University of Lethbridge

Name: _____ **ID:** _____

Program Planning Guide

Current and past Program Planning Guides are available on the UofL website at www.uleth.ca/ross/ppgs/ppg.html

Calendar Year: 2010/2011

Faculty: Arts & Science

About the Department of Geography

The Department of Geography pursues excellence in teaching and research in the closely related areas of Geography, Geology, Archaeology, and Urban and Regional Studies, all of which deal with the human and natural environment, and spatial analysis. The Department of Geography also administers the multidisciplinary majors in Archaeology and Geography (B.A. and B.Sc.) and in Urban and Regional Studies (B.A.), and, with the Department of Mathematics and Computer Science, the multidisciplinary major in Computer Science and Geographical Information Science (B.Sc.).

About the Geography Major

The Department offers instruction leading to a Bachelor of Arts (B.A.) or a Bachelor of Science (B.Sc.) degree with a major in Geography. Students may also choose Geography as one of their majors for a BASc. degree. The Department also offers M.A., M.Sc., and Ph.D. degree programs in Geography and Archaeology.

Core Geography Courses

Building on its disciplinary strengths, the Department offers a set of core courses which are an essential introduction to the breadth of the discipline, and presents a variety of more advanced courses which represent the expertise of the faculty. Courses in Physical Geography and those involving geographical techniques are Science courses, while those in Human Geography are Social Science courses.

Archaeology 1000

Archaeology 1000, an introductory course required of all Geography majors, opens to more advanced courses falling within the two main themes of Old-World and New-World archaeology.

Geography Courses for Non-Majors

While the curriculum is geared mainly to Geography major programs, the Department is also committed to enhancing the study of Geography, Geology and Archaeology throughout the University, and to providing courses which fulfill the General Liberal Education Requirement. The introductory courses (Geography 1000, Geography 1200, Geography 2535, Archaeology 1000) are open to all students of the University, and two service courses are offered, without prerequisites, for students in other programs where a knowledge of world regional geography (Geography 2000) or the geography of Canada (Geography 2600) is required.

Concentration in Geographical Information Science

Geography majors in the B.A., B.Sc., and BASc. degree programs may declare a Concentration in Geographical Information Science (GIS). The GIS Concentration is also available to applicants choosing a major in Agricultural Studies (B.Sc. or Post-Diploma B.Sc. only), Archaeology and Geography, Environmental Science (B.Sc. only), or Urban and Regional Studies.

Career Opportunities

Professional occupations in Geographical Information Science are growing rapidly in Canada and around the world. There is an ever-increasing demand for skilled professionals with an advanced level of GIS education. Our Geographical Information Science program is designed to provide both the specialized problem-solving skills and broad spatial modelling background that are required for decision support in fields as diverse as environmental management, urban planning, infrastructure design and marketing. Geography majors graduating from the University of Lethbridge with a Concentration in Geographical Information Science have career possibilities in a number of exciting and dynamic occupations that specialize in marketing, environmental science, civil engineering consulting, forestry management or energy transmission, to name only a few. As a University of Lethbridge student you will have access to advanced technologies and research expertise, and gain practical skills using state-of-the-art software.

Bachelor of Science

Geography

High School Courses

Several university-level science courses have high school-level courses as recommended background or prerequisites. Students are advised to complete recommended background courses before registering in the university-level course; students must have successfully completed prerequisites before they may register in the university-level course. Students pursuing a Geography major should note the following recommended/required high school courses.

UofL Science course		*High School course*
Biochemistry	2300	Chemistry 30**
Biology	1010	Biology 30 and Chemistry 30**
	1020	*Recommended: Biology 30*
	2000	Mathematics 30-1 or Pure Mathematics 30* (and Biology 1010 and Biology 1020)
	2200	Mathematics 30-1 or Pure Mathematics 30* (and Biology 1010 and Biology 1020)
Chemistry	1000	Chemistry 30** and Mathematics 30-1 or Pure Mathematics 30*
		Recommended: Mathematics 31 and Physics 30
	1110	*Recommended: Chemistry 30** and Mathematics 30-1 or Pure Mathematics 30**
	2320	Chemistry 30**
Computer Science	1620	Mathematics 30-1 or Pure Mathematics 30*
	1820	Mathematics 30-1 or Pure Mathematics 30*
Mathematics	1410	Mathematics 30-1 or Pure Mathematics 30*
	1510	Mathematics 30-1 or Pure Mathematics 30*
	1560	Mathematics 30-1 or Pure Mathematics 30*
		*Recommended: Mathematics 31 and a blended grade of at least 75% in Mathematics 30-1 or Pure Mathematics 30**
Physics	1000	Physics 30, and Mathematics 30-1 or Pure Mathematics 30*
	1050	Mathematics 30-1 or Pure Mathematics 30*
		Recommended: One course in the physical sciences at the 20 level or above
	2130	Physics 30, and Mathematics 30-1 or Pure Mathematics 30*
Statistics	1770	Mathematics 30-1, Mathematics 30-2, or Pure Mathematics 30*

