University of Lethbridge

Calendar Year: 2026/2027

PROGRAM PLANNING GUIDE

Name:_____

ID: | | | | | | | | | |

Bachelor of Science

Physics

Physics is the study of matter and energy at all scales, from the sub-nuclear to the dimensions of the universe. It is the fundamental science — all other sciences and technologies rely on the principles of physics. The department offers a comprehensive physics major. The foundation of this program is built in the first two years, as you study mechanics, waves, electricity and magnetism, optics, thermal physics and modern physics. In your third and fourth years, you will gain a deeper understanding of the fundamentals and delve into more advanced and specialized areas.

What determines my program requirements?

Please refer to the Academic Calendar (www.ulethbridge.ca/ross/academic-calendar) for complete program information.

Calendar Year: 2026/2027 - Your calendar year is set to the academic year you are admitted (or readmitted) and you should follow the requirements for that year for the duration of your program.

Faculty/School: Faculty of Arts and Science (www.ulethbridge.ca/artsci)

Program(s): Bachelor of Science

Major(s): Physics

Minor: A defined set of courses, designed to provide depth in a particular discipline, study in an interdisciplinary area, or focus on a theme-related topic. To learn more about optional minors see www.ulethbridge.ca/ross/minors.

Am I admissible to this program?

Admission: www.ulethbridge.ca/ross/admissions/undergrad

Transfer: www.ulethbridge.ca/ross/transfer-resources

When/How do I apply to the University?

Deadlines: www.ulethbridge.ca/ross/admissions/undergrad/deadlines

Step-by-Step: www.ulethbridge.ca/ross/admissions/step-by-step

Where can I find information on courses?

Course Catalogue: www.ulethbridge.ca/ross/courses

Registration Guide: www.ulethbridge.ca/ross/registration-guide

When can I register for classes?

Register early! (March for Summer and Fall; November for Winter)

Registration Dates: www.ulethbridge.ca/ross/registration-dates

How can I enhance my program?

Career Bridge: www.ulethbridge.ca/career-bridge

Co-op Education: www.ulethbridge.ca/career-bridge/co-operative-education

Honours Thesis: www.ulethbridge.ca/ross/undergraduate-thesis

Double Major: www.ulethbridge.ca/ross/double-major

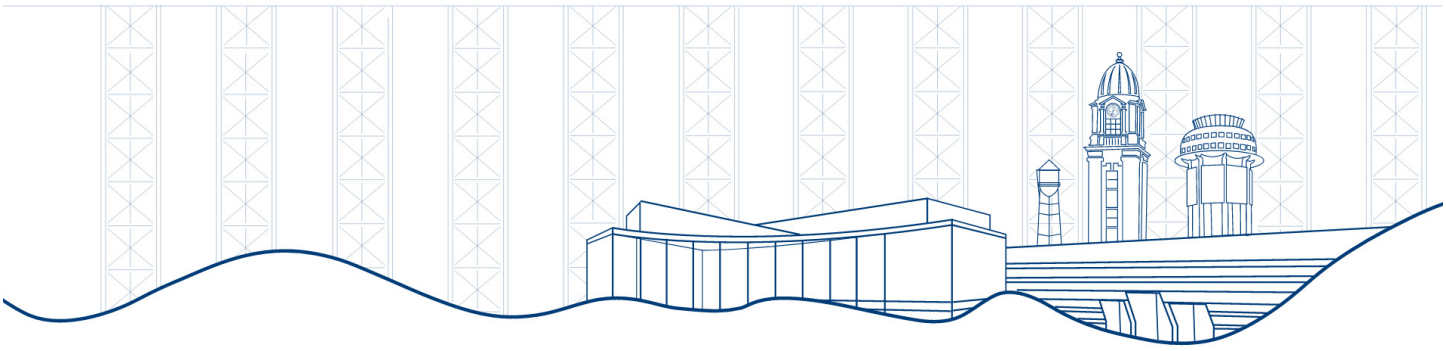
What supports are available to students?

Student Services: www.ulethbridge.ca/campus-life/student-services

Student Success Centre: www.ulethbridge.ca/student-success-centre

Accessible Learning: www.ulethbridge.ca/ross/alc

Counselling Services: www.ulethbridge.ca/counselling



Version: February 17, 2026

Contact an Academic Advisor (www.ulethbridge.ca/ross/academic-advising) for advising information

PROGRAM REQUIREMENTS (2026/2027)

Required courses and notes

Name:_____

ID: | | | | | | | | | |

Major Requirements (26 Courses)

