University of Lethbridge

Calendar Year: 2025/2026

PROGRAM PLANNING GUIDE

Name:_____

ID: | | | | | | | | | |

Bachelor of Science

Mathematics

Mathematics is the study of structure and patterns in numbers and shapes. It is an active research area, providing a language, theories and models to solve complex problems across a wide variety of scientific, industrial and economic sectors. A mathematics education provides a solid training that is sought after by employers and allows flexibility in your career choices. You will learn to tackle difficult problems employing a variety of theories and statistical models. You'll also learn to communicate your expertise by combining your technical skills with a sound liberal education.

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): Mathematics

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?

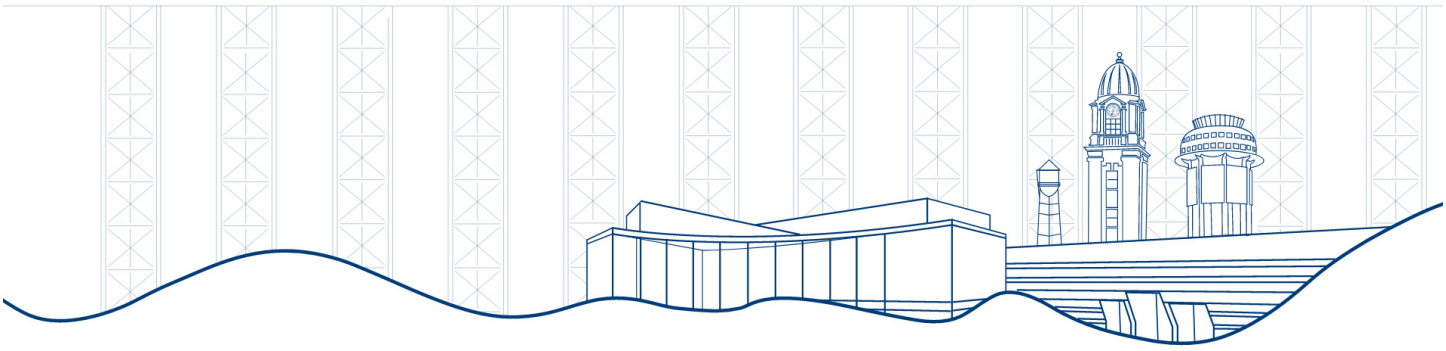
Register early! (March for Summer and Fall; November for Winter)
Registration Dates: www.ulethbridge.ca/ross/registration-dates

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



Version: February 11, 2025

Contact an Academic Advisor (www.ulethbridge.ca/ross/academic-advising) for advising information

PROGRAM REQUIREMENTS (2025/2026)

Required courses and notes

Name:_____

ID: | | | | | | | | | |

Major Requirements (19 Courses)

_____ 1. Computer Science 1620 - Fundamentals of Programming I
_____ 2. Computer Science 2620 - Fundamentals of Programming II
_____ 3. Mathematics 1410 - Elementary Linear Algebra
_____ 4. Mathematics 2000 - Mathematical Concepts
_____ 5. Mathematics 3400 - Group and Ring Theory
_____ 6. Mathematics 3410 - Linear Algebra
_____ 7. Mathematics 3500 - Analysis I
_____ 8. Statistics 1770 - Introduction to Probability and Statistics
_____ 9. Statistics 3500 - Mathematical Probability
_____ 10. **One of:**
- _____ Mathematics 1560 - Calculus I
- _____ Mathematics 1565 - Accelerated Calculus I (recommended)

_____ 11. **One of:**
- _____ Mathematics 2560 - Calculus II
- _____ Mathematics 2565 - Accelerated Calculus II (recommended)

_____ 12.-13. **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

_____

_____ 14. One additional course (3.0 credit hours) in Mathematics or Statistics at the 2000 level or above

_____

_____ 15.-17.[1] Three additional courses (9.0 credit hours) in Mathematics or Statistics at the 3000/4000 level
- _____ 15._____
- _____ 16._____
- _____ 17._____

_____ 18.-19. Two courses (6.0 credit hours) in Mathematics or Statistics at the 4000 level
- _____ 18._____
- _____ 19._____

Electives (21 Courses)

_____ 20.-40. Twenty-one additional courses (63.0 credit hours) chosen to complete program requirements
- _____ 20._____
- _____ 21._____
- _____ 22._____
- _____ 23._____
- _____ 24._____
- _____ 25._____
- _____ 26._____
- _____ 27._____
- _____ 28._____
- _____ 29._____
- _____ 30._____
- _____ 31._____
- _____ 32._____
- _____ 33._____
- _____ 34._____
- _____ 35._____
- _____ 36._____
- _____ 37._____
- _____ 38._____
- _____ 39._____
- _____ 40._____

Notes

[1] One 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.

PROGRAM REQUIREMENTS (2025/2026)

Required courses and notes

Name:_____

ID: | | | | | | | | | |

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._____

RECOMMENDED SEQUENCING PLAN (2025/2026)

Recommended Course Sequence

Name:_____

ID: | | | | | | | | | |

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 <u>may</u> change during your studies.

First Year

Computer Science 1620
Mathematics 1410
One of: **Mathematics 1565** or **Mathematics 1560**
Mathematics 2000
One of: **Mathematics 2565** or **Mathematics 2560**
Statistics 1770
Lib Ed Requirement course
Lib Ed Requirement course
Lib Ed Requirement course
Lib Ed Requirement course

Second Year

Computer Science 2620
One of: **Mathematics 2570** or **Mathematics 2575**
One of: Mathematics 2580 or additional Mathematics, Statistics, or Computer Science course
Mathematics 3410
Lib Ed Requirement course
Lib Ed Requirement course
Lib Ed Requirement course
Lib Ed Requirement course
Elective
Elective

Third Year

Mathematics 3400
Mathematics 3500
Statistics 3500
One of: Mathematics or Statistics 3000/4000 level
One of: Mathematics or Statistics 3000/4000 level
One of: Mathematics or Statistics Elective
Elective 3000/4000 level
Elective 3000/4000 level
Elective
Elective

Fourth Year

One of: Mathematics or Statistics 4000 level
One of: Mathematics or Statistics 4000 level
One of: Mathematics or Statistics 3000/4000 level
Elective 3000/4000 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.

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