

University of
Lethbridge



Faculty of Arts & Science

Program Planning Guide

Departments: Geography, and Mathematics and Computer Science

Calendar Year: 2014/2015

Name: _____

ID: _____

Bachelor of Science
Computer Science and Geographical
Information Science

Major in Computer Science and GIS:

www.uleth.ca/artsci/gis

Academic Calendar:

www.uleth.ca/ross/academic-calendar

High School Prerequisites by Course:

www.uleth.ca/ross/hs_prereqs/course

Current and Past Program Planning Guides:

www.uleth.ca/ross/ppgs

Faculty of Arts and Science Student Program Services:

www.uleth.ca/artsci/advising
artsci.advising@uleth.ca
(403) 329-5106
SU060

Co-operative Education:

www.uleth.ca/artsci/coop

This is a planning guide and not a graduation check or guarantee of course offerings. You should have a program check done in your final year of studies. Students are responsible for the accuracy of their own programs. The guide should be used in conjunction with the University of Lethbridge Calendar, which is the final authority on all questions regarding program requirements and academic regulations. Contact an Academic Advisor in the Faculty of Arts and Science for advising information.

Name : _____

ID : _____

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

Other Courses (minimum 18 courses)

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

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
- ___¹Computer 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
- ___²Statistics 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)

Notes

¹Prerequisite required: *Mathematics 2000.*

²Prerequisite 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 2014/2015 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. _____ (max.) |

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. _____ (min.) |
| 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 six credit hours in Activity courses (i.e. courses labelled PHAC and MUSE) may be completed for credit towards the degree, except for Kinesiology majors (not more than 15.0 credit hours) and Music majors (not more than 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 ADCS, 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 2014/2015 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

Computer Science 1620
Computer Science 1820
Geography 1000
GLER course
GLER course

Year 2, Fall

Computer Science 2720
Computer Science 3620
Geography 2700
GLER course
GLER course

Year 3, Fall

Geography 3720
Computer Science or Geography
list course
Computer Science or Geography
list course 3000/4000 level
Elective
Elective

Year 4, Fall

Computer Science 4660
Geography 4725
Geography 4740
Elective 3000/4000 level
Elective

Year 1, Spring

Computer Science 2620
Geography 1200
Geography 2735
GLER course
GLER course

Year 2, Spring

Computer Science 3710
Geography 3740
GLER course
Elective
Elective

Year 3, Spring

Computer Science 3660
Computer Science or Geography
list course
Computer Science or Geography
list course 3000/4000 level
Elective 3000/4000 level
Elective

Year 4, Spring

Computer Science 4000 level
Geography 4000-level list course
Elective 3000/4000 level
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 2014/2015 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 2014/2015 University of Lethbridge Calendar, Part 14 - Courses, p. 315). 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).