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: 2016/2017

Name:_____

ID: _____

Major in Physics:
www.uleth.ca/artsci/physics-astronomy

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

High School Prerequisites by Course:
www.uleth.ca/ross/hs_prereqs/course

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
SU060

Faculty of Education Advising:
www.uleth.ca/education/student-advising
edu.sps@uleth.ca
403-329-2254
TH421

Bachelor of Science/Bachelor of Education

Physics/Science Education

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 or Faculty of Fine Arts 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 1560 - Calculus I
_____ 3. Mathematics 2560 - Calculus II
_____ 4. Mathematics 2570 - Calculus III
_____ 5. Physics 2000 - Introduction to Physics II
_____ 6. Physics 2020 - The Physics of Everyday Life
_____ 7. Physics 2120 - Introduction to Physics III
_____ 8. Physics 2130 - Waves, Optics and Sound
_____ 9. Physics 2150 - Quantum Mechanics I
_____ 10. Physics 2925 - Introduction to Experimental Physics
_____ 11. Physics 3750 - Contemporary Physics

_____ 12. **One of:**
- _____ Physics 1000 - Introduction to Physics I
- _____ Physics 1050 - Introduction to Biophysics
- _____ [1]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)

Arts and Science or Fine Arts courses only
(no courses labelled ADCS, CDEV, CRED, EDUC, HLSC, MGT, NURS, PUBH, or TREC)

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

[1]*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 General Liberal Education Requirement (GLER).

Only four courses (12.0 credit hours) in total may be counted from any one discipline toward the GLER. Disciplines are identified by separate course subject codes.

See the 2016/2017 Calendar, p. 86, 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).

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 or the Faculty of Fine Arts at the 3000/4000 level, excluding Activity courses (labelled PHAC and MUSE).

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 or the Faculty of Fine Arts 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 2016/2017 Calendar, p. 166, for eligible minors.

1._____ 4._____

2._____ 5._____

3._____ 6._____ Education (methods requirement)

Education Specialization (If Applicable): _____

See the 2016/2017 Calendar, p. 170, for details.

1._____ 4._____

2._____ 5. Education 4573

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 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 or Chemistry 1110	Biology 1010 or Biology 1020
Mathematics 1410	Mathematics 2560
Mathematics 1560 [1]	Physics 2000
Physics 1000 or Physics 1050	Physics 2130
GLER course	GLER course
Year 2, Fall	***Year 2, Spring***
Physics 2020	Astronomy 2020 or Astronomy 2070
Education 2500 [2]	Physics 2150
Mathematics 2570	Physics 2925
Physics 2120	GLER course
GLER course	GLER course
Year 3, Fall	***Year 3, Spring***
Professional Semester I	Physics 3750
	GLER course
	Elective 3000/4000 level
	Elective 3000/4000 level
	Elective 3000/4000 level
Year 4, Fall	***Year 4, Spring***
Physics elective 3000/4000 level [3]	Professional Semester II
GLER course 3000/4000 level	
GLER course 3000/4000 level	
Elective 3000/4000 level	
Elective 3000/4000 level	
Year 5, Fall	***Year 5, Spring***
Professional Semester III	Education Foundation course
	Education elective
	Education elective
	Education elective
	Elective 3000/4000 level

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

[1] *Students with less than 75% in Mathematics 30-1 or without Mathematics 31 must complete MATH 1010 as a prerequisite.*

[2] *Education 2500 may also be taken in spring or summer semester.*

[3] *Physics electives may be chosen from Physics, Astronomy, or Engineering.*

Note: *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

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 2016/2017 University of Lethbridge Calendar, Part 4 - Academic Regulations 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 2016/2017 University of Lethbridge Calendar, Part 14 - Courses). 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 17 courses from any one discipline).

Faculty of Education Admission

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

_____ 20 semester courses (60.0 credit hours).

_____ Minimum cumulative grade point average of 2.50 on all UofL and transferable courses taken within the semesters containing the last 20 courses (60.0 credit hours). All courses must be graded with the exception of Education 2500.

_____ Minimum of eight courses (24.0 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.

_____ Writing Proficiency Requirement:
See Part 13 (Combined Degrees) in the Academic Calendar: www.uleth.ca/ross/academic-calendar

_____ Additional admission requirements in the following majors: Dramatic Arts, Music, Native Education and Physical Education

For specific information on admission requirements, please refer to the Combined Degrees section of the Academic Calendar:
www.uleth.ca/ross/academic-calendar/part13.pdf

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 application and document deadlines please refer to:
www.uleth.ca/ross/admission-information/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 the required prerequisites does not guarantee admission to the Faculty of Education. For students of Aboriginal descent, and students with a significant shift in academic performance, please see the current Calendar for the Faculty of Education's special case admission policy.