

University of  
Lethbridge



## Program Planning Guide

Name: \_\_\_\_\_

ID: \_\_\_\_\_

Calendar Year: 2023/2024

### Major in Computer Science:

[www.ulethbridge.ca/artsci/math-computer-science](http://www.ulethbridge.ca/artsci/math-computer-science)

### Academic Calendar:

[www.ulethbridge.ca/ross/academic-calendar](http://www.ulethbridge.ca/ross/academic-calendar)

### High School Admission Requirements:

[www.ulethbridge.ca/ross/admissions/undergrad/high-school](http://www.ulethbridge.ca/ross/admissions/undergrad/high-school)

### Current and Past Program Planning Guides:

[www.ulethbridge.ca/ross/ppgs](http://www.ulethbridge.ca/ross/ppgs)

### Co-operative Education:

[www.ulethbridge.ca/career-bridge/co-operative-education](http://www.ulethbridge.ca/career-bridge/co-operative-education)

### Faculty of Arts and Science Advising:

[www.ulethbridge.ca/artsci/advising](http://www.ulethbridge.ca/artsci/advising)  
artsci.advising@uleth.ca  
403-329-5106  
M2102

**Bachelor of Science**  
**Computer 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](http://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 (18 courses)**

- \_\_\_\_\_ Computer Science 1620 - Fundamentals of Programming I
- \_\_\_\_\_ Computer Science 1820 - Discrete Structures
- \_\_\_\_\_ Computer Science 2610 - Introduction to Digital Systems
- \_\_\_\_\_ Computer Science 2620 - Fundamentals of Programming II
- \_\_\_\_\_ Computer Science 2720 - Practical Software Development
- \_\_\_\_\_ Computer Science 3615 - Computer Architecture
- \_\_\_\_\_ Computer Science 3620 - Data Structures and Algorithms
- \_\_\_\_\_ Computer Science 3740 - Programming Languages
- \_\_\_\_\_ Mathematics 2000 - Mathematical Concepts

**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

\_\_\_\_\_ <sup>1</sup> Six additional courses (18.0 credit hours) in Computer Science at the 3000/4000 level

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_
- 4. \_\_\_\_\_
- 5. \_\_\_\_\_
- 6. \_\_\_\_\_

\_\_\_\_\_ 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)

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_

**Other Courses (minimum 22 courses)**

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_
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- 5. \_\_\_\_\_
- 6. \_\_\_\_\_
- 7. \_\_\_\_\_
- 8. \_\_\_\_\_
- 9. \_\_\_\_\_
- 10. \_\_\_\_\_
- 11. \_\_\_\_\_
- 12. \_\_\_\_\_
- 13. \_\_\_\_\_
- 14. \_\_\_\_\_
- 15. \_\_\_\_\_
- 16. \_\_\_\_\_
- 17. \_\_\_\_\_
- 18. \_\_\_\_\_
- 19. \_\_\_\_\_
- 20. \_\_\_\_\_
- 21. \_\_\_\_\_
- 22. \_\_\_\_\_

**Notes**

<sup>1</sup> 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.

**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 2023/2024 Calendar, p. 83, 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.

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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.

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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 2023/2024 Calendar, p. 331, 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  
 Lib Ed Requirement course  
 Lib Ed Requirement course  
 Lib Ed Requirement course

**Year 2, Fall**

Computer Science 2610 <sup>1</sup>  
 Computer Science 2720<sup>2</sup>  
 Lib Ed Requirement course  
 Lib Ed Requirement course  
 Elective (*Mathematics or Statistics recommended*)

**Year 3, Fall**

Computer Science 3615 <sup>3</sup>  
 Computer Science 3740 <sup>3</sup>  
 Computer Science 3000/4000 level  
 Elective  
 Elective

**Year 4, Fall**

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

**Year 1, Spring**

Computer Science 2620  
 Mathematics 2000  
 Mathematics or Statistics list course  
 Lib Ed Requirement course  
 Lib Ed Requirement course

**Year 2, Spring**

Computer Science 3620  
 Computer Science 3000/4000 level  
 Lib Ed Requirement course  
 Elective  
 Elective

**Year 3, Spring**

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

**Year 4, Spring**

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

<sup>1</sup> Computer Science 2610 may be completed in Year 1, Spring or Year 2, Spring.

<sup>2</sup> Computer Science 2720 may be completed in Year 2, Spring.

<sup>3</sup> 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.

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.