Program Planning Guide

Program: Bachelor of Science/Bachelor of Education (B.Sc./B.Ed.)
Major (Arts and Science): Physics
Major (Education): Science Education
Calendar Year: 2019/2020
Name: ____________________________________________
ID: ________________________________________________

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 in the Faculty of Arts and Science or Faculty of Education for advising information.
Name: ______________________________________________________________ ID: ________________________

Bachelor of Science/Bachelor of Education

B.Sc./B.Ed. (Physics/Science Education)
Completion of at least 30 courses (90.0 credit hours) from disciplines offered by the Faculty of Arts and Science, Faculty of Fine Arts, or School of Liberal Education with a grade point average of at least 2.00.
Completion of the equivalent of 20 courses (60.0 credit hours) in Education with a program grade point average of at least 2.50 in Education courses and the appropriate major.

Major Requirements (16 courses)

1. Mathematics 1410 - Elementary Linear Algebra
2. Mathematics 2570 - Calculus III
3. Physics 2000 - Introduction to Physics II
4. Physics 2020 - The Physics of Everyday Life
5. Physics 2120 - Introduction to Physics III
6. Physics 2130 - Waves, Optics and Sound
7. Physics 2150 - Quantum Mechanics I
8. Physics 2925 - Introduction to Experimental Physics
9. Physics 3750 - Contemporary Physics
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. One of:
    - Physics 1000 - Introduction to Physics I
    - Physics 1050 - Introduction to Biophysics
    - Engineering 2060 - Engineering Mechanics
13. One of:
    - Astronomy 2020 - Modern Astronomy
    - Astronomy 2070 - The Solar System
14. One of:
    - Biology 1010 - Cellular Basis of Life
    - Biology 1020 - Diversity of Life
15. One of:
    - Chemistry 1000 - General Chemistry I
    - Chemistry 1110 - Chemistry for Life Sciences I

One additional course (3.0 credit hours) in Physics, Astronomy, or Engineering

16. __________________

Other Courses (minimum 14 courses)
Courses offered by the Faculty of Arts and Science, Faculty of Fine Arts, or School of Liberal Education only (no courses labelled ABHL, ADCS, CDEV, CRED, EDUC, HLSC, MGT, NURS, PUBH, or TREC unless cross-listed with a course from one of the above faculties)

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

Education Requirements (20-course equivalent)

1. Education 2500 - Practicum I - Orientation to Teaching
2. Professional Semester I (15.0 credit hours)
3. Professional Semester II (15.0 credit hours)
4. Professional Semester III (15.0 credit hours)

Education Foundation: ________________________________

Three Education Electives:

1. __________________  3. __________________
2. __________________

Notes

^Prerequisite required: Engineering 2000

Students wishing to include 3000-level Physics courses in their program must take Mathematics 2580 (Calculus IV) which is a prerequisite for such courses except Physics 3750 and some offerings of the Physics 3900 series.

It is recommended that Physics majors include courses in Biology, Chemistry, Computer Science, and Mathematics.

Since a number of senior-level Physics courses are offered only in alternate years, students are advised to plan carefully to include the desired courses. Students are strongly advised to seek help in planning their program from the Department of Physics and Astronomy.
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. Out-of-faculty courses (i.e. labelled ABHL, ADCS, CDEV, CRED, HLSC, MGT, NURS, PUBH, and TREC) will not meet this requirement.
See the 2019/2020 Calendar, p. 83, for more information.

**LIST I: Fine Arts and Humanities Courses**
1.__________________
2.__________________
3.__________________
4.__________________

**LIST II: Social Science Courses**
1.__________________
2.__________________
3.__________________
4.__________________

**LIST III: Science Courses**
1.__________________
2.__________________
3.__________________
4.__________________

Not more than 10 courses (30.0 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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10. _____________ (max.)

Completion of at least 10 courses (30.0 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, ADCS, CDEV, CRED, EDUC, HLSC, MGT, NURS, PUBH, and TREC) will not meet this requirement.

