with credit values of 10, 20 or 40 credits. Each 20 credits of module weight represents approximately 200 hours of student learning, activity and assessment including up to a maximum of 36 hours teaching. Each stage has an equivalent of 120 credits.

Stage 1 of the programme aims to provide a foundation in skills and methods appropriate to the study of Geography, as well an introduction to the key themes of physical and human geography developed in Stages 2 and 3. All students follow a compulsory module programme totalling 100 credits at Stage 1; a further 20 credits must be chosen from cognate disciplines elsewhere in the School or University with the approval of the Degree Programme Director. Core modules at Stage 2 focus on the different philosophical traditions of geography and develop advanced techniques and research skills so as to develop their own research proposal and provide the basis for independent dissertation study in the third year. During stages 2 and 3 students are free to construct their degree from a wide range of optional modules in order to provide a focused programme of study that is both coherent as a geography degree and tailored to individual interests, abilities, and future employment. Students are progressively engaged with cutting edge theory and research and optional modules at Stage 3 directly reflect staff research activity. Further development of work-based skills is facilitated by optional (external) modules in student tutoring and learning from work.

The structure of the degree is given below.

Degree structure for BA and BSc (Honours) Geography.

Stage 1

Core modules

Code	Module and credit value	
GEO1005	Environmental Issues	20
GEO1007	Geographical Imaginations	20
GEO1010	Interconnected World	20
GEO1011	Introduction to Geographical Analysis	20
GEO1096	Geographical Study Skills	20

Optional modules

Code	Module and credit value	
GEO1012	Introduction to Earth Sciences	20

Stage 2

Core modules

Code	Module and credit value	
GEO2044	Advanced Study Skills	20
***One** of Geo2043 **or** Geo2048 as **core**; a second can be taken as optional*		
GEO2043	Key Methods for Human Geographers	20
GEO2048	Field & Lab Techniques in Physical Geography	20

Optional modules

Code	Module and credit value	
GEO2045	Economic and Social Change Field Course: Greece	20
GEO2103	Globalisation, Culture and Development	20
GEO2037	Physical Geography Fieldcourse (Ireland)	20
GEO2052	Physical Geography Field Course (Iceland)	20
GEO2104	Social Geographies	20
GEO2047	Political Geography	20
GEO2051	Quaternary Environments	20
GEO2097	Economic & Social Change Fieldcourse (Poland)	20
GEO2105	UK Military Environments and Landscapes Field Course: Northumberland	20
GEO2099	Economic Geography	20
GE02042	Aquatic Pollution	20

Stage 3

Compulsory

Code	Module and credit value	
GEO3099	Dissertation	40

Optional

Code	Module and credit value	
GEO3041	Geography of Commodities	20
GEO3106	Producing Africa: Globalisation and Representation	20
GEO3112	Quaternary Palaeoclimatology	20
GEO3060	Erasmus Student Exchange	30

GEO3115	Erasmus Student Exchange (outside Europe)	40
GEO3063	Militarism: Space & Society	20
GEO3064	Research Methods in Environmental Pollution	20
GEO3065	Race, Place and Nation	20
GEO3114	Local & Regional Development	20
GEO3069	River Management	10
GEO3070	Glacial Meltwater Processes and Products	10
GEO3071	The Oceans: Past & Present	10
GEO3073	Ice Age Earth	10
GEO3110	Tectonic Geomorphology	20
GEO3105	Young People, Place and Identity	20
GEO3102	Geopolitical Thought and Practice	20
GEO3103	Geographies of Money	20
GPS3002	New Horizons in Social Science	20
GPS3001	Work Experience Placements	20

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

- The programme provides a broad foundation in the discipline while allowing students the option of specialising in human geography, physical geography or a combination of both
- A compulsory dissertation provides students with first-hand experience of conducting and reporting original geographical research
- The curriculum is strongly linked to leading geographical research conducted by staff
- All students have the opportunity to undertake fieldwork in both the UK and abroad, including trips to Greece, Poland, New York, Iceland and Ireland
- Students may opt to study abroad for one semester (via the Erasmus Programme)

Programme regulations (link to on-line version)

http://www.ncl.ac.uk/regulations/

13 Criteria for admission

Entry qualifications
GCSEs required including GCSE Mathematics (minimum grade B)
No other special requirement

A-Level Subjects and Grades
School/college leavers
Generally 3 A levels required for entry at ABB, including Geography and excluding General Studies.

