



Lakehead  
UNIVERSITY

FACULTY OF  
**GRADUATE STUDIES**  
VIEWBOOK / 2022

[GRADUATESTUDIES.LAKEHEADU.CA](https://graduatestudies.lakeheadu.ca)





# CASES BUILDING

CASES (Centre for Advanced Studies in Engineering and Sciences) is Lakehead University's newest facility on the Thunder Bay campus. This 4,000 square metre building has space for over 80 graduate students, including a graduate student lounge and patio. Housed within CASES is INGENUITY, a student incubator zone where the great ideas of tomorrow come to life. Students and faculty create knowledge through research, and CASES will help transform this knowledge into innovation. Connected by a walkway to the library and Lakehead International, CASES is a hub for research, innovation, entrepreneurship, and social connection among students, faculty, industry, and community partners.

## LAKEHEAD UNIVERSITY IS NO ORDINARY PLACE



I wish you a warm welcome to Lakehead University. For five years in a row (2015-2019), RESEARCH Infosource, Canada's leading research ranking agency, awarded Lakehead University the title of Canada's Research University of the Year in our peer category. This is unprecedented in Canada and reflects our strong commitment to being a research-intensive university while still being committed to a high quality and personal educational experience. Our continued success in research and innovation is largely due to the quality of graduate programs we offer, as well as our award-winning faculty and students. Our Research Plan (2019-2024) identifies our research priorities and highlights the graduate programs that relate to each priority. You will find the list very extensive. At Lakehead University, we have a number of world-class institutes and research centres. A look at our centres will make it easy for you to identify leading researchers and areas where you can conduct research that ignites your passions and makes a difference. The impact of research goes far beyond the lab at Lakehead University. Our Office of Innovation, Partnerships and Economic Development can help you commercialize your innovations and develop partnerships with industry and government to facilitate knowledge transfer and community connections. The Faculty of Graduate Studies is located in the Centre for Advanced Studies in Engineering and Sciences (CASES). As we look forward to resuming face-to-face activities, this building will again be a hub for graduate students to gather in the graduate student lounge to socialize and connect over shared research interests. CASES is also home to Ingenuity, Lakehead University's first student business incubator. We are increasingly seeing that graduate students are looking to connect their research to innovation. This often takes the form of developing start-up companies and other forms of commercialization. The resources and space offered at Ingenuity can help with this development. Throughout the year, Ingenuity offers workshops on intellectual property, commercialization, and the entrepreneurial ecosystem. Training of highly qualified personnel is a priority at Lakehead University. Students from the masters to postdoctoral levels are able to access state-of-the-art equipment and receive excellent mentorship from our faculty. Whether you are a budding entrepreneur or researcher, boundless opportunities await you here at Lakehead University, and we hope that you will become one of our proud alumni.

**Andrew P. Dean, PhD**, Vice-President, Research and Innovation



**Lakehead offers 40 Graduate Programs at Master and PhD levels. Students have the ability to work closely with their supervisor due to our smaller student population.**

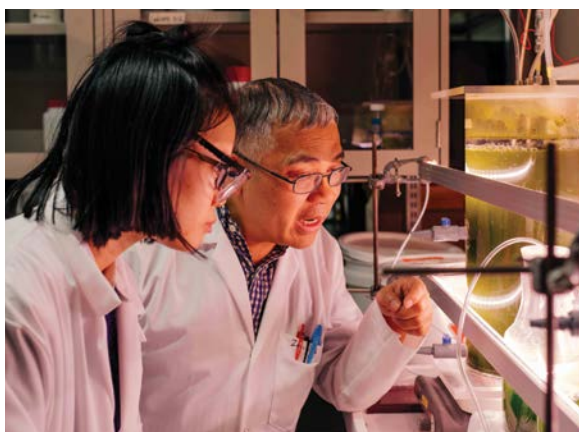
The Faculty of Graduate Studies at Lakehead University welcomes you to explore our exceptional graduate programs and potential research opportunities outlined in this guidebook. As a comprehensive and research-intensive university, Lakehead's graduate programs endeavour to provide you with the scholarly student-centered environment necessary to pursue your personal, professional and intellectual development. Lakehead University has developed the Centre for Advanced Studies in Engineering and Sciences Building (CASES) to further inspire top-tier research and innovation. This building houses a dedicated lounge and outdoor patio for our graduate students to study, collaborate or socialize. In addition, it is home to four of Lakehead's newest Canada Research Chairs, three research support units, The Faculty of Graduate Studies, more than seven leading research programs and laboratories, and INGENUITY – a business incubator space. At Lakehead University, your graduate experience extends beyond the lab or classroom, as many of our programs offer placements, fieldwork, or co-op opportunities, and plenty of chances to socialize with fellow students on or off campus. I encourage you to explore the many unconventional opportunities available for you to engage with our community of scholars at Lakehead University, and I look forward to greeting you at one of our campuses.



