

University of
Lethbridge



Program Planning Guide

Name: _____

ID: _____

Calendar Year: 2022/2023

Major in Computer Science and Geographical Information Science:

www.ulethbridge.ca/artsci/gis

Academic Calendar:

www.ulethbridge.ca/ross/academic-calendar

High School Admission Requirements:

www.ulethbridge.ca/ross/admissions/undergrad/high-school

Current and Past Program Planning Guides:

www.ulethbridge.ca/ross/ppgs

Co-operative Education:

www.ulethbridge.ca/career-bridge/co-operative-education

Faculty of Arts and Science Advising:

www.ulethbridge.ca/artsci/advising
artsci.advising@uleth.ca
403-329-5106
M2102

Computer Science and Geographical Information Science

Bachelor of Science

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 (www.ulethbridge.ca/ross/academic-advising) for advising information.

Name : _____

ID : _____

Program Requirements

Completion of at least 40 courses (120.0 credit hours) with cumulative and graduation grade point averages 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 - Advanced Hydrology
- _____ Geography 4700 - Advanced Digital Mapping
- _____ Geography 4710 - Remote Sensing Field Techniques
- _____ Geography 4751 - 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
- _____ Geography 3700 - Mapping in the Cloud
- _____ 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)

1. _____

Other Courses (minimum 18 courses)

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

Notes

- ¹Prerequisite required: Mathematics 2000.
- ²Prerequisite required: Statistics 1770.

Completion of the Liberal Education List Requirement (Lib Ed Requirement)

Only four courses (12.0 credit hours) in total may be counted from any one discipline toward the Lib Ed Requirement. Disciplines are identified by separate course subject codes.

Only four courses (12.0 credit hours) in total from the Faculty of Education (EDUC), Faculty of Health Sciences (ABHL, ADCS, HLSC, NURS, PUBH, and TREC), and the Dhillon School of Business (ACCT, AGEM, FINC, HRLR, IGBM, IMGT, MGT, and MKTG) may be counted towards the Lib Ed Requirement.

See the 2022/2023 Calendar, p. 81, for more information.

_____ Four Fine Arts and Humanities courses:

1. _____
2. _____
3. _____
4. _____

_____ Four Social Science courses:

1. _____
2. _____
3. _____
4. _____

_____ Four Science courses:

1. _____
2. _____
3. _____
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) and courses numbered in the range of 0520 to 0530.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____

Completion of at least 15 courses (45.0 credit hours) from disciplines offered by the Faculty of Arts and Science, Faculty of Fine Arts, or the School of Liberal Education at the 3000/4000 level, excluding Activity courses (labelled PHAC and MUSE). Out-of-faculty courses (i.e. labelled ABHL, ACCT, ADCS, AGEM, CDEV, CRED, EDUC, FINC, HLSC, HRLR, IGBM, IMGT, MGT, MKTG, NURS, PUBH, and TREC) will not meet this requirement.

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

_____ 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.

_____ 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 six courses (18.0 credit hours) from disciplines outside the Faculty of Arts and Science, Faculty of Fine Arts, or School of Liberal Education may be completed for credit towards the degree (i.e. labelled ABHL, ACCT, ADCS, AGEM, CDEV, CRED, EDUC, FINC, HLSC, HRLR, IGBM, IMGT, MGT, MKTG, NURS, PUBH, and TREC). Courses cross-listed between the Faculty of Arts and Science and another Faculty do not count towards this limit.

_____ Residence requirement:

Degree: a minimum of 20 courses (60.0 credit hours) must be completed at the University of Lethbridge, including at least 10 courses (30.0 credit hours) from disciplines offered by the Faculty of Arts and Science, Faculty of Fine Arts, or School of Liberal Education at the 3000/4000 level.

Major: at least half of the courses required in the major must be completed at the University of Lethbridge.

*Disciplines are identified by a specific course label (e.g. KNES, ASTR, and HIST are separate disciplines).

_____ **Minor (Optional):** _____

See the 2022/2023 Calendar, p. 323, for more information.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Sample Sequencing Plan

Shown below is a sample sequence of courses for your degree. Consult timetables for course offerings, prerequisites, and corequisites before registering each term. 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
 Lib Ed Requirement course
 Lib Ed Requirement course

Year 2, Fall

Computer Science 2720¹
 Computer Science 3620
 Geography 2700
 Lib Ed Requirement course
 Lib Ed Requirement course

Year 3, Fall

Computer Science 3660²
 Geography 3720
 Geography 3740
 Computer Science or Geography list course 3000/4000 level
 Elective

Year 4, Fall

Computer Science 4660²
 Computer Science 4000 level
 Geography 4000-level list course
 Elective 3000/4000 level
 Elective

Year 1, Spring

Computer Science 2620
 Geography 1200
Geography 2735
 Lib Ed Requirement course
 Lib Ed Requirement course

Year 2, Spring

Computer Science 3710²
 Computer Science or Geography list course
 Lib Ed Requirement course
 Elective
 Elective

Year 3, Spring

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

Year 4, Spring

Geography 4725
 Geography 4740²
 Elective 3000/4000 level
 Elective
 Elective

¹ Computer Science 2720 may be completed Year 2, Spring.

² Term of offering may vary.

Note: Courses in **bold** in Years 1 and 2 of the sample sequence are prerequisite(s) for required courses and should be completed early in your program. Students are advised to review the prerequisites for elective courses within the major and plan accordingly.