Under the new post 16 arrangements in England:
6 credit vocational A level accepted as one of the three A levels.
Applicants with 12 credit vocational A levels will be considered on their merits
2 AS levels will be accepted instead of one of the A levels (subject other than those at A level)
Skills qualifications will not generally be included in offers

Scottish Highers

AABBB

BTEC
Each case is considered on its merits.

Admissions policy/selection tools
The main criterion for admission is that the student should be capable of achieving the learning outcomes of the degree. This is assessed from evidence of previous examination successes as well as a holistic review of the UCAS application indicating academic potential. All students who are offered a place will be invited to an Open Day.

Non-standard Entry Requirements
Each case is considered on its merits. Appropriate overseas qualifications will be considered, as well as A levels, while relevant work experience is also useful.

Additional Requirements

Level of English Language capability
IELTS 6.5 minimum

14 Support for Student Learning

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 principle 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. Meetings with personal tutors (as tutorial groups) give students the opportunity to draw their tutor's attention to special learning needs. The International Office offers an additional induction programme for overseas students (see http://www.ncl.ac.uk/international/coming_to_newcastle/orientation.phtml)
In addition to Stage induction programmes, all modules induct their students using a combination of lecture-based introductory material and written guides outlining the module structure, content, assessment, reading and teaching arrangements. Most modules have also adopted the University's web-based teaching and learning support system (Blackboard); Stage 1 students are inducted into this system through the compulsory tutorial programme.

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. Two Stage 1 modules, Geographical Study Skills and Introduction to Geographical Analysis, develop student study skills and provide a foundation for independent learning. Lectures and workshop classes are supported by small group sessions and tutorials with individual staff members where students can discuss their skills in finding information, reading statistics, time management, essay writing and referencing. Study skills are further developed by the compulsory Stage 2 Advanced Study Skills and either Key Methods for Human Geographers or Field and Laboratory Techniques modules.

Academic support
The initial point of contact for a student is with a lecturer or module leader, or their tutor (see below) for more generic issues. All staff encourage students to make appointments to discuss their work directly or via e-mail. Thereafter the Degree Programme Director, Senior Tutor or Head of Geography may be consulted. In Stages 2 and 3 students are assigned a personal supervisor (Stage 2) and mentor (Stage 3) to guide the development and execution of their dissertation research. Issues relating to the programme may be raised at the Staff-Student Committee, and/or at the Board of Studies.

Pastoral support
All students are assigned a personal tutor whose responsibility is to monitor the academic

performance and overall well-being of their tutees. Details of the personal tutor system can be found at http://www.ncl.ac.uk/undergraduate/support/tutor.phtml. Students may also consult the Senior Tutor in Geography. The Stage 1 Geographical Study Skills module is administered via the personal tutorial system and ensures weekly tutorial activities during the first year of study. During Stages 2 and 3 tutors meet with their tutees four times per year; meetings focus on module choices, academic performance (including discussion of mark feedback), preparation for exams and reflection on personal development and career aspirations. In addition the University offers a range of support services, including the Student Advice Centre, the Counselling and Wellbeing team, the Mature Student Support Officer, and a Childcare Support Officer, see http://www.ncl.ac.uk/undergraduate/support/welfare.phtml

Support for students with disabilities
The University's Disability Support Service provides help and advice for disabled students at the University - and those thinking of coming to Newcastle. It provides individuals with: advice about the University's facilities, services and the accessibility of campus; details about the technical support available; guidance in study skills and advice on financial support arrangements; a resources room with equipment and software to assist students in their studies. For further details see http://www.ncl.ac.uk/disability-support/

Learning resources
The University's main learning resources are provided by the Robinson and Walton Libraries (for books, journals, online resources), and Information Systems and Services, which supports campus-wide computing facilities, see http://www.ncl.ac.uk/undergraduate/support/acfacilities.phtml

All new students whose first language is not English are required to take an English Language test in the Language Centre. Where appropriate, in-sessional language training can be provided. The Language Centre houses a range of resources for learning other languages which may be particularly appropriate for those interested in an Erasmus exchange. See http://www.ncl.ac.uk/undergraduate/support/facilities/langcen.phtml

Discipline-specific resources provided by the School include the following:

- laboratory space and equipment supporting a wide range of analytical facilities (including grain size, water and sediment geochemistry and microfossil analysis) appropriate to physical geography modules and dissertation study, including a dedicated teaching room, fully refurbished geomorphology laboratory and a microscope room (with a dedicated computer and image processing and analysis software) in the Daysh Building. Laboratory facilities are supported by two technicians.
- physical geography fieldwork equipment appropriate for sediment coring, sampling and analysis, field survey (including levels, theodolites and GPS sets), hydrological analysis and water sampling and assessment. Two inflatable boats (with appropriate safety equipment) facilitate extraction of lake sediment and water samples. Additional field survey equipment may be obtained on loan from the School of Civil Engineering and Geosciences

Careers advice
Careers advice is an integral part of induction programmes for new and returning students, while students have access to the Careers Service and are encouraged to use it throughout their degree programme. See http://www.careers.ncl.ac.uk/
Careers advisors may be consulted via an appointment system and students are also encouraged to attend employer sessions and careers workshops at the University.