_____ **1.** Chemistry 1000 - General Chemistry I
_____ **2.** Computer Science 1620 - Fundamentals of Programming I
_____ **3.** Mathematics 1410 - Elementary Linear Algebra
_____ **4.** Physics 2000 - Introduction to Physics II
_____ **5.** Physics 2120 - Introduction to Physics III
_____ **6.** Physics 2130 - Waves, Optics and Sound
_____ **7.** Physics 2150 - Quantum Mechanics I
_____ **8.** Physics 2800 - Methods in Mathematical Physics
_____ **9.** Physics 2925 - Introduction to Experimental Physics
_____ **10.** Physics 3150 - Quantum Mechanics II
_____ **11.** Physics 3175 - Electricity and Magnetism
_____ **12.** Physics 3200 - Mechanics
_____ **13.** Physics 3400 - Thermal and Statistical Physics
_____ **14.** Physics 3750 - Contemporary Physics
_____ **15.** Physics 3800 - Methods of Theoretical Physics
_____ **16.** Physics 4175 - The Electromagnetic Interaction

_____ **17.** **One of:**
- _____ Mathematics 1560 - Calculus I
- _____ Mathematics 1565 - Accelerated Calculus I (recommended)

_____ **18.** **One of:**
- _____ Mathematics 2560 - Calculus II
- _____ Mathematics 2565 - Accelerated Calculus II (recommended)

_____ **19.-20.** **One of the following Streams (a. or b.):**

a. Standard Stream:
- _____ Mathematics 2570 - Calculus III
- _____ Mathematics 2580 - Calculus IV

b. Accelerated Stream:
- _____ Mathematics 2575 - Accelerated Calculus III (recommended)
- _____ [1] One additional course (3.0 credit hours) in Mathematics

_____

_____ **21.** **One of:**
- _____ Biology 1010 - Cellular Basis of Life
- _____ Biology 1020 - Diversity of Life

_____ **22.** **One of:**
- _____ Physics 1000 - Introduction to Physics I
- _____ [2] Engineering 2060 - Engineering Mechanics

_____ **23.-25.** **Three of:**
- _____ Physics 3650 - Optics
- _____ Physics 3925 - Experimental Physics
- _____ Physics 4150 - Quantum Mechanics III
- _____ Physics 4200 - Advanced Mechanics

_____ **26.** [3] **One of:**
- _____ Physics 3840 - Introduction to Computational Physics
- _____ Physics 3900 - Intermediate Experimental Physics (Series)
- _____ Physics 4000 - Advanced Studies in Physics (Series)
- _____ Physics 4100 - Nuclear and Particle Physics
- _____ Physics 4250 - Solid State Physics

Notes

[1] Mathematics 3600 (Differential Equations I) is recommended.

[2] This course has a prerequisite or corequisite that is not required for the major.

[3] Offerings in Physics 3850 (Topics) and Physics 4850 (Topics) and one of Physics 3650, Physics 3925, Physics 4150 or Physics 4200 (if not used above) may be used to satisfy this requirement.

Since a number of courses are offered only on alternate years, students are advised to plan carefully to include the desired courses. In all cases, students (especially those planning for advanced studies in Physics) are encouraged to seek advice on their programs from any member of the Department of Physics and Astronomy.

It is recommended that students majoring in Physics include in their program courses in Biology, Chemistry, Computer Science, and Mathematics.

It is strongly recommended that a student attain a grade of 'C' or higher in any course used to satisfy prerequisites for courses in Physics and Mathematics.

Electives (14 Courses)

_____ **27.-40.** Fourteen additional courses (42.0 credit hours) chosen to complete program requirements

_____ 27._____
_____ 28._____
_____ 29._____
_____ 30._____
_____ 31._____
_____ 32._____
_____ 33._____
_____ 34._____
_____ 35._____
_____ 36._____
_____ 37._____
_____ 38._____
_____ 39._____
_____ 40._____

Optional Concentration: Theoretical Physics

Courses taken to complete the concentration will fill in as electives in the program requirements above.

For information about the Theoretical Physics concentration, see **Faculty of Arts and Science** in the 2026/2027 University of Lethbridge Calendar, www.ulethbridge.ca/ross/academic-calendar.

_____ **1.-5.** **Required Courses**

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

PROGRAM REQUIREMENTS (2026/2027)

Required courses and notes

Name:_____

ID: | | | | | | | | | |

Liberal Education List 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. Cross-listed courses count toward the limit for both disciplines (e.g. Geography 3225/Global Business 3225 counts toward the limit for Geography and Dhillon School of Business courses).

Only four courses (12.0 credit hours) in total from the Faculty of Education (EDUC), Faculty of Health Sciences (AMHC, HLSC, INHL, NURS, PUBH, and TREC), and the Dhillon School of Business (ACCT, AGEM, DGTR, FINC, GLBU, HRLR, IGBM, MGT, and MKTG) may be counted towards the Lib Ed Requirement.