**Chander Shahi, PhD**, Dean, Faculty of Graduate Studies



INGENUITY incubator space



CASES Advanced Wastewater Biohazard Lab



CASES atrium



## OUR CITY - THUNDER BAY

Experience the best in Canada with a dynamic city life along with the most breathtaking natural backdrop. You will find it difficult to imagine a more beautiful and natural place to live and learn. Situated in the heart of Canada on the north shore of Lake Superior, Thunder Bay is the largest urban centre between Winnipeg, Manitoba and Toronto, Ontario. A city with deeply-rooted Indigenous and European cultures, Thunder Bay is truly a culturally-diverse community. From live theatre, festivals and concerts, to shopping, great nightlife and a vibrant arts and culture scene, there is something for everyone.

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

[lakeheadu.ca/thunder-bay](http://lakeheadu.ca/thunder-bay)

Discover all Thunder Bay has to offer:

**Thunder Bay Experience Guide**

[visitthunderbay.com](http://visitthunderbay.com)

**The Walleye** Thunder Bay Arts & Culture Alternative

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

### OUR HOMETOWN FACTS

**111,000**  
POPULATION

**100+ RESTAURANTS**  
FEATURING FOODS FROM  
AROUND THE WORLD

**3 MAJOR AIRLINES**  
THUNDER BAY INTERNATIONAL AIRPORT -  
AIR CANADA, WESTJET AND PORTER

**7 SHOPPING  
DISTRICTS**

**305 DAYS OF  
SUNSHINE**  
PER YEAR

**20+ ANNUAL  
CITY FESTIVALS**

### OUR CAMPUS FACTS

**57,000+**  
ALUMNI AROUND THE WORLD

**1,000**  
GRADUATE STUDENTS

**100+  
HECTARES**  
OF CAMPUS SPACE

**40+ GRADUATE  
PROGRAMS**

**1 LAKE+  
RIVER** RUNNING  
THROUGH  
CAMPUS



## OUR CITY - ORILLIA\*

Nestled on the shores of Lake Couchiching and Lake Simcoe near the Greater Toronto Area, the City of Orillia is vibrant with over 30,000 people. Orillia has all the amenities of a large urban centre, with small-town charm that offers year-round opportunities for arts, culture, recreation and music.

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

[lakeheadu.ca/about/orillia-campus](http://lakeheadu.ca/about/orillia-campus)

### OUR HOMETOWN FACTS

**30,000**  
POPULATION

**10 km**  
WATERFRONT TRAILS

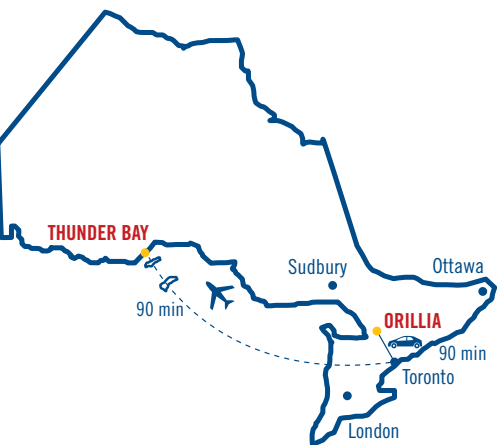
**100+  
RESTAURANTS**

**20 MINUTE  
DRIVE FROM  
BARRIE**

### OUR CAMPUS FACTS

**ENVIRONMENTALLY**  
DESIGNED AND CERTIFIED CAMPUS (LEED)

**DISCOUNTED & DEDICATED  
BUS SERVICE DAILY**  
FROM THE CITY OF BARRIE TO ORILLIA CAMPUS