** Instead of Mathematics 30-1, Mathematics 30-2, or Pure Mathematics 30, students may use UofL's Mathematics 0500, or both Applied Mathematics 30 and a minimum grade of 75% in Athabasca University's Mathematics 101.*

*** Instead of Chemistry 30, students may use UofL's Chemistry 0500.*

Program Requirements

The B.Sc. degree with a major in Geography requires 40 semester courses, including a minimum of 23 courses (17 core plus six cognates) in the major. A maximum of 20 courses in Geography (including Geology) is allowed. The Department of Geography offers courses in Geography, Geology and Archaeology. For the B.Sc., you will emphasize Geography courses that are on the Science list (see List III: Science Courses, p. 87, in the 2010/2011 Calendar). Geography majors in the B.Sc. program may declare a Concentration in Geographical Information Science (please see page 4 of this program guide for details).

Transfer Credit

Remember that you may use both University of Lethbridge credit and credit transferred from another college or university to meet degree and major requirements. Transfer credit may be either specified or unspecified. Specified credit is indicated on your transcript by the subject name and the specific number of the course, e.g., Geography 1000, 2210, etc. Unspecified credit (1XXX, 2XXX, etc.) is indicated by the subject name and level of the course in parentheses, e.g., Geography (1000 level), Geography (2000 level), etc.

Unspecified Course Credit

Unspecified course credit means that the University of Lethbridge does not offer the same course you transferred in, but we recognize it and treat it as a regular course. An unspecified course would count as one of your maximum of 20 from one department, but it could not meet a specific course requirement. For example, if Geography 2700 is required in your program, you could not use Geography (2000 level) to fulfill that requirement. Students with unspecified transfer credit need to consult an Academic Advisor to establish how the transfer credit fits in the degree program. This should be done as soon as possible after transfer credit is awarded.

Bachelor of Science - Geography

Calendar Year - 2010/2011

Program Worksheet

Name: _____ **ID:** _____

_____ 1. Geography 1000 - Introduction to Physical Geography
_____ 2. Geography 1200 - Introduction to Human Geography
_____ 3. Geography 2030 - Geomorphology
_____ 4. Geography 2210 - Spatial Organization of Economic Activity
_____ 5. Geography 2300 - Weather and Climate
_____ 6. Geography 2700 - Geographical Data and Analysis
_____ 7. Geography 2735 - Introduction to Geographical Information Science
_____ 8. ONE of the following Field Courses:
- _____ Archaeology 3300 - Archaeological Field Work (Series)
- _____ Geography 3710 - Field Techniques in the Earth Sciences
- _____ Geography 3780 - Field School
- _____ Geography 4710 - Remote Sensing Field School

_____ 9-10. TWO of the following Geographical Techniques Courses:
- _____ Geography 3235 - Quantitative Models for Geographic Analysis
- _____ Geography 3700 - Cartography
- _____ Geography 3720 - Remote Sensing
- _____ Geography 3740 - Geographical Information Systems
- _____ Geography 3750 - GIS Applications in Human Geography
- _____ Geography 4730 - Spatial Statistics

_____ 11-13. THREE of the following Physical Geography Courses:
- _____ Geography 2090 - Biogeography
- _____ Geography 3035 - Fluvial Geomorphology
- _____ Geography 3060 - Glaciology and Glacial Geomorphology
- _____ Geography 3075 - Environmental Resources Management
- _____ Geography 3080 - Soils
- _____ Geography 3300 - Microclimatology
- _____ Geography 3400 - Hydrology I
- _____ Geology 2060 - Physical Geology

_____ 14-16. THREE of:
- _____ Geography 4060 - Agricultural Soil Management
- _____ Geography 4065 - Irrigation Science
- _____ Geography 4400 - Hydrology II
- _____ Geography 4415 - Integrated Watershed Management
- _____ Geography 4700 - Advanced Computer Mapping
- _____ Geography 4725 - Advanced Remote Sensing
- _____ Geography 4740 - Advanced Geographical Information Systems
- _____ Geography 4750 - Glacial Processes, Measurements, and Models

_____ 17. ONE of:
- _____ Geography 4030 - Series in Advanced Physical Geography
- _____ Geography 4751 - Seminar in Spatial Modelling
- _____ Geography 4752 - Seminar in Geographical Information Systems
- _____ Geography 4753 - Seminar in Remote Sensing
- _____ Geography 4900 - History and Theory of Geography

