



Faculty of Arts & Science

# Agricultural Biotechnology



*What do you love?*

Do you enjoy thinking up new solutions to environmental issues? Do you believe that science and technology hold the answers to many of our problems? Are you devoted to providing food for the planet? Do you want to be the one to make a difference?

Unearth your passion in Agricultural Biotechnology.

University of  
**Lethbridge**



Faculty of Arts & Science

# What is Agricultural Biotechnology?

Agricultural Biotechnology examines agriculture and the natural world, emphasizing the relationships between food production, the environment, science and society.

The program focuses on the life sciences, with prominence given to the application of Biotechnology in agriculture. It also delves into agriculture's associated sectors including: government, policy development, farm production, environmental implications and agricultural sciences.

Studying Agricultural Biotechnology will give you a strong science and Economics background rooted in both theoretical knowledge and practical experience, and focusing on the issues, research and course materials relevant to agriculture.

In this lab-extensive, hands-on learning environment, you will concentrate on the physiology of microbes, plants and animals, as well as the systems they thrive in—helping you build technical skills in areas such as Biochemistry and Molecular Biology.

As a multidisciplinary major, Agricultural Biotechnology takes full advantage resources and course offerings in the Biology, Chemistry and Biochemistry, Geography and Economics Departments. This multi-faceted approach allows you to explore new applications in science and develop fresh perspectives about how to address challenges in food production through changes in economics, production or diversification.

## Student Clubs

The Agricultural Students' Society has an active presence on campus, organizing a number of events including tours of local agriculturally based businesses and research facilities.

## Agricultural Biotechnology Programs

The Bachelor of Science (BSc) in Agricultural Biotechnology is a 40-course program that will provide you with comprehensive science-based training. You may also opt for a Concentration in Agricultural Business.

## Alberta Institute of Agrologists (AIA)

Once you have completed your degree, you may apply to the Alberta Institute of Agrologists (AIA) to be registered as a Professional Agrologist within Alberta. Contact your program Coordinator early in your degree for further information.

## Agricultural Biotechnology Courses

Course selections for the program will vary, but may include:

- Evolution of Agriculture
- Principles of Genetics
- Biochemistry
- Molecular Biotechnology
- Principles of Ecology
- Evolution
- Plant Biotechnology
- Animal Physiology
- Probability & Statistics
- Organic Chemistry
- Physics
- Microbiology
- Agricultural Policy
- Agricultural Economics

For more information, see your Program Planning Guide or speak to an Academic Advisor.

## Honours Thesis

If your GPA is high enough in your fourth year, you can opt to complete an Undergraduate Thesis course through one of your host departments, such as Biology 4995. This is an excellent opportunity for you to earn an "Honours Thesis" designation on your degree. Contact the Program Coordinator for more information.



“

I am proud to be a student at the UofL because it has a great reputation as a high-quality university with smaller class sizes.

Ryan Booth

”



# What Are Your Future Prospects?

## Skills Acquired

In addition to developing exceptional communication skills, you will develop critical and analytical problem-solving skills, research and information management skills and improve your attention to detail. You will leave the program with a strong ability to summarize research findings, excellent fieldwork and risk assessment techniques, as well as an in-depth knowledge of environmental issues. You will gain an understanding of economics at an individual and global scale. You will be familiar with basic technologies and tools commonly used in Chemistry, Biochemistry, Physics and Mathematics.

## Graduate Studies

Research is traditionally undertaken by those holding a Master's Degree (MSc) or a Doctorate (PhD). Your undergraduate degree will prepare you for post-graduate studies, whether you choose to do your Master's here at the University of Lethbridge or other institutions around the world.

## Professional Disciplines

Your Bachelor of Science in Agricultural Biotechnology provides an excellent foundation for work in Environmental Law, Management or the Veterinary Sciences.

## Our Faculty Members & Their Research

Faculty members in all participating departments are happy to involve undergraduate students in their research, using state-of-the-art facilities and equipment. Our faculty members often collaborate with other departments, community members and employers on research projects—giving you the opportunity to get additional hands-on experience.

