University of
Lethbridge

FIAT LUX

Program Planning Guide

Department: Mathematics and Computer Science

Calendar Year: 2019/2020

Name:_____

ID: _____

Bachelor of Science

Computer Science

Major in Computer Science:
www.uleth.ca/artsci/math-computer-science

Academic Calendar:
www.uleth.ca/ross/academic-calendar

High School Admission Requirements:
www.uleth.ca/ross/admissions/undergrad/high-school

Current and Past Program Planning Guides:
www.uleth.ca/ross/ppgs

Faculty of Arts and Science Advising:
www.uleth.ca/artsci/advising
artsci.advising@uleth.ca
403-329-5106
M2102

Co-operative Education:
www.uleth.ca/artsci/coop

N a m e : _____   **I D :** _____

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)

_____ 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

[1]Six additional courses (18.0 credit hours) in Computer Science at the 3000/4000 level

11. _____   14. _____

12. _____   15. _____

13. _____   16. _____

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. _____

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

[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.

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 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 (MGT) may be counted towards the Lib Ed Requirement.

See the 2019/2020 Calendar, p. 83, 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) and courses numbered in the range of 0520 to 0530.

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, 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, ADCS, CDEV, CRED, EDUC, HLSC, MGT, NURS, PUBH, and TREC) will not meet this requirement.

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 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, ADCS, CDEV, CRED, EDUC, HLSC, MGT, 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.

Minor (Optional): _____
See the 2019/2020 Calendar, p. 277, for more information.

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 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	Year 1, Spring
Computer Science 1620	**Computer Science 2620**
Computer Science 1820	**Mathematics 2000**
Lib Ed Requirement course	Mathematics or Statistics list course
Lib Ed Requirement course	Lib Ed Requirement course
Lib Ed Requirement course	Lib Ed Requirement course

Year 2, Fall	Year 2, Spring
Computer Science 2610[1]	Computer Science 3620
Computer Science 2720[2]	Computer Science 3000/4000 level
Lib Ed Requirement course	Lib Ed Requirement course
Lib Ed Requirement course	Elective
Elective *(Mathematics or Statistics recommended)*	Elective

Year 3, Fall	Year 3, Spring
Computer Science 3615	Computer Science 3740
Computer Science 3000/4000 level	Computer Science 3000/4000 level
Computer Science 3000/4000 level	Elective 3000/4000 level
Elective	Elective
Elective	Elective

Year 4, Fall	Year 4, Spring
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

[1] *Computer Science 2610 may be completed in Year 1, Spring or Year 2, Spring*

[2] *Computer Science 2720 may be completed in Year 2, Spring*

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 electives courses within the major and plan accordingly.*

Terms Used

Lib Ed Requirement course: A course that could count toward the Liberal Education List Requirement. You may use courses in your major towards this 12-course requirement. See the 2019/2020 University of Lethbridge Calendar, School of Liberal Education for complete information.

The School of Liberal Education 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 2019/2020 University of Lethbridge Calendar, Course Catalogue). LBED 1000 and 2000 may be used toward satisfying the Lib Ed Requirement.

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).