

University of  
Lethbridge



Faculty of Arts & Science

## Program Planning Guide

**Department:** Mathematics and Computer Science

**Calendar Year:** 2014/2015

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

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

**Bachelor of Science**  
**Computer Science**

**Major in Computer Science:**

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

**Academic Calendar:**

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

**High School Prerequisites by Course:**

[www.uleth.ca/ross/hs\\_prereqs/course](http://www.uleth.ca/ross/hs_prereqs/course)

**Current and Past Program Planning Guides:**

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

**Faculty of Arts and Science Student Program Services:**

[www.uleth.ca/artsci/advising](http://www.uleth.ca/artsci/advising)  
[artsci.advising@uleth.ca](mailto:artsci.advising@uleth.ca)  
(403) 329-5106  
SU060

**Co-operative Education:**

[www.uleth.ca/artsci/coop](http://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**

Completion of at least 40 courses (120.0 credit hours) with a grade point average 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
- \_\_\_ 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. _____ | 4. _____ |
| 2. _____ | 5. _____ |
| 3. _____ | 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. _____  | 12. _____ |
| 2. _____  | 13. _____ |
| 3. _____  | 14. _____ |
| 4. _____  | 15. _____ |
| 5. _____  | 16. _____ |
| 6. _____  | 17. _____ |
| 7. _____  | 18. _____ |
| 8. _____  | 19. _____ |
| 9. _____  | 20. _____ |
| 10. _____ | 21. _____ |
| 11. _____ | 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 semester 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.

See also:

- Bachelor of Science - Computer Science and Geographical Information Science
- Bachelor of Science/Bachelor of Management - Computer Science
- Bachelor of Science - Mathematics

**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.

<p><b>Year 1, Fall</b>                      Computer Science 1620                      Computer Science 1820                      GLER course                      GLER course                      GLER course</p>	<p><b>Year 1, Spring</b>                      Computer Science 2620                      Mathematics 2000                      Mathematics or Statistics list                      course                      GLER course                      GLER course</p>
<p><b>Year 2, Fall</b>                      Computer Science 2610                      Computer Science 2720                      GLER course                      GLER course                      Elective (<i>Mathematics or Statistics                      recommended</i>)</p>	<p><b>Year 2, Spring</b>                      Computer Science 3615 <sup>1</sup>                      Computer Science 3620                      GLER course                      Elective                      Elective</p>
<p><b>Year 3, Fall</b>                      Computer Science 3740 <sup>1</sup>                      Computer Science 3000/4000 level                      Computer Science 3000/4000 level                      Elective                      Elective</p>	<p><b>Year 3, Spring</b>                      Computer Science 3000/4000 level                      Computer Science 3000/4000 level                      Elective 3000/4000 level                      Elective                      Elective</p>
<p><b>Year 4, Fall</b>                      Computer Science 3000/4000 level                      Computer Science 4000 level                      Elective 3000/4000 level                      Elective 3000/4000 level                      Elective</p>	<p><b>Year 4, Spring</b>                      Computer Science 3000/4000 level                      Computer Science 4000 level                      Elective 3000/4000 level                      Elective                      Elective</p>

<sup>1</sup> Semester of offering may vary.

**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).