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

Module reviews
All modules are subject to review by on-line questionnaires which are considered by the

Board of Studies. Changes to, or the introduction of new, modules are considered at the School Teaching and Learning Committee, the Geography Teaching and Learning Committee and at the Board of Studies. Student opinion is sought at the Staff-Student Committee, both School and Geography Teaching and Learning Committees and the Board of Studies. New modules and major changes to existing modules are subject to approval by the Faculty Teaching and Learning Committee.

Programme reviews
In addition to module questionnaires (above), students are invited to participate in small-group 'focus' style consultation sessions. The Board of Studies conducts an Annual Monitoring and Review of the degree programme and reports to Faculty Teaching and Learning Committee.

External Examiner reports
External Examiner reports are considered by the Board of Studies. The Board responds to these reports through Faculty Teaching and Learning Committee. External Examiner reports are shared with institutional student representatives, through the Staff-Student Committee.

Student evaluations
All modules, and the degree programme, are subject to review by student questionnaires/ consultations (see Module and Programme reviews above). Informal student evaluation is also obtained at the Staff-Student Committee, both School and Geography Teaching and Learning Committees and the Board of Studies. The National Student Survey is sent out every year to final-year undergraduate students, and consists of a set of questions seeking the students' views on the quality of the learning and teaching in their HEIs. Further information is at www.thestudentsurvey.com/
With reference to the outcomes of the NSS and institutional student satisfaction surveys actions are taken at all appropriate levels by the institution.

Mechanisms for gaining student feedback
Feedback is channelled via the Staff-Student Committee and the Board of Studies.

Faculty and University Review Mechanisms
The programme is subject to the University's Internal Subject Review process, see http://www.ncl.ac.uk/aqss/qsh/internal_subject_review/index.php

Accreditation reports
n/a

Additional mechanisms

16 Regulation of assessment

Pass mark
The pass mark is for Undergraduate programmes is 40.

Course requirements
Progression is subject to the University's Undergraduate Progress Regulations (http://www.ncl.ac.uk/calendar/university.regs/ugcont.pdf) and Undergraduate Examination Conventions (http://www.ncl.ac.uk/calendar/university.regs/ugexamconv.pdf). In summary, students must pass, or be deemed to have passed, 120 credits at each Stage. Limited compensation up to 40 credits and down to a mark of 35 is possible at each Stage and there are resit opportunities, with certain restrictions.

Weighting of stages
The marks from Stages 2 and 3 will contribute to the final classification of the degree
The weighting of marks contributing to the degree for Stages 2 and 3 is one-third / two-thirds.

Common Marking Scheme
The University employs a common marking scheme, which is specified in the Undergraduate

Examination Conventions, namely

	Honours	Non-honours
<40	Fail	Failing
40-49	Third Class	Basic
50-59	Second Class, Second Division	Good
60-69	Second Class, First Division	Very Good
70+	First Class	Excellent

Role of the External Examiner
Three External Examiners, all distinguished members of the Geography academic community, are appointed by Faculty Teaching and Learning Committee, after recommendation from the Board of Studies. The External Examiners are expected to:

- See and approve examination papers
- Moderate examination and coursework marking
- Attend the Board of Examiners
- Report to the University on the standards of the programme

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

The University Prospectus (see http://www.ncl.ac.uk/undergraduate/)

The School Brochure (contact enquiries@ncl.ac.uk)

The University Regulations (see http://www.ncl.ac.uk/calendar/university.regs/)

The Degree Programme Handbook

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. The accuracy of the information contained is reviewed by the University and may be checked by the Quality Assurance Agency for Higher Education.

