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

Bachelor of Science

Computer Science and Geographical Information Science

About the Multidisciplinary Major in Computer Science and Geographical Information Science

The Department of Geography and the Department of Mathematics and Computer Science offer instruction leading to the Multidisciplinary Major in Computer Science and Geographical Information Science. The program is structured to provide a firm theoretical, technical and applied background in the Geographical Information Sciences (GIS) that draws extensively on Computer Science foundations for their implementation. The synergy of the Multidisciplinary Major provides a strong basis for further study at the graduate level in an established field of research, while also providing training in an area of employment opportunity that neither the Department of Mathematics and Computer Science nor the Department of Geography alone can provide.

Co-operative Education

A Co-op option, requiring three work terms, is available. Students interested in the Co-operative Education/Internship program should contact the Coordinator of Co-operative Education in the Career Resources Centre (B610 | phone: 403-382-7154) for further information.

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 Computer Science and Geographical Information Science major should note the following recommended/required high school courses.

UofL Science course		*High School course*
Computer Science	1620	Pure Mathematics 30*
	1820	Pure Mathematics 30*
Statistics	1770	Pure Mathematics 30*

** Instead of 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.*

Program Requirements

The B.Sc. degree with a multidisciplinary major in Computer Science and Geographical Information Science requires 40 courses, including 22 courses in the major: nine Computer Science courses, nine Geography courses, and four courses selected from List A (see p. 3).

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., Computer Science 1620, Geography 1000, etc. Unspecified credit (1XXX, 2XXX, etc.) is indicated by the subject name and level of the course in parentheses, e.g., Computer Science (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 Computer Science 2620 is required in your program, you could not use Computer Science (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.

Program Worksheet

Name: _____ **ID:** _____

Nine required Computer Science courses:

_____ 1. Computer Science 1620 - Fundamentals of Programming I

_____ 2. Computer Science 1820 - Discrete Structures

_____ 3. Computer Science 2620 - Fundamentals of Programming II

_____ 4. Computer Science 2720 - Practical Software Development

_____ 5. Computer Science 3620 - Data Structures and Algorithms

_____ 6. Computer Science 3660 - Introduction to Database Systems

_____ 7. Computer Science 3710 - Computer Graphics

_____ 8. Computer Science 4660 - Database Management Systems

_____ 9. ONE regularly offered 4000-level Computer Science course (excluding Computer Science 4850 - Topics in Computer Science, Computer Science 4980 - Applied Studies, and Computer Science 4990 - Independent Study):

_____

Nine required Geography courses:

_____ 10. Geography 1000 - Introduction to Physical Geography

_____ 11. Geography 1200 - Introduction to Human Geography

_____ 12. Geography 2700 - Geographical Data and Analysis

_____ 13. Geography 2735 - Introduction to Geographical Information Science

_____ 14. Geography 3740 - Geographical Information Systems

_____ 15. ONE of:

- _____ Geography 3700 - Cartography
- _____ Geography 3720 - Remote Sensing

_____ 16-18. 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

____ 19-22. List A: FOUR courses chosen from among the following:

- ____ Any of the courses listed above but not already selected as required courses
- ____ Computer Science 2610 - Introduction to Digital Systems
- ____ Computer Science 3720 - Introduction to Software Engineering
- ____ * Computer Science 3740 - Programming Languages
- ____ Computer Science 3750 - Artificial Intelligence
- ____ Computer Science 3770 - Human-Computer Interaction
- ____ Computer Science 3780 - Data Communications and Networking
- ____ Geography 2030 - Geomorphology
- ____ Geography 2300 - Weather and Climate
- ____ Geography 3400 - Hydrology I
- ____ Geography 3710 - Field Techniques in the Earth Sciences
- ____ Geography 3750 - GIS Applications in Human Geography
- ____ Geography 4730 - Spatial Statistics
- ____ ** Statistics 2780 - Statistical Inference

**Prerequisite required: Mathematics 2000.*

***Prerequisite required: Statistics 1770.*

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***
Computer Science 1620	Computer Science 2620
Computer Science 1820	Geography 1200
Geography 1000	Geography 2735
GLER course	GLER course
GLER course	GLER course
Year 2, Fall	***Year 2, Spring***
Computer Science 2720	Computer Science 3710
Computer Science 3620	Geography 3740
Geography 2700	GLER course
GLER course	Science elective
GLER course	Elective
Year 3, Fall	***Year 3, Spring***
Geography 3700 or Geography 3720	Computer Science 3660
List A course	Geography 4000-level list course
Science elective	List A course
Elective	Science elective
Elective	Elective
Year 4, Fall	***Year 4, Spring***
Computer Science 4660	Computer Science 4000 level
Geography 4000-level list course	Geography 4000-level list course
List A course	List A course
Science elective	Elective
Elective	Elective

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).

www.ulethbridge.ca

artsci.advising@uleth.ca
(403) 329-5106

University of Lethbridge
Registrar's Office and Student Services
4401 University Drive
Lethbridge, Alberta T1K 3M4