

University of
Lethbridge



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: _____

Bachelor of Science/Bachelor of Education
Physics/Science Education

Major in Physics:

www.uleth.ca/artsci/physics-astronomy

Academic Calendar:

www.uleth.ca/ross/academic-calendar

High School Admission Requirements:

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

Faculty of Education Admission Requirements:

www.uleth.ca/education/programs-degrees/undergraduate-studies/admission

Current and Past Program Planning Guides:

www.uleth.ca/ross/ppgs

Faculty of Arts and Science Advising:

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

Faculty of Education Advising:

www.uleth.ca/education/student-advising
edu.sps@uleth.ca
403-329-2254
TH421

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 : _____

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
 - _____ ¹Engineering 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)

- _____ Education 2500 - Practicum I - Orientation to Teaching
- _____ Professional Semester I (15.0 credit hours)
- _____ Professional Semester II (15.0 credit hours)
- _____ Professional Semester III (15.0 credit hours)

Education Foundation: _____

Three Education Electives:

- | | |
|----------|----------|
| 1. _____ | 3. _____ |
| 2. _____ | |

Notes

¹Prerequisite 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. _____ 3. _____
- 2. _____ 4. _____

LIST II: Social Science Courses

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

LIST III: Science Courses

- 1. _____ 3. _____
- 2. _____ 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.

- 1. _____ 6. _____
- 2. _____ 7. _____
- 3. _____ 8. _____
- 4. _____ 9. _____
- 5. _____ 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.

- 1. _____ 6. _____
- 2. _____ 7. _____
- 3. _____ 8. _____
- 4. _____ 9. _____
- 5. _____ 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. _____ 4. _____
 - 2. _____ 5. _____
 - 3. _____ 6. _____
- Education (methods requirement)

Education Specialization (If Applicable): _____

See the 2019/2020 Calendar, p. 150, for details.

- 1. _____ 4. _____
- 2. _____ 5. _____
- 3. _____

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.

<p>Year 1, Fall Chemistry 1000 or Chemistry 1110 Mathematics 1410 Mathematics 1565 or Mathematics 1560 Physics 1000 or Physics 1050 Lib Ed Requirement course</p> <p>Year 2, Fall Physics 2020 Education 2500¹ Mathematics 2570 Physics 2120 Lib Ed Requirement course</p> <p>Year 3, Fall Professional Semester I</p> <p>Year 4, Fall Physics elective 3000/4000 level² Lib Ed Requirement course 3000/ 4000 level Lib Ed Requirement course 3000/ 4000 level Elective 3000/4000 level Elective 3000/4000 level</p> <p>Year 5, Fall Professional Semester III</p>	<p>Year 1, Spring Biology 1010 or Biology 1020 Mathematics 2565 or Mathematics 2560 Physics 2000 Physics 2130 Lib Ed Requirement course</p> <p>Year 2, Spring Astronomy 2020 or Astronomy 2070 Physics 2150 Physics 2925 Lib Ed Requirement course Lib Ed Requirement course</p> <p>Year 3, Spring Physics 3750 Lib Ed Requirement course Elective 3000/4000 level Elective 3000/4000 level Elective 3000/4000 level</p> <p>Year 4, Spring Professional Semester II</p> <p>Year 5, Spring Education Foundation course Education elective Education elective Education elective Elective 3000/4000 level</p>
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Elementary Education and Inclusive Education students will reverse the fall and spring terms in Year 5 and complete PS III in the spring.

¹ Education 2500 must be completed (with a Pass Recommend) before admission. It may also be taken in the spring or summer term immediately prior to the fall intake.

² Physics electives may be chosen from Physics, Astronomy, or Engineering.

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 wishing to include 3000-level Physics courses in their program must take Mathematics 2580 (Calculus IV) which is a prerequisite for most Physics courses at the 3000/4000 level.

Terms Used

Lib Ed Requirement course: A course that could count toward the Liberal Education List Requirement. You may use courses in your major towards 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 requirements stated above. For specific information on admission requirements, please refer to the Combined Degrees section of the Academic Calendar:

www.uleth.ca/ross/academic-calendar/cal_doc.pdf

Students of Indigenous descent, and students with a significant shift in academic performance, are advised to refer to the current Calendar for the Faculty of Education's Special Case Admission policy.

Application and Document deadlines:

www.uleth.ca/ross/admissions/undergrad/deadlines

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.**

