University of
Lethbridge

Faculty of Arts & Science

Program Planning Guide

Departments: Geography, and Mathematics and Computer Science

Calendar Year: 2013/2014

Name:_____

ID: _____

Major in Computer Science and GIS:
www.uleth.ca/artsci/gis

Faculty of Arts and Science Student Program Services:
www.uleth.ca/artsci/advising
artsci.advising@uleth.ca
(403) 329-5106
SU060

Current and Past Program Planning Guides:
www.uleth.ca/ross/ppgs

Academic Calendar:
www.uleth.ca/ross/academic-calendar

Co-operative Education:
www.uleth.ca/artsci/coop

Bachelor of Science - Computer Science and GIS

N a m e : _____   **I D :** _____

B.Sc. Computer Science and GIS

Completion of at least 40 courses (120.0 credit hours) with a grade point average of at least 2.00.

Major Requirements (22 courses)

- _____ Computer Science 1620 - Fundamentals of Programming I
- _____ Computer Science 1820 - Discrete Structures
- _____ Computer Science 2620 - Fundamentals of Programming II
- _____ Computer Science 2720 - Practical Software Development
- _____ Computer Science 3620 - Data Structures and Algorithms
- _____ Computer Science 3660 - Introduction to Database Systems
- _____ Computer Science 3710 - Computer Graphics
- _____ Computer Science 4660 - Database Management Systems
- _____ Geography 1000 - Introduction to Physical Geography
- _____ Geography 1200 - Introduction to Human Geography
- _____ Geography 2700 - Geographical Data and Analysis
- _____ Geography 2735 - Introduction to Geographical Information Science
- _____ Geography 3720 - Remote Sensing
- _____ Geography 3740 - Geographical Information Systems
- _____ Geography 4725 - Advanced Remote Sensing
- _____ Geography 4740 - Advanced Geographical Information Systems

One of:

- _____ Geography 4400 - Hydrology II
- _____ Geography 4415 - Integrated Watershed Management
- _____ Geography 4700 - Advanced Computer Mapping
- _____ Geography 4710 - Remote Sensing Field Techniques
- _____ Geography 4750 - Glacial Processes, Measurements, and Models
- _____ Geography 4751 - Project in Spatial Modelling
- _____ Geography 4753 - Seminar in Remote Sensing

Four of:

- _____ 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
- _____ [1]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 3700 - Cartography
- _____ Geography 3710 - Field Techniques in the Earth Sciences
- _____ Geography 3750 - GIS Applications in Human Geography
- _____ Geography 4730 - Spatial Statistics
- _____ [2]Statistics 2780 - Statistical Inference

One course (3.0 credit hours) in Computer Science at the 4000 level, excluding Computer Science 4850 (Topics), Computer Science 4980 (Applied Studies), and Computer Science 4990 (Independent Study)

_____

Other Courses (minimum 18 courses)

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____

Notes

[1]*Prerequisite required: Mathematics 2000.*

[2]*Prerequisite required: Statistics 1770.*

See also:
- Bachelor of Science - Computer Science
- Bachelor of Science - Geography

Completion of the General Liberal Education Requirement (GLER).
Only four courses (12.0 credit hours) in total may be counted from all courses offered by a single department. See the 2013/2014 Calendar, p. 88, for more information.

LIST I: Fine Arts and Humanities Courses

1. _____   3. _____

2. _____   4. _____

LIST II: Social Science Courses

1. _____   3. _____

2. _____   4. _____

LIST III: Science Courses

1. _____   3. _____

2. _____   4. _____

Not more than 12 courses (36.0 credit hours) may be completed at the 1000 level (or lower) [0500 - 1999] for credit towards the degree, excluding Activity courses (labelled PHAC and MUSE).

1. _____   7. _____

2. _____   8. _____

3. _____   9. _____

4. _____   10. _____

5. _____   11. _____

6. _____   12. _____

Completion of at least 15 courses (45.0 credit hours) from disciplines offered by the Faculty of Arts and Science or the Faculty of Fine Arts at the 3000/4000 level, excluding Activity courses (labelled PHAC and MUSE).

1. _____   9. _____

2. _____   10. _____

3. _____   11. _____

4. _____   12. _____

5. _____   13. _____

6. _____   14. _____

7. _____   15. _____

8. _____

_____ Not more than five Independent Study courses (15.0 credit hours) may be completed for credit towards the degree.

_____ Not more than five Disciplinary Credit Applied Studies courses (15.0 credit hours) may be completed for credit towards the degree. Students may, in addition, complete Applied Studies 2000, 2001, 2010, and 2011.

_____ Not more than 24 courses (72.0 credit hours) may be completed from any one discipline for credit towards the degree.
Note: *Disciplines are identified by a specific course label (e.g. KNES, ASTR, and HIST are separate disciplines).*

_____ Not more than four Activity courses (i.e. courses labelled PHAC and MUSE; maximum 6.0 credit hours) may be completed for credit towards the degree, except for Kinesiology majors (not more than 10 Activity courses; 15.0 credit hours) and Music majors (not more than 8 Activity courses; 12.0 credit hours).

_____ Not more than four courses (12.0 credit hours) from disciplines offered outside the Faculty of Arts and Science or the Faculty of Fine Arts may be completed for credit towards the degree (i.e. labelled CDEV, CRED, EDUC, HLSC, MGT, NURS, and PUBH). Courses cross-listed between the Faculty of Arts and Science and another Faculty do not count towards this limit.

_____ Residence requirement:
Degree: at least 20 courses (60.0 credit hours) must be completed at the University of Lethbridge, including the last 10 courses (30.0 credit hours) completed for credit towards the degree.
Major: at least half of the courses required in the major must be completed at the University of Lethbridge.

Minor (Optional): _____
See the 2013/2014 Calendar, p. 143, for eligible minors.

1. _____   4. _____

2. _____   5. _____

3. _____   6. _____

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	Elective
GLER course	Elective

Year 3, Fall	*Year 3, Spring*
Geography 3720	Computer Science 3660
Computer Science or Geography list course	Computer Science or Geography list course
Computer Science or Geography list course 3000/4000 level	Computer Science or Geography list course 3000/4000 level
Elective	Elective 3000/4000 level
Elective	Elective

Year 4, Fall	*Year 4, Spring*
Computer Science 4660	Computer Science 4000 level
Geography 4725	Geography 4000-level list course
Geography 4740	Elective 3000/4000 level
Elective 3000/4000 level	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 2013/2014 University of Lethbridge Calendar, Part 4 - Academic Regulations (p. 88) 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 2013/2014 University of Lethbridge Calendar, Part 14 - Courses, p. 307). 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 24 courses from any one discipline).