



PROGRAM PLANNING GUIDE

Name: _____

ID:

Bachelor of Science

Computer Science



Computer science is the study of algorithms and data structures and their applications in designing new and efficient solutions to industrial, technological, environmental or social problems. Learn to tackle difficult problems using a variety of high-tech tools and approaches, and effectively communicate your expertise to others by coupling your technical learning with a solid grounding in liberal education. You'll gain both theoretical knowledge and practical experience, including access to state-of-the-art hardware and software in our three computer labs whenever you need to use them.

What determines my program requirements?

Please refer to the Academic Calendar (www.ulethbridge.ca/ross/academic-calendar) for complete program information.

Calendar Year: 2025/2026 - Your calendar year is set to the academic year you are admitted (or readmitted) and you should follow the requirements for that year for the duration of your program.

Faculty/School: Faculty of Arts and Science (www.ulethbridge.ca/artsci)

Program(s): Bachelor of Science

Major(s): Computer Science

Minor: A defined set of courses, designed to provide depth in a particular discipline, study in an interdisciplinary area, or focus on a theme-related topic. To learn more about optional minors see www.ulethbridge.ca/ross/minors.

Am I admissible to this program?

Admission: www.ulethbridge.ca/ross/admissions/undergrad

Transfer: www.ulethbridge.ca/ross/transfer-resources

When/How do I apply to the University?

Deadlines: www.ulethbridge.ca/ross/admissions/undergrad/deadlines

Step-by-Step: www.ulethbridge.ca/ross/admissions/step-by-step

Where can I find information on courses?

Course Catalogue: www.ulethbridge.ca/ross/courses

Registration Guide: www.ulethbridge.ca/ross/registration-guide

When can I register for classes?

Register early! (March for Summer and Fall; November for Winter)

Registration Dates: www.ulethbridge.ca/ross/registration-dates

How can I enhance my program?

Career Bridge: www.ulethbridge.ca/career-bridge

Co-op Education: www.ulethbridge.ca/career-bridge/co-operative-education

Honours Thesis: www.ulethbridge.ca/ross/undergraduate-thesis

Double Major: www.ulethbridge.ca/ross/double-major

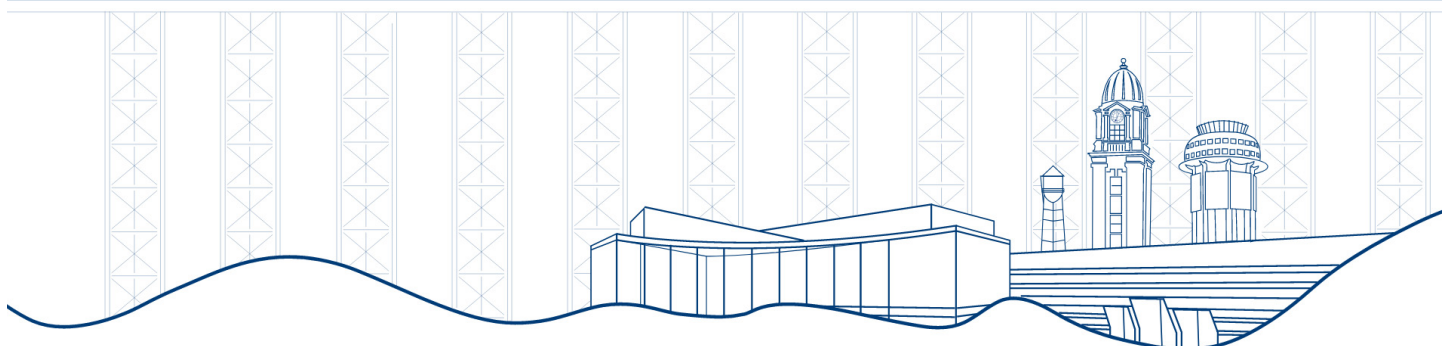
What supports are available to students?

Student Services: www.ulethbridge.ca/campus-life/student-services

Student Success Centre: www.ulethbridge.ca/student-success-centre

Accessible Learning: www.ulethbridge.ca/ross/alc

Counselling Services: www.ulethbridge.ca/counselling





Required courses and notes

Major Requirements (18 Courses)

- _____ 1. Computer Science 1620 - Fundamentals of Programming I
- _____ 2. Computer Science 1820 - Discrete Structures
- _____ 3. Computer Science 2610 - Introduction to Digital Systems
- _____ 4. Computer Science 2620 - Fundamentals of Programming II
- _____ 5. Computer Science 2720 - Practical Software Development
- _____ 6. Computer Science 3615 - Computer Architecture
- _____ 7. Computer Science 3620 - Data Structures and Algorithms
- _____ 8. Computer Science 3740 - Programming Languages
- _____ 9. Mathematics 2000 - Mathematical Concepts
- _____ 10. **One of:**
 - _____ Mathematics 1410 - Elementary Linear Algebra
 - _____ Mathematics 1510 - Calculus for Management and Social Sciences
 - _____ Mathematics 1560 - Calculus I
 - _____ Mathematics 1565 - Accelerated Calculus I
 - _____ Statistics 1770 - Introduction to Probability and Statistics
- _____ 11.-16.¹ Six additional courses (18.0 credit hours) in Computer Science at the 3000/4000 level
 - _____ 11. _____
 - _____ 12. _____
 - _____ 13. _____
 - _____ 14. _____
 - _____ 15. _____
 - _____ 16. _____
- _____ 17.-18. Two courses (6.0 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)
 - _____ 17. _____
 - _____ 18. _____

Notes

¹ One of the six additional 3000/4000-level courses may be replaced by a course from the following list:
 Physics 3900 - Intermediate Experimental Physics (Series) (Digital Electronics)
 Any 3000/4000-level Mathematics course

It is strongly recommended that Computer Science majors include additional Mathematics courses in their program. Students intending to take Physics 3900 should plan carefully to include the appropriate Mathematics and Physics prerequisites in their programs.

