What can I do with a Major in **Biochemistry**?

### The Biochemistry Program at the University of Lethbridge

Biochemistry is the study of living systems at the molecular level. It is a demanding field that combines a thorough understanding of the molecular basis of matter and a detailed knowledge of biology. Biochemists use many of the same mathematical and physical tools developed by conventional chemistry, but apply those tools to the high-order complexity of living systems.

The Bachelor of Science program, majoring in Biochemistry, will help students develop a strong background in the basic sciences and extensive laboratory skills, while emphasizing the chemical and physical basis of life. Students will gain hands-on experience with the latest tools and technology used in Chemistry, Physics and Biological Sciences, such as nuclear magnetic resonance spectroscopy and advanced biophysics. Students will also develop molecular techniques like DNA sequencing, gene cloning and enzymology, and will have many opportunities to gain research experience.

### Skills Developed

- Analytical & Technical
- Apply Scientific Concepts to Solve Problems
- Communicate Ideas Clearly
- Computer Knowledge
- Creativity
- Curiosity
- Data Synthesis
- Determine Probabilities
- Formulate & Test Hypotheses
- Formulate Scientific Problems
- Formulating & Modeling
- Gather Data & Complete Laboratory Work
- Interpret Results
- Make Projections
- Mathematical
- Meet Deadlines
- Numerical Computation
- Oral & Written Communication
- Problem Solving
- Research
- Teamwork
- Understanding of Biological & Chemical Processes
- Work Independently

### Work Environments

Biochemistry graduates find employment in a variety of industries and organizations, such as cosmetics/perfume companies, educational institutions, environmental protection agencies, governmental agencies, healthcare providers, laboratories and research facilities, and various manufacturers. Graduates may also pursue careers working in administration, agriculture, biotechnology, conservation, drug development, education, environment, law, museums, or scientific publications/journals.

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For more information on the Biochemistry Major at the U of L:  
[http://www.uleth.ca/artscl/biochemistry](http://www.uleth.ca/artscl/biochemistry)

**Faculty of Arts & Science**  
E866 University Hall  
Phone: 403-329-2301  
Email: See [Contact Website](http://www.uleth.ca/ross/academic-advising)

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Key Areas of Specialization:

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.

- Biotech Analyst
- Data Management Specialist
- Entry Level Chemist
- Entry Level Scientist
- Entry Level Study Technician (Animal Operations)
- Fast Track Analyst (Pharmaceuticals)
- Instrument Service Specialist
- Junior Life Sciences Sales Specialist
- Lab Technician
- Laboratory Technology Specialist
- Manufacturing Chemist – Biotechnology
- Natural Resource Specialist/Ranger
- Pharmaceutical Consultant
- Quality Control Technician (Food Processing)
- Regulatory Affairs Associate (Pharmaceutical)
- Regulatory Data Specialist – Biotechnology
- Research Assistant (Veterinary Microbiology)
- Research Technologist
- Seasonal Logistics Technician (Mining)
- Stability Analyst
- Technical Officer
- Warehouse Coordinator – Narcotics Division

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.

- Academic Assistant
- Agricultural Chemist
- Agronomist
- Anesthesiologist
- Aquaculturalist
- Arborist
- Bacteriologist
- Biochemist
- Bioenergy Technician
- Bioengineer
- Bioinformatics Specialist
- Biochemical Engineer
- Biologist
- Biomedical Engineer
- Biotechnologist
- Botanist
- Brewmaster
- Chemical Analyst/Technologist
- Chemical Engineer
- Chemist
- Chiropractor
- Clinical Research Coordinator
- Commercial Research Technician
- Conservationist
- Crime Scene Analyst
- Cytologist
- Cytotechnologist
- Data Analyst
- Drug Developer
- Ecologist
- Embryologist
- Emergency Response Advisor
- Entomologist
- Environmental Chemist – Product development specialist
- Epidemiologist
- Equipment Validator
• Experimental Computational Biologist
• Fisheries Advisor
• Food & Drug Inspector
• Food Inspector
• Food Technologist
• Food Technology Researcher, Developer & Producer
• Forensic Scientist/Worker
• Genetic Engineer
• Geneticist
• Health Policy Planner
• High School Science Teacher
• Hunger Policy Analyst
• Industrial Hygienist
• Laboratory Demonstrator
• Laboratory Scientist

• Lawyer
• Marine Biologist
• Materials Researcher
• Medical Doctor
• Medical Illustrator
• Medical Researcher
• Microbiologist
• Molecular Biologist
• Occupational Hygienist
• Online Science News Journal Writer/Editor
• Parasitologist
• Park Naturalist
• Pathologist
• Pharmaceutical Researcher
• Pharmaceutical Sales Associate
• Pharmacist

• Physician
• Physiologist
• Principle Investigator
• Process Involvement Scientist/Manager
• Professor
• Protein Biochemist
• Quality Standards Manager
• Soil Scientist
• Technical Writer Journalist/Editor
• Technologist
• Toxicologist
• Veterinarian
• Water Quality Inspector/Analyst
• Zoologist

**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.

• Atmospheric & Space Scientist
• Chemical Equipment Operator
• Chemical Plant & Systems Operator
• Chemical Technician
• Dentist
• Entrepreneur
• Environmental Auditor
• Environmental Compliance Inspector
• Forester
• Gas Plant Operator

• Hazardous Waste Management Technologist
• Health & Safety Inspector
• Hydrometric Technician/Technologist
• Industrial Safety & Health Engineer
• Instructional Coordinator
• Inventor
• Journalist
• Nutritionist
• Occupational Health & Safety Advisor
• Patent Attorney

• Policy Advisor
• Pollution Control Technologist
• Precision Agriculture Technician
• Public Health Advisor
• Quality Control Analysts
• Reclamation Specialist
• Remote Sensing Technician
• Sales Representation
• Water & Wastewater Operator
• Water Resource Specialist

**Useful Resources**

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

Alberta Learning Information Service Occupational Profile  [Biochemist](http://www.chemistry.ca/)

Chemical Institute of Canada  [http://www.chemistry.ca/](http://www.chemistry.ca/)

Canadian Society for Medical Laboratory Science  [http://www.csmls.org/](http://www.csmls.org/)

Canadian Society of Molecular Biosciences  [http://www.csmb-scbm.ca/](http://www.csmb-scbm.ca/)

Canadian Bioethics Society  [http://www.bioethics.ca/](http://www.bioethics.ca/)
Alberta Society of Professional Biologists  
http://aspb.ab.ca/

American Society for Biochemistry and Molecular Biology  
http://www.asbmb.org/

BioTalent Canada  
http://www.biotalent.ca/

BIOTECanada  
http://www.biotech.ca/

Canadian Society of Clinical Chemists  
http://www.cscc.ca/en/

Canadian Association of Science Centres  
http://www.canadiansciencecentres.ca/

Chemical Institute of Canada  
http://www.cheminst.ca/

Canadian Society of Pharmacology and Therapeutics  
http://pharmacologycanada.org/

Canadian Journal of Biochemistry and Cell Biology  
http://www.nrcresearchpress.com/loi/cbc

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/

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

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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