

University of
Lethbridge



Program Planning Guide

Name: _____

ID: _____

Calendar Year: 2023/2024

Major in Chemistry:

www.ulethbridge.ca/artsci/chemistry-biochemistry

Academic Calendar:

www.ulethbridge.ca/ross/academic-calendar

High School Admission Requirements:

www.ulethbridge.ca/ross/admissions/undergrad/high-school

Current and Past Program Planning Guides:

www.ulethbridge.ca/ross/ppgs

Co-operative Education:

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

Faculty of Arts and Science Advising:

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

Bachelor of Science
Chemistry

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.ulethbridge.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 (24 courses)

- _____ Biochemistry 2000 - Introductory Biochemistry
- _____ Biology 1010 - Cellular Basis of Life
- _____ Chemistry 1000 - General Chemistry I
- _____ Chemistry 2000 - General Chemistry II
- _____ Chemistry 2410 - Analytical Chemistry I
- _____ Chemistry 2500 - Organic Chemistry I
- _____ Chemistry 2600 - Organic Chemistry II
- _____ Chemistry 2740 - Physical Chemistry I
- _____ Chemistry 3250 - Contemporary Chemistry
- _____ Chemistry 3410 - Analytical Chemistry II
- _____ Chemistry 3730 - Physical Chemistry II
- _____ Chemistry 3830 - Inorganic Chemistry I
- _____ Chemistry 3840 - Inorganic Chemistry II
- _____ Mathematics 1410 - Elementary Linear Algebra
- _____ Physics 2000 - Introduction to Physics II

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:

- _____ Physics 1000 - Introduction to Physics I (recommended)
- _____ Physics 1050 - Introduction to Biophysics
- _____ ¹ Engineering 2060 - Engineering Mechanics

²Two offerings (6.0 credit hours) chosen from the following list:

- Chemistry 4000 - Advanced Chemistry (Series)
- Chemistry 4010 - Advanced Chemistry with Laboratory (Series)

1. _____
2. _____

²Four 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)

1. _____
2. _____
3. _____
4. _____

Other Courses (minimum 16 courses)

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____

Notes

¹ This course has a prerequisite or corequisite that is not required for the major. See the Course Catalogue (p. 351) for more information.

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.

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 2023/2024 Calendar, p. 83, 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.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
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.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____

_____ 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 2023/2024 Calendar, p. 331, 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

Chemistry 1000
 Mathematics 1410
 Mathematics 1565 or Mathematics 1560
 Physics 1000 or Physics 1050
 Lib Ed Requirement course

Year 2, Fall

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

Year 3, Fall

Chemistry 3250¹
 Chemistry 3730 or Chemistry 3830
 Chemistry or Biochemistry list course
 Lib Ed Requirement course
 Elective

Year 4, Fall

Chemistry 3830 or Chemistry 3730
 Chemistry 4000 or Chemistry 4010
 Chemistry or Biochemistry list course
 Elective 3000/4000 level
 Elective

Year 1, Spring

Biology 1010
 Chemistry 2000
 Mathematics 2565 or Mathematics 2560
 Physics 2000
 Lib Ed Requirement course

Year 2, Spring

Chemistry 2600
 Chemistry 2740
 Lib Ed Requirement course
 Lib Ed Requirement course
 Lib Ed Requirement course

Year 3, Spring

Chemistry 3410 or Chemistry 3840
 Chemistry or Biochemistry list course
 Elective 3000/4000 level
 Elective 3000/4000 level
 Elective

Year 4, Spring

Chemistry 3840 or Chemistry 3410
 Chemistry 4000 or Chemistry 4010
 Chemistry or Biochemistry list course
 Elective 3000/4000 level
 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.

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.