Some senior courses are scheduled for alternate years. Since these courses are frequently sequential and dependent upon adequate preparation, students are urged to seek advice before the end of their third term in planning a major and selecting courses.

It is strongly recommended that a student attain a grade of 'C' or higher in any course used to satisfy prerequisites for courses in Computer Science and Mathematics.

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Electives (22 Courses)

- _____ 19.-40. Twenty-two additional courses (66.0 credit hours) chosen to complete program requirements
 - _____ 19. _____
 - _____ 20. _____
 - _____ 21. _____
 - _____ 22. _____
 - _____ 23. _____
 - _____ 24. _____
 - _____ 25. _____
 - _____ 26. _____
 - _____ 27. _____
 - _____ 28. _____
 - _____ 29. _____
 - _____ 30. _____
 - _____ 31. _____
 - _____ 32. _____
 - _____ 33. _____
 - _____ 34. _____
 - _____ 35. _____
 - _____ 36. _____
 - _____ 37. _____
 - _____ 38. _____
 - _____ 39. _____
 - _____ 40. _____



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Liberal Education List 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. Cross-listed courses count toward the limit for both disciplines (e.g. IGBM 3250/INDG 3250 counts toward the limit for Dhillon School of Business courses and Indigenous Studies).

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

To determine if a course has a Liberal Education designation, see School of Liberal Education in the 2025/2026 University of Lethbridge Undergraduate Calendar, www.ulethbridge.ca/ross/academic-calendar.

_____ **1.-4. List I: Fine Arts and Humanities**

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

_____ **5.-8. List II: Social Science**

- _____ 5. _____
- _____ 6. _____
- _____ 7. _____
- _____ 8. _____

_____ **9.-12. List III: Science**

- _____ 9. _____
- _____ 10. _____
- _____ 11. _____
- _____ 12. _____

General Requirements

- _____ A minimum of 40 courses (120.0 credit hours) with a GPA of at least 2.00.
- _____ A maximum of five Independent Study courses (15.0 credit hours) may be completed for credit towards the degree.
- _____ A maximum of 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.
- _____ A maximum of 24 courses (72.0 credit hours) may be completed from any one discipline for credit towards the degree. Disciplines are identified by a specific course label (e.g. KNES, ASTR, and HIST are separate disciplines).
- _____ A maximum of 6.0 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).
- _____ A maximum of six courses (18.0 credit hours) from disciplines offered 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 ACCT, ADCS, AGEM, CDEV, CRED, EDUC, FINC, GLBU, HLSC, HRLR, IGBM, INHL, MGT, MKTG, NURS, PUBH, and TREC). Courses cross-listed between the Faculty of Arts and Science and another Faculty or School do not count towards this limit.
- _____ Residence requirement: 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. At least half of the courses required in the major must be completed at the University of Lethbridge.

A **maximum** of 12 courses (36.0 credit hours) may be completed at the 1000 level (or lower) for credit towards the degree, excluding Activity courses (labelled PHAC and MUSE) and courses numbered in the range of 0520 to 0530.

_____ **1.-12. Introductory Course Limit**

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

A **minimum** of 15 courses (45.0 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, excluding Activity courses (labelled PHAC and MUSE). Out-of-faculty courses (i.e. labelled ACCT, ADCS, AGEM, CDEV, CRED, EDUC, FINC, GLBU, HLSC, HRLR, IGBM, INHL, MGT, MKTG, NURS, PUBH, and TREC) will not meet this requirement.

_____ **1.-15. Senior Course Requirement**

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

Optional Minor:

For information about minors see **Minors** in the 2025/2026 University of Lethbridge Calendar, www.ulethbridge.ca/ross/academic-calendar. Consult with an Academic Advisor if you wish to add a minor to your program.

_____ **1.-6. Required Courses**

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



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Shown below is the recommended sequence of courses for your degree. Consult timetables for course offerings, prerequisites, and corequisites before registering each term as some courses may have limited offerings (ie. once a year, alternating years, or only offered in the Fall or Winter terms).

Consult with an Academic Advisor in your faculty if you wish to alter this sequence with regard to the specifically listed courses.

Note that this sequence was prepared based on course scheduling at the time of publication and may change during your studies.

First Year

- Computer Science 1620**
- Computer Science 1820**
- Computer Science 2620**
- Mathematics 2000**
- Mathematics or Statistics list course
- Lib Ed Requirement course
- Lib Ed Requirement course
- Lib Ed Requirement course
- Lib Ed Requirement course
- Lib Ed Requirement course

Second Year

- Computer Science 2610**
- Computer Science 2720
- Computer Science 3620
- Lib Ed Requirement course
- Lib Ed Requirement course
- Lib Ed Requirement course
- Elective (*Mathematics or Statistics recommended*)
- Elective
- Elective
- Elective

Third Year

- Computer Science 3615
- Computer Science 3740
- Computer Science 3000/4000 level
- Computer Science 3000/4000 level
- Computer Science 3000/4000 level
- Computer Science 3000/4000 level
- Elective 3000/4000 level
- Elective
- Elective
- Elective

Fourth Year

- Computer Science 3000/4000 level
- Computer Science 3000/4000 level
- Computer Science 4000 level
- Computer Science 4000 level
- Elective 3000/4000 level
- Elective 3000/4000 level
- Elective 3000/4000 level
- Elective
- Elective
- Elective

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.

Students are strongly advised to consult with the Department of Chemistry and Biochemistry regarding the sequencing of the above courses for Years 3 and 4. Many 3000-level courses are offered in alternate years.