To determine if a course has a Liberal Education designation, see School of Liberal Education in the 2026/2027 University of Lethbridge Undergraduate Calendar, www.ulethbridge.ca/ross/academic-calendar.

_____ **1.-4.** **List I: Fine Arts and Humanities**

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

_____ **5.-8.** **List II: Social Science**

_____ 5._____
_____ 6._____
_____ 7._____
_____ 8._____

_____ **9.-12.** **List III: Science**

_____ 9._____
_____ 10._____
_____ 11._____
_____ 12._____

General Requirements

_____ A minimum of 40 courses (120.0 credit hours) with a GPA of at least 2.00.

_____ A maximum of five Independent Study courses (15.0 credit hours) may be completed for credit towards the degree.

_____ A maximum of 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.

_____ A maximum of 24 courses (72.0 credit hours) may be completed from any one discipline for credit towards the degree. Disciplines are identified by a specific course label (e.g. KNES, ASTR, and HIST are separate disciplines).

_____ A maximum of 6.0 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).

_____ A maximum of six courses (18.0 credit hours) from disciplines offered 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 ACCT, AGEM, AMHC, CDEV, CRED, DGTR, EDUC, FINC, GLBU, HLSC, HRLR, IGBM, INHL, MGT, MKTG, NURS, PUBH, and TREC). Courses cross-listed between the Faculty of Arts and Science and another Faculty or School do not count towards this limit.

_____ Residence requirement: 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. At least half of the courses required in the major must be completed at the University of Lethbridge.

A **maximum** of 12 courses (36.0 credit hours) may be completed at the 1000 level (or lower) for credit towards the degree, excluding Activity courses (labelled PHAC and MUSE) and courses numbered in the range of 0520 to 0530.

_____ **1.-12.** **Introductory Course Limit**

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

A **minimum** of 15 courses (45.0 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, excluding Activity courses (labelled PHAC and MUSE). Out-of-faculty courses (i.e. labelled ACCT, AGEM, AMHC, CDEV, CRED, DGTR, EDUC, FINC, GLBU, HLSC, HRLR, IGBM, INHL, MGT, MKTG, NURS, PUBH, and TREC) will not meet this requirement.

_____ **1.-15.** **Senior Course Requirement**

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

Optional Minor: _____

For information about minors see **Minors** in the 2026/2027 University of Lethbridge Calendar, www.ulethbridge.ca/ross/academic-calendar.
Consult with an Academic Advisor if you wish to add a minor to your program.

_____ **1.-6.** **Required Courses**

_____ 1._____
_____ 2._____
_____ 3._____
_____ 4._____
_____ 5._____
_____ 6._____

RECOMMENDED SEQUENCING PLAN (2026/2027)

Recommended Course Sequence

Name:_____

ID: | | | | | | | | | |

Shown below is the recommended sequence of courses for your degree. Consult timetables for course offerings, prerequisites, and corequisites before registering each term as some courses may have limited offerings (ie. once a year, alternating years, or only offered in the Fall or Winter terms).
Consult with an Academic Advisor in your faculty if you wish to alter this sequence with regard to the specifically listed courses.
Note that this sequence was prepared based on course scheduling at the time of publication and <u>may</u> change during your studies.

First Year

Computer Science 1620
Mathematics 1410
One of: **Mathematics 1560** or **Mathematics 1565**
One of: **Mathematics 2560** or **Mathematics 2565**
Physics 1000
Physics 2000
Physics 2130
Lib Ed Requirement course
Lib Ed Requirement course
Lib Ed Requirement course

Second Year

Biology 1010 or Biology 1020
Chemistry 1000
One of: **Mathematics 2570** or **Mathematics 2575**
One of: **Mathematics 2580** or an additional course in MATH
Physics 2120
Physics 2150
Physics 2800
Physics 2925
Lib Ed Requirement course
Lib Ed Requirement course

Third Year

[1] Physics 3000/4000 level
[1] Physics 3000/4000 level
[1] Physics 3000/4000 level
[1] Physics 3000/4000 level
[1] Physics 3000/4000 level
[1] Physics 3000/4000 level
[1] Physics 3000/4000 level
Lib Ed Requirement course
Lib Ed Requirement course
Lib Ed Requirement course

Fourth Year

[1] Physics 3000/4000 level
[1] Physics 3000/4000 level
[1] Physics 3000/4000 level
[1] Physics 3000/4000 level
Elective 3000/4000 level
Elective 3000/4000 level
Elective 3000/4000 level
Elective 3000/4000 level
Elective
Elective

1. The term of offering for all senior Physics courses may vary. Students are strongly advised to consult with the Department of Physics and Astronomy regarding the sequencing of courses.

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.