University of Lethbridge

Calendar Year: 2026/2027

PROGRAM PLANNING GUIDE

Name:_____

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

Bachelor of Science

Chemistry

Chemistry studies the elements that comprise all matter. Everything around us — the air we breathe, water we drink, food we eat, cars we drive, even our bodies — are made from these elements. Throughout the program, you will receive intensive laboratory instruction on the transformation and safe handling of chemical compounds, as well as hands-on training in advanced instrumental techniques such as elemental analysis, optical spectroscopy, magnetic resonance, X-ray diffraction and mass spectrometry.

What determines my program requirements?

Please refer to the Academic Calendar (www.ulethbridge.ca/ross/academic-calendar) for complete program information.

Calendar Year: 2026/2027 - 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): Chemistry

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

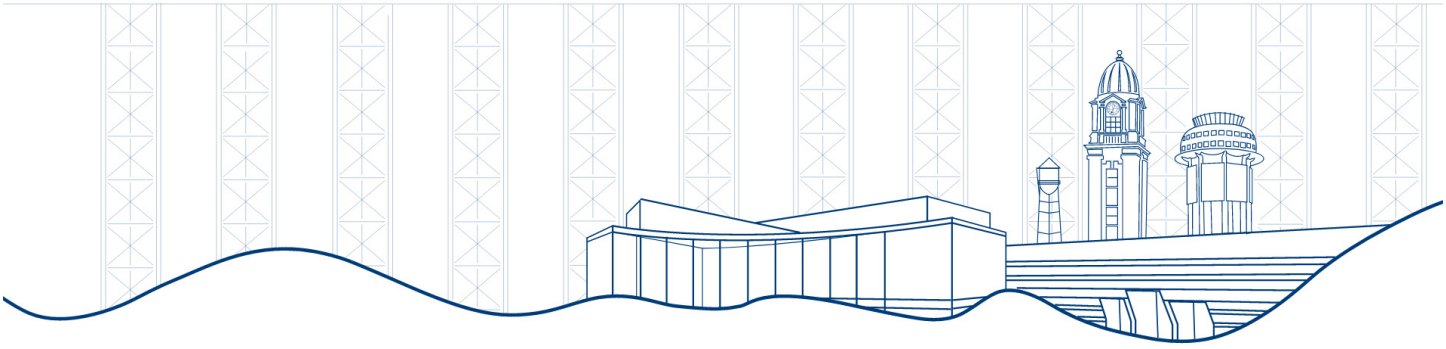
What supports are available to students?

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 17, 2026

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

PROGRAM REQUIREMENTS (2026/2027)

Required courses and notes

Name:_____

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

Major Requirements (24 Courses)

_____ **1.** Biochemistry 2000 - Introductory Biochemistry
_____ **2.** Biology 1010 - Cellular Basis of Life
_____ **3.** Chemistry 1000 - General Chemistry I
_____ **4.** Chemistry 2000 - General Chemistry II
_____ **5.** Chemistry 2410 - Analytical Chemistry I
_____ **6.** Chemistry 2500 - Organic Chemistry I
_____ **7.** Chemistry 2600 - Organic Chemistry II
_____ **8.** Chemistry 2740 - Physical Chemistry I
_____ **9.** Chemistry 3250 - Contemporary Chemistry
_____ **10.** Chemistry 3410 - Analytical Chemistry II
_____ **11.** Chemistry 3730 - Physical Chemistry II
_____ **12.** Chemistry 3830 - Inorganic Chemistry I
_____ **13.** Chemistry 3840 - Inorganic Chemistry II
_____ **14.** Mathematics 1410 - Elementary Linear Algebra
_____ **15.** Physics 2130 - Waves, Optics and Sound
_____ **16.** **One of:**
- _____ Mathematics 1560 - Calculus I
- _____ Mathematics 1565 - Accelerated Calculus I (recommended)

_____ **17.** **One of:**
- _____ Mathematics 2560 - Calculus II
- _____ Mathematics 2565 - Accelerated Calculus II (recommended)

_____ **18.** **One of:**
- _____ Physics 1000 - Introduction to Physics I (recommended)
- _____ Physics 1050 - Introduction to Biophysics
- _____ [1] Engineering 2060 - Engineering Mechanics

_____ **19.-20.**[2] Two offerings (6.0 credit hours) chosen from the following list:
Chemistry 4000 - Advanced Chemistry (Series)
Chemistry 4010 - Advanced Chemistry with Laboratory (Series)
- _____ 19._____
- _____ 20._____

