University of Lethbridge

Faculty of Arts & Science

Program Planning Guide

Department: Chemistry and Biochemistry

Calendar Year: 2013/2014

Name:_____

ID: _____

Bachelor of Science

Chemistry

Major in Chemistry:
www.uleth.ca/artsci/chemistry-biochemistry

Faculty of Arts and Science Student Program Services:
www.uleth.ca/artsci/advising
artsci.advising@uleth.ca
(403) 329-5106
SU060

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

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

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

Name: _____ **ID:** _____

B.Sc. Chemistry

Completion of at least 40 courses (120.0 credit hours) with a grade point average 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
_____ Chemistry 3250 - Contemporary Chemistry
_____ Chemistry 3410 - Analytical Chemistry II
_____ Chemistry 3730 - Advanced Physical Chemistry
_____ Chemistry 3830 - Inorganic Chemistry I
_____ Chemistry 3840 - Inorganic Chemistry II
_____ Mathematics 1410 - Elementary Linear Algebra
_____ Mathematics 1560 - Calculus I
_____ Mathematics 2560 - Calculus II
_____ Physics 2000 - Introduction to Physics II

One of:

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

Two offerings (6.0 credit hours) of Chemistry 4000 - Advanced Chemistry (Series)

1. _____ 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)
_____ 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)

Other Courses (minimum 16 courses)

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

Notes

[1]Has prerequisites: Engineering 2000 and Mathematics 1560.

At least two offerings of Chemistry 4000 - Advanced Chemistry (Series) must be completed. The content, as identified by the title, must be different in the two offerings. These courses are usually offered each semester and offerings will normally not be repeated within a two-year cycle.

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.

See also:

- Bachelor of Science - Biochemistry
- Bachelor of Science/Bachelor of Education - Chemistry/Science Education
- Bachelor of Science/Bachelor of Management - Chemistry

Completion of the General Liberal Education Requirement (GLER).
Only four courses (12.0 credit hours) in total may be counted from all courses offered by a single department. See the 2013/2014 Calendar, p. 88, 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).

1. _____ 7. _____

2. _____ 8. _____

3. _____ 9. _____

4. _____ 10. _____

5. _____ 11. _____

6. _____ 12. _____

Completion of at least 15 courses (45.0 credit hours) from disciplines offered by the Faculty of Arts and Science or the Faculty of Fine Arts at the 3000/4000 level, excluding Activity courses (labelled PHAC and MUSE).

1. _____ 9. _____

2. _____ 10. _____

3. _____ 11. _____

4. _____ 12. _____

5. _____ 13. _____

6. _____ 14. _____

7. _____ 15. _____

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 four Activity courses (i.e. courses labelled PHAC and MUSE; maximum 6.0 credit hours) may be completed for credit towards the degree, except for Kinesiology majors (not more than 10 Activity courses; 15.0 credit hours) and Music majors (not more than 8 Activity courses; 12.0 credit hours).

_____ Not more than four courses (12.0 credit hours) from disciplines offered outside the Faculty of Arts and Science or the Faculty of Fine Arts may be completed for credit towards the degree (i.e. labelled CDEV, CRED, EDUC, HLSC, MGT, NURS, and PUBH). Courses cross-listed between the Faculty of Arts and Science and another Faculty do not count towards this limit.

_____ Residence requirement:
Degree: at least 20 courses (60.0 credit hours) must be completed at the University of Lethbridge, including the last 10 courses (30.0 credit hours) completed for credit towards the degree.
Major: at least half of the courses required in the major must be completed at the University of Lethbridge.

Minor (Optional): _____

See the 2013/2014 Calendar, p. 143, for eligible minors.

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 semester. 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***
Chemistry 1000	Biology 1010
Mathematics 1410	Chemistry 2000
Mathematics 1560	Mathematics 2560
Physics 1000	Physics 2000
GLER course	GLER course
Year 2, Fall	***Year 2, Spring***
Chemistry 2410	Chemistry 2600
Chemistry 2500	Chemistry 2740
GLER course	GLER course
GLER course	GLER course
GLER course	GLER course
Year 3, Fall	***Year 3, Spring***
Biochemistry 2000[1]	Chemistry 3410 or Chemistry 3840
Chemistry 3730 or Chemistry 3830	Chemistry 3250
Chemistry or Biochemistry list course	Chemistry or Biochemistry list course
Elective 3000/4000 level	Elective 3000/4000 level
Elective	Elective
Year 4, Fall	***Year 4, Spring***
Chemistry 3830 or Chemistry 3730	Chemistry 3840 or Chemistry 3410
Chemistry 4000	Chemistry 4000
Chemistry or Biochemistry list course	Chemistry or Biochemistry list course
Elective 3000/4000 level	Elective 3000/4000 level
Elective	Elective

[1] *Biochemistry 2000 may be completed in Fall or Spring of Year 3.*

Note: *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.*

Terms Used

GLER course: A course that could count toward the General Liberal Education Requirement. You may use courses in your major towards this 12-course requirement. See the 2013/2014 University of Lethbridge Calendar, Part 4 - Academic Regulations (p. 88) for complete information.

The Faculty of Arts and Science 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 2013/2014 University of Lethbridge Calendar, Part 14 - Courses, p. 307). LBED 1000 and 2000 may be used toward satisfying the GLER.

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).