What can I do with a Major in Physics?

The Physics Program at the University of Lethbridge

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. Physics involves observing and understanding natural phenomena.

The U of L offers a comprehensive Physics major in the Department of Physics & Astronomy, culminating in the completion of a Bachelor of Science degree. The foundation of the program is built in the first two years by a study of mechanics, waves, electricity and magnetism, optics, thermal physics, and modern physics. In the third and fourth years, students deepen their understanding of the fundamentals and study more advanced and specialized areas. Faculty members also ensure that students are provided with a wide view of physics, exposing them to all areas of the subject and describing a wide variety of applications.

Skills Developed

- Ability to Work Independently
- Able to Concentrate
- Analytical
- Aptitude for Science
- Communication
- Computer Knowledge
- Decisive
- Determined
- Enjoy Working with Data
- Imaginative & Curious
- Logical
- Methodical
- Objective
- Passion for Learning
- Patient & Persistent
- Problem-Solving Skills
- Self-Motivated & Responsible
- Teamwork
- Writing

Work Environments

Graduates have found careers in a variety of organizations and business sectors, including working within universities/research institutions, observatories, planetariums, science museums, nonprofit foundations, aerospace organizations, scientific supply companies, provincial and national government organizations, consulting firms, weather bureaus, aeronautics and space administrations and laboratories. Graduates have also pursued careers related to biotechnology (e.g. pharmaceutical companies and hospitals) and industry (e.g. petroleum companies and atomic/nuclear labs). A major in Physics also provides an excellent foundation for pursuing education (high school or university), engineering, medicine or dentistry. Graduates from this discipline have also gone on to work in law, journalism and management.
Key Areas of Specialization:
Acoustics, Astrophysics, Atomic & Molecular Physics, Biophysics, Condensed Matter Physics, Cosmology, Geophysics, High-Energy Physics, Medical Physics, Nanoscience, Nuclear & Particle Physics, Soft Matter Physics

Entry Level Job Titles

These jobs are normally intended for new graduates and require 0 to 2 years of experience. It is important to note that many entry level positions require some related experience or demonstrated ability to perform job-related tasks. Even those positions that do not require experience will still prefer an experienced candidate, if one is available.

• Controller Integration Engineer
• Electrical Engineer
• Hydrometric Technician/Technologist
• Junior Civil/Structural Engineer
• Junior Electrical Designer/Drafter
• Junior Electrical Engineer
• Junior Hydrologist
• Junior Process Engineer
• Process Engineer
• Production Engineering
• Project Coordinator
• Software Engineer
• System Engineer - Printing System
• Technical Professional

Note: The U of L offers various resources and programs to facilitate students in gaining work and volunteer experience. Find an entry level position on the CES job board or join the Management or Arts & Science Cooperative Education Programs. Summer jobs, part-time work, internship positions and volunteer experience help students to enhance their skillset and accumulate work experience for their future career.

Related Job Titles

These jobs generally require extensive, relevant work experience and/or further education.

• Aerospace Engineer
• Agriculture Engineer
• Air Traffic Controller
• Aircraft Maintenance Technician
• Aircraft Structure Technician
• Alternative Energy Technologist
• Archaeometrist
• Architect
• Architectural Technologist
• Astronaut
• Astronomer
• Astrophysicist
• Atmospheric Scientist
• Audiologist
• Audiometric Technician
• Avionics Technician
• Biophysicist
• Biomedical Engineer
• Chemical Engineer
• Chemical Engineering Technologist
• Chemist
• Civil Engineer
• Civil Engineering Technologist
• Climatologist
• Clinical Scientist
• Electric Engineering Technologist
• Electrical Power Plant Operator
• Electro Neurophysiology Technologist
• Engineering Design & Drafting Technologist
• Engineering Physicist
• Environmental Engineer
• Ergonomist
• Exploration Geophysicist
• Food Scientist
• Gemmologist
• Instrument Technician
• Instrumentation Engineering Technologist
• Laser Fusion Scientist
• Magnetic Resonance Technologist
• Mechanical Engineer
• Medical Doctor
• Medical Physics
• Meteorologist
• Molecular Physicist
• Oceanographer
• Petroleum Engineer
• Petroleum Engineering Technician
• Plastic Processing Technician
• Remote Sensing Technician
• Robotics Technician
• Secondary School Teacher
• Solar Energy Physicist
• University Professor
### Thinking Outside the Box: Other Possible Job Titles

On average, people change their careers three to five times in their lifetime. So, no matter what major you choose, you may still be interested in opportunities totally unrelated to your program of study. We encourage you to be open to all possibilities! Your undergraduate degree can be a springboard for other educational pursuits, and your transferable skills and experience can prepare you to work in a multitude of settings.