Required cognates

_____ 18. Archaeology 1000 - Introduction to Archaeology
_____ 19. Biology 1020 - Diversity of Life
_____ 20. Environmental Science 2000 - Fundamentals of Environmental Science
_____ 21. ONE of:
- _____ Chemistry 1000 - General Chemistry I
- _____ Physics 1000 - Introduction to Physics I

_____ 22. ONE of:
- _____ Mathematics 1410 - Elementary Linear Algebra
- _____ Mathematics 1560 - Calculus I
- _____ Statistics 1770 - Introduction to Probability and Statistics

_____ 23. One additional course (2000 level or higher) from the offerings in Astronomy, Biochemistry, Biology, Chemistry, Computer Science, Engineering, Mathematics, Statistics, or Physics

_____

Concentration: Geographical Information Science

Geography majors in the B.Sc. degree program may declare a Concentration in Geographical Information Science.

Required courses for the Concentration in Geographical Information Science include:

_____ 1. One additional course from the list in requirements 9-10, above (geographical techniques)

_____ 2-4. THREE of:

- _____ Geography 4400 - Hydrology II OR Geography 4415 - Integrated Watershed Management OR Geography 4750 - Glacial Processes, Measurements, and Models
- _____ Geography 4700 - Advanced Computer Mapping
- _____ Geography 4710 - Remote Sensing Field School
- _____ Geography 4725 - Advanced Remote Sensing
- _____ Geography 4740 - Advanced Geographical Information Systems
- _____ Geography 4751 - Seminar in Spatial Modelling
- _____ Geography 4752 - Seminar in Geographical Information Systems
- _____ Geography 4753 - Seminar in Remote Sensing

_____ 5. Required Cognate:

- _____ Computer Science 1620 - Fundamentals of Programming I

Note: *Students choosing to complete the Geographical Information Science Concentration in addition to the major in Geography for the B.Sc. may exceed the maximum departmental limit (i.e. 20 Geography courses) and may need to complete more than the minimum 40 courses for the B.Sc.*

Students may not double count Geography courses required for the Concentration in Geographical Information Science in fulfilling requirements for the major in Geography.

For students who complete all requirements, the Concentration in Geographical Information Science will be acknowledged on the official transcript.

Sample Sequencing Plan

Shown below is a sample sequence of courses for your degree. If you follow this plan, you should be able to graduate in four years, provided you complete five courses per semester. This is just one example of how you could complete your major and degree requirements; you may find that a different sequence works as well as this one.

Year 1, Fall	***Year 1, Spring***
Geography 1000	Geography 1200
Archaeology 1000 *(required cognate)*	Biology 1020 *(required cognate)*
Chemistry 1000 or Physics 1000 *(required cognate)*	Mathematics or Statistics cognate
GLER course	GLER course
GLER course	GLER course
Year 2, Fall	***Year 2, Spring***
Environmental Science 2000 *(required cognate)*	Geography 2210
Geography 2030	Geography 2300
Geography 2735	Geography 2700
GLER course	Additional science cognate[1]
Science elective	GLER course
Year 3, Fall	***Year 3, Spring***
Geographical Techniques course	Geographical Techniques course
Physical Geography course	Physical Geography course
Geography - Field course[2]	Geography 4000-level list course
Elective	Science elective
Elective	Elective
Year 4, Fall	***Year 4, Spring***
Physical Geography course	Geography 4000-level list course
Geography 4000-level list course	Geography 4000-level list course
Elective 3000/4000 level	Elective 3000/4000 level
Science elective	Science elective
Elective	Elective

[1] *Additional science cognate (2000 level or higher) must be chosen from offerings in Astronomy, Biochemistry, Biology, Chemistry, Computer Science, Engineering, Mathematics, Statistics, or Physics.*

[2] *Semester of offering may vary.*

Note: *Additional requirements for the Concentration in Geographical Information Science should be taken in place of 'Electives' in Years 3 and 4 as appropriate.*

Students considering entry to a graduate program in Geography are advised to complete Geography 4900. They should also complete a 4000-level Independent Study course in Geography in their final year.

Terms Used

GLER course: A course that could count toward the General Liberal Education Requirement. You may use courses in your major towards this 12-course requirement. See the 2010/2011 University of Lethbridge Calendar, Part 4 - Academic Regulations (p. 85) for complete information.

The Faculty of Arts and Science offers Liberal Education 1000 and 2000, specifically designed to introduce first-year students to the wide scope of human knowledge and teach essential university success skills, critical thinking, and integrative thinking (see the 2010/2011 University of Lethbridge Calendar, Part 14 - Courses, p. 306). LBED 1000 and 2000 may be used toward satisfying the GLER.

Elective: A course that you may choose freely from all those available and applicable to your program. Use courses inside or outside your major, bearing in mind any restrictions that may apply (e.g., a maximum of 20 courses from any one department).

Cognate: A course from a related discipline deemed to complement the chosen area of study and to encompass knowledge and skills essential to that area.