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10. _____________ (min.)

Not more than three Independent Study courses (9.0 credit hours) may be completed for credit towards the degree.

Not more than three Disciplinary Credit Applied Studies courses (9.0 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 17 courses (51.0 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 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).

**Residence Requirement:**
Degree:
Art and Science: at least 15 courses (45.0 credit hours) offered by the Faculty of Arts and Science, Faculty of Fine Arts, or School of Liberal Education must be completed at the University of Lethbridge.
Education: at least 15 courses (45.0 credit hours) offered by the Faculty of Education must be completed at the University of Lethbridge.
Major: at least half of the courses required in the major must be completed at the University of Lethbridge.

**Education Minor (If Applicable):**
See the 2019/2020 Calendar, p. 146, for eligible minors.

1.__________________
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5.__________________
6.__________________

**Education Specialization (If Applicable):**
See the 2019/2020 Calendar, p. 150, for details.

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2.__________________
3.__________________
4.__________________
5.__________________

Please refer to page 4 of this guide for Faculty of Education admission requirements.
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 five years, provided you complete five courses per 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 or Chemistry 1110
Mathematics 1410
Mathematics 1565 or Mathematics 1560
Physics 1000 or Physics 1050
Lib Ed Requirement course

**Year 1, Spring**
Biology 1010 or Biology 1020
Mathematics 2565 or Mathematics 2560
Physics 2000
Physics 2130
Lib Ed Requirement course

**Year 2, Fall**
Physics 2020
Education 2500
Mathematics 2570
Physics 2120
Lib Ed Requirement course

**Year 2, Spring**
Astronomy 2020 or Astronomy 2070
Physics 2150
Physics 2925
Lib Ed Requirement course
Lib Ed Requirement course

**Year 3, Fall**
Professional Semester I

**Year 3, Spring**
Physics 3750
Lib Ed Requirement course
Elective 3000/4000 level
Elective 3000/4000 level
Elective 3000/4000 level

**Year 4, Fall**
Physics elective 3000/4000 level
Lib Ed Requirement course 3000/4000 level
Lib Ed Requirement course 3000/4000 level
Elective 3000/4000 level
Elective 3000/4000 level

**Year 4, Spring**
Professional Semester II

Elementary Education and Inclusive Education students will reverse the fall and spring terms in Year 5 and complete PS III in the spring.

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**Terms Used**

**Lib Ed Requirement course:** A course that could count toward the Liberal Education List Requirement. You may use courses in your major toward this 12-course requirement. As some courses may not fit specific program requirements, students should consult their Faculty advising office. See the 2019/2020 University of Lethbridge Calendar, School of Liberal Education for complete information.

The School of Liberal Education 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 2019/2020 University of Lethbridge Calendar, Course Catalogue). LBED 1000 and 2000 may be used toward satisfying the Lib Ed Requirement.

**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 17 courses from any one discipline).

**Faculty of Education Admission**

Admission to the Faculty of Education requires successful completion of the following:

- 14 graded term courses (42.0 credit hours).
- Minimum cumulative grade point average of 2.50 on all U of L and transferable courses taken within the terms containing the last 14 courses (42.0 credit hours). All courses must be graded.
- Minimum of five courses (15.0 credit hours) in the major.
- Minimum cumulative grade point average of 2.50 on all graded courses comprising the major, including all transferable courses.
- Credit in Education 2500 - Practicum I - Orientation to Teaching (or equivalent) including a favourable recommendation from the instructor.

Students are advised to contact Student Program Services in the Faculty of Education (TH421; tel. 403-329-2254) for guidelines regarding the Faculty of Education’s Special Case Admission policy.

**Combined Degrees Program:**

Students begin this program in the Faculty of Arts and Science where they progress toward completion of Arts and Science degree requirements, and prepare to meet the admission requirements for the Faculty of Education. Please note that completion of admission requirements does not guarantee admission to the Faculty of Education.