

University of
Lethbridge



Program Planning Guide

Name: _____

ID: _____

Calendar Year: 2021/2022

Major in Mathematics:

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

Co-operative Education:

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

Faculty of Arts and Science Advising:

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

Bachelor of Science
Mathematics

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.uleth.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 (19 courses)

Other Courses (minimum 21 courses)

- _____ Computer Science 1620 - Fundamentals of Programming I
- _____ Computer Science 2620 - Fundamentals of Programming II
- _____ Mathematics 1410 - Elementary Linear Algebra
- _____ Mathematics 2000 - Mathematical Concepts
- _____ Mathematics 3400 - Group and Ring Theory
- _____ Mathematics 3410 - Linear Algebra
- _____ Mathematics 3500 - Analysis I
- _____ Statistics 1770 - Introduction to Probability and Statistics
- _____ Statistics 3500 - Mathematical Probability

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20. _____
21. _____

One of:

- _____ Mathematics 1560 - Calculus I
- _____ Mathematics 1565 - Accelerated Calculus I (recommended)

One of:

- _____ Mathematics 2560 - Calculus II
- _____ Mathematics 2565 - Accelerated Calculus II (recommended)

One of the following Streams (a. or b.):

a. Standard Stream

- _____ Mathematics 2570 - Calculus III
- _____ Mathematics 2580 - Calculus IV

b. Accelerated Stream

- _____ Mathematics 2575 - Accelerated Calculus III (recommended)
- _____ One additional course (3.0 credit hours) in Mathematics, Statistics, or Computer Science at the 2000 level or above

_____ One additional course (3.0 credit hours) in Mathematics or Statistics at the 2000 level or above

1. _____

_____ ¹Three additional courses (9.0 credit hours) in Mathematics or Statistics at the 3000/4000 level

1. _____
2. _____
3. _____

_____ Two courses (6.0 credit hours) in Mathematics or Statistics at the 4000 level

1. _____
2. _____

Notes

¹One of the additional 3000/4000-level courses may be replaced by a course from the following list:
 Computer Science 3630 - Theoretical Foundations of Computing
 Physics 3200 - Mechanics

Students who intend to take Physics 3200 as a course contributing to the Mathematics major should carefully plan their program to include the required prerequisites.

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, Mathematics, and Statistics.

Independent Study (1990, 2990, 3990, 4990) or Applied Study (2980, 3980, 4980) courses may not be used to meet the minimum Mathematics or Statistics course requirements above, except for the additional course for students completing the accelerated calculus stream. Mathematics 2090 (Number Systems) may not be used to meet any requirements for the major.

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 2021/2022 Calendar, p. 79, 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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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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_____ 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 2021/2022 Calendar, p. 317, 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
Mathematics 1410
Mathematics 1565 or Mathematics 1560
 Lib Ed Requirement course
 Lib Ed Requirement course

Year 2, Fall

Computer Science 2620
Mathematics 2570 or 2575
 Lib Ed Requirement course
 Lib Ed Requirement course
 Elective

Year 3, Fall

Mathematics 3400
Statistics 3500
Mathematics or Statistics 3000/4000 level
 Elective
 Elective

Year 4, Fall

Mathematics 4000 level
Mathematics or Statistics 3000/4000 level
 Elective 3000/4000 level
 Elective 3000/4000 level
 Elective

Year 1, Spring

Mathematics 2000
Mathematics 2565 or Mathematics 2560
Statistics 1770
 Lib Ed Requirement course
 Lib Ed Requirement course

Year 2, Spring

Mathematics 2580 or additional Mathematics, Statistics, or Computer Science
Mathematics 3410
 Lib Ed Requirement course
 Lib Ed Requirement course
 Elective

Year 3, Spring

Mathematics 3500¹
Mathematics or Statistics 3000/4000 level
Mathematics or Statistics Elective
 Elective 3000/4000 level
 Elective 3000/4000 level

Year 4, Spring

Mathematics 4000 level
 Elective 3000/4000 level
 Elective 3000/4000 level
 Elective
 Elective

¹ 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.

There are two main paths to complete the required calculus sequence:

- Accelerated Stream: MATH 1565-2565-2575
- Regular Stream: MATH 1560-2560-2570-2580

Both streams cover the same material, the accelerated stream covers it more quickly thereby allowing students to progress deeper into the Mathematics program sooner. The accelerated stream is recommended for any student who did well in high school calculus (Mathematics 31 or equivalent), or otherwise feels confident in their ability to handle the higher pace of the material. Please contact the Department of Mathematics and Computer Science if you are unsure which stream to take.