- Agrologist
- Athletic Therapist
- Banker
- Biochemist
- Biologist
- Biomedical Engineering Technologist
- Biotechnologist
- Cardiology Technologist
- Career & Technology Teacher
- Chiropractor
- Combined Laboratory & X-Ray Technologist
- Communication Technologist
- Computer Engineer
- Computer Network Administrator
- Computer Programmer
- Computer System Analyst
- Database Analyst
- Dentist
- Diagnostic Medical Sonographer
- Dietitian
- Drafting Technician
- Electric Motor System Technician
- Electrical Contractor
- Field Heat Treatment Technician
- Field Production Operator
- Financial Planner
- Forensic Laboratory Analyst
- Geographer
- Geological & Geophysical Technologist
- Geologist
- Geomatics Engineer/Technologist
- Geotechnical Engineer
- Helicopter Pilot
- Human Ecologist
- Industrial Designer
- Industrial Engineer
- Information System Consultant
- Interior Designer
- Kinesiologist
- Land Surveyor
- Landscape Architect
- Lawyer
- Mathematician
- Microbiologist
- Millwright
- Mining Engineer
- Nano Engineer/Technologist
- Nuclear Medicine Technologist
- Occupational Health and Safety Advisor/Officer
- Oceanographer
- Optometrist
- Pathologist
- Pharmacologist
- Physician
- Planetarium guide or lecturer
- Public Health Inspector
- Pyrotechnician
- Radar Project Manager
- Radiation Therapist
- Radiological Technologist
- Renewable Energy Manager
- Recording Engineer
- Satellite Engineer
- Science Communicator
- Seismic Worker
- Science Journalist
- Structural Engineer
- TV Science Advisor

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### Useful Resources

Recommended websites to assist in exploring the field of Physics and its career opportunities.

- Alberta Learning Information Service Occupational Profiles
  Astronomer, Physicist, Engineering Physicist

- U of L Careers in Physics Webpage

- Canadian Association of Physicists
  [http://www.cap.ca/](http://www.cap.ca/)

- The Canadian Organization of Medical Physicists
  [http://www.medphys.ca/](http://www.medphys.ca/)

- The Royal Astronomical Society of Canada
  [http://www.rasc.ca/](http://www.rasc.ca/)

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Institute of Particle Physics  
http://www.ipp.ca/

Institute of Physics  
http://www.iop.org

American Institute of Physics  
http://www.aip.org

National Research Council Canada  

Jobs in Physics  
http://jobs.physicstoday.org/

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**Campus Resources**

Career & Employment Services (CES)  
http://www.uleth.ca/ross/ces/

Career Counselling (Counselling Services)  
http://www.uleth.ca/counselling/

Academic Advising  
http://www.uleth.ca/ross/academic-advising

Native Student Advising  
http://www.uleth.ca/ross/native-student-advising

Student Success Centre – Study Skills, Learning Strategies & Tutoring  
http://www.uleth.ca/student-success-centre/

Accommodated Learning Centre  
http://www.uleth.ca/ross/accommodated-learning-centre/

International Centre for Students  
http://www.uleth.ca/international/

Registrar Office & Student Services  
http://www.uleth.ca/ross/

Scholarship & Students Finance  
http://www.uleth.ca/ross/student-finance/

U of L Students’ Union & Student Clubs  
http://www.ulsu.ca/

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**Campus Job Resources**

Career & Employment Services Job Board  
CES Job board

Arts & Science Applied Studies  
http://www.uleth.ca/artsci/applied-studies/students

Arts & Science Co-op Education & Internship  
http://www.uleth.ca/artsci/coop

Management Co-op Education  
http://www.uleth.ca/management/co-op

Study Abroad & Exchanges  
http://www.uleth.ca/international/content/study-abroad-exchanges

Management Study Abroad & Exchanges  
http://www.uleth.ca/management/study-abroad

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**Career & Employment Services (CES)**  
CES assists U of L students and graduates with their career exploration and work search needs.

AH154 Anderson Hall, Phone: 403-329-2000  
Mon- Fri: 9:00 a.m. to 12:00 p.m.  
1:00 p.m. to 4:00 p.m.

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