Annex

Mapping of Intended Learning Outcomes onto Curriculum/Modules

		Intended Learning Outcomes			
Module	**Type**	**A**	**B**	**C**	**D**
GEO1005	**Core**	1,2,3,4,5,10	1,2,3,4,5	5	1,2,4,5,7
GEO1007	**Core**	1,2,3,4,5,6,7,8,9,10	1,2,3,4,5	5	1,2,4,5,6,7
GEO1010	**Core**	1,4,5,6,7,8,10	1,2,3,4,5	4,5	1,2,4,5,7
GEO1096	**Core**	1,2,3,4,5,6,7,8,9,10	1,2,3,4		1,2,4,5,6,7
GEO1011	**Core**		1,2,3,4,5	1,3,4	1,2,3,4,5,6,7
GEO1012	Optional	1,2,3,4	1,2,3,4,5	2,3,4	1,2,4,5,6,7
GEO2043	**Core**	1,4,9	1,2,3,4,5	1,4,5	2,3,4,5
GEO2044	**Core**	1,9	1,2,3,4,5	1-5	1,2,3,4,5,7
GEO2045	Optional	1,4,5,6,7,8,10	1,2,3,4,5	1-5	1,2,4,5, 7
GEO2105	Optional	1,2,3,4,5,10	1,2,3,4,5	1,2,3,4	1,2,3,4,5,6,7
GEO2103	Optional	1,4,5,6,7,8,10	1,2,3,4,5	1,4,5	1,2,4,5,6,7
GEO2104	Optional	1,4,5,6,7,8,10	1,2,3,4,5	1,2, 4,5	1,2,4,5,6,7
GEO2047	Optional	1,4-7,10	1,2,3,4,5	1,2,4	1,2,4,5,6,7
GEO2097	Optional	1,2,3,9	1,2,3,4,5	1,2,3,4	1,2,3,4,5.6,7
GEO2048	**Core**	1-3,9	1,2,3,4,5	1,2,3,4	1,2,3,4,5,6,7
GEO2051	Optional	1-3,9	1,2,3,4,5	1,2,3,4	1,2,3,4,5,6,7
GEO2099	Optional	1-3,9	1,2,3,4,5	1,2,3,4	1,2,3,4,5,6,7
GEO2037	Optional	1-3,9	1,2,3,4,5	1,2,3,4	1,2,3,4,5,6,7
GEO2052	Optional	1-3,9	1,2,3,4,5	1,2,3,4	1,2,3,4,5,6,7
GEO2042	Optional	1-3,9	1,2,3,4,5	1,2,3,4	1,2,3,4,5,6,7
GEO3099	**Compulsory**	1,2,3,4,5,6,7,8,9,10	1,2,3,4,5	1,2,3,4,5	1-5,7
GEO3060	Optional	1,2,3,4,5,6,7,8,9,10	1,2,3,4,5	4,5	1,2,3,4,5,6,7
GEO3115	Optional	1,2,3,4,5,6,7,8,9,10	1,2,3,4,5	4,5	1,2,3,4,5,6,7
GEO3041	Optional	1,4,5,6,7,8,10	1,2,3,4,5	4,5	1,2,4,5,6,7
GEO3103	Optional	1,4,5,6,7,8,10	1,2,3,4,5	4,5	1,2,4,5,6,7
GEO3102	Optional	1,4,5,6,7,10	1,2,3,4,5	4,5	1,2,4,5,7
GEO3063	Optional	1,4,5,6,7,10	1,2,3,4,5	1,2,4,5	1,2,4,5,6,7
GEO3114	Optional	1,4,5,9,10	1,2,3,4,5	4	1,2,3,4,5,6,7
GEO3069	Optional	1,2,3,10	1,2,3,4,5	2,3,4	1,2,3,4,5,6,7
GEO3073	Optional	1,2,3	1,2,3,4,5	4	1,2,3,4,5,6,7
GEO3070	Optional	1,2,3	1,2,3,4,5	4	1,2,3,4,5,6,7
GEO3071	Optional	1,2,3,10	1,2,3,4,5	4	1,2,3,4,5,6,7
GEO3012	Optional	1,2,3,10	1,2,3,4,5	2,4	1,2,3,4,5,6,7
GEO3064	Optional	1,2,3,10	1,2,3,4,5	2,3,4	1,2,3,4,5,6,7
GEO3110	Optional	1,2,3	1,2,3,4,5	2,3,4	1,2,3,4,5,6,7
GEO3065	Optional	1,4,5,6,	1,2,3,4,5	4,5	1,2,3,4,5,7
GEO3105	Optional	1,4,5,6,10	1,2,3,4,5	4,5	1,2,3,4,5,7
GEO3106	Optional	1,4,5,6,7,9,10	1,2,3,4,5	4,5	1,2,4,5,7
GPS3001	Optional	1,2,3,4,5,6,7,8,9,10	1,2,3,4,5	1,2,3,4,5	1-5,7
GPS3002	Optional	1,4,5,6,7,8	1,2,3,4,5	1,2,3,4,5	1-5,7