Our location's strong farming and ranching economy offers the opportunity to experience the practical application of agricultural research and methodology. You may have the opportunity to participate in field studies or gain employment with local researchers at Agriculture and Agri-Food Canada, Lethbridge Research Centre, the Animal Disease Research Institute, Lethbridge College and numerous agriculturally based businesses throughout Southern Alberta.

## Related Fields

Here are just a few of the options potentially open to you once you've earned your degree:

- Plant Pathology
- Immunology
- Medicine
- Agricultural Engineering
- Cellular Biology
- Farm Consulting
- Animal Science
- Rangeland Evaluation & Management
- Agrology
- Sales & Business
- Resource Economy
- Entomology
- Horticulture
- Forestry
- Animal Health Inspection
- Agronomy
- Water Resource Management
- Pest Management & Biocontrol
- Environmental Sciences
- Waste & Compost Management

## Current Research & Areas of Interest:

- Plant Biotechnology
- Crop Production
- Agriculture & the Environment
- Molecular Biology
- Plant Hormone Production
- Water Toxicology
- Beef Processing in Canada
- Geographical Information Science
- Bioproducts & Bioprocesses
- Pests & Pest Control
- Farm-Level Risk Assessment
- Global Environmental Change
- Water Resources
- Environmental Microbiology
- Plant Breeding
- Functional Food
- Nutraceutical Development
- Edible Oil Additives

*Are you ready to Discover Your Passion?*

> **DISCOVER.**[ulethbridge.ca](http://ulethbridge.ca)

University of Lethbridge  
4401 University Drive  
Lethbridge, AB T1K 3M4  
403 329 2467  
agbiotech@uleth.ca  
ulethbridge.ca/agbiotech

Academic Advising  
SU060  
Students' Union Building  
403 329 5106  
artsci.advising@uleth.ca  
ulethbridge.ca/artsci/advising

## Put Your Knowledge to Work

Whether you're looking for a more in-depth learning experience by assisting with research projects or by testing your knowledge in a real-life setting, we can help. Combined with your required coursework, the programs outlined below will provide you with a solid foundation for further studies and an excellent framework for a challenging and rewarding career—whatever direction you decide to go.

## Research & Independent Studies

In addition to your regular courses, you have the opportunity to participate in Independent Studies. You're able to contribute to departmental activities by volunteering on research projects or through employment as a Research Assistant.

If your GPA is high enough, you can also enrol in undergraduate thesis-based courses where research is a component of your studies. There are field school opportunities available in some disciplines, as well as many opportunities to study abroad.

For current Research or Independent Studies opportunities, contact the Department directly.

## Applied Studies

Applied Studies is another special opportunity offered to all Arts & Science students as a way to earn course credit for career-related paid, volunteer or Community Service work experience. This program is specially designed to allow you to integrate principles learned in the classroom in a practical work setting.

For more information on Applied Studies, visit:  
[ulethbridge.ca/appliedstudies](http://ulethbridge.ca/appliedstudies)

## Co-operative Education & Internships

The Faculty of Arts & Science is proud to offer you the chance to participate in our award-winning Co-op Program—the only one of its kind in Alberta. Co-op allows you to gain work experience directly related to your studies and make invaluable contacts in the workforce, all while earning a competitive salary. Completion of the program allows you to receive a Co-op designation on your degree and, most importantly, a kick-start to your career the minute you graduate.

For more information on Co-operative Education & Internships, visit:  
[ulethbridge.ca/coop/artsci](http://ulethbridge.ca/coop/artsci)



Join us online!



[ulethbridge.ca](http://ulethbridge.ca)



[@ulethbridge.ca](https://twitter.com/ulethbridge.ca)



**DISCOVER**  
UNIVERSITY OF LETHBRIDGE

\*This brochure should be used in conjunction with the University of Lethbridge calendar, which is the final authority regarding program requirements and academic regulations.