_____ **21.-24.**[2] Four additional courses (12.0 credit hours) in Chemistry or Biochemistry chosen from the following list:
Additional offerings of Chemistry 4000 - Advanced Chemistry (Series)
Additional offerings of Chemistry 4010 - Advanced Chemistry with Laboratory (Series)
Biochemistry 3100 - Proteins, Enzymes and Nucleic Acids
Biochemistry 3300 - Bioenergetics and Metabolism
Chemistry 3990 - Independent Study
Chemistry 4990 - Independent Study
Chemistry 4995 - Undergraduate Thesis (6.0 credit hours)
- _____ 21._____
- _____ 22._____
- _____ 23._____
- _____ 24._____

Notes

[1] This course has a prerequisite or corequisite that is not required for the major.

[2] A minimum of two of the six selected courses must be lab-based. Offerings in the Chemistry 4000 Series do not meet this requirement. Chemistry 3990 and 4990 may meet this requirement if the Independent Study includes laboratory work.

This program has been accredited by the Canadian Society for Chemistry (CSC), which is the national organization representing chemists, and is acceptable for membership in the Association of the Chemical Profession of Alberta (ACPA). Students who complete a B.Sc. degree with the major in Chemistry outlined above will have a degree accredited by the CSC.

Those who plan to pursue graduate studies in Chemistry should take more than the minimum of 18 courses in Chemistry or Biochemistry and should obtain advice on their program from the department. Students can get credit for participating in original research as part of their studies, especially if preparing for advanced Chemistry degrees.

Chemistry courses are organized in sequences and must be taken in the proper order. In addition, several of the 3000-level courses are offered only in alternate years. Students at an early stage of their studies are advised to seek help in planning their programs from the Department Advisor or from any faculty member in the Department of Chemistry and Biochemistry.

Electives (16 Courses)

_____ **25.-40.** Sixteen additional courses (48.0 credit hours) chosen to complete program requirements
- _____ 25._____
- _____ 26._____
- _____ 27._____
- _____ 28._____
- _____ 29._____
- _____ 30._____
- _____ 31._____
- _____ 32._____
- _____ 33._____
- _____ 34._____
- _____ 35._____
- _____ 36._____
- _____ 37._____
- _____ 38._____
- _____ 39._____
- _____ 40._____

PROGRAM REQUIREMENTS (2026/2027)

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. Geography 3225/Global Business 3225 counts toward the limit for Geography and Dhillon School of Business courses).

Only four courses (12.0 credit hours) in total from the Faculty of Education (EDUC), Faculty of Health Sciences (AMHC, HLSC, INHL, NURS, PUBH, and TREC), and the Dhillon School of Business (ACCT, AGEM, DGTR, 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 2026/2027 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, AGEM, AMHC, CDEV, CRED, DGTR, 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, AGEM, AMHC, CDEV, CRED, DGTR, 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 2026/2027 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 (2026/2027)

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

Biology 1010
Chemistry 1000
Chemistry 2000
Mathematics 1410
One of: **Mathematics 1565** or **Mathematics 1560**
One of: **Mathematics 2565** or **Mathematics 2560**
One of: **Physics 1000** or **Physics 1050**
Physics 2130
Lib Ed Requirement course
Lib Ed Requirement course

Second Year

Biochemistry 2000
Chemistry 2410
Chemistry 2500
Chemistry 2600
Chemistry 2740
Lib Ed Requirement course
Lib Ed Requirement course
Lib Ed Requirement course
Lib Ed Requirement course
Lib Ed Requirement course

Third Year

Chemistry 3250
One of: Chemistry 3410 or Chemistry 3840
One of: Chemistry 3730 or Chemistry 3830
Chemistry or Biochemistry list course
Chemistry or Biochemistry list course
Lib Ed Requirement course
Elective 3000/4000 level
Elective 3000/4000 level
Elective
Elective

Fourth Year

One of: Chemistry 3830 or Chemistry 3730
One of: Chemistry 3840 or Chemistry 3410
One of: Chemistry 4000 or Chemistry 4010
One of: Chemistry 4000 or Chemistry 4010
Chemistry or Biochemistry list course
Chemistry or Biochemistry list course
Elective 3000/4000 level
Elective 3000/4000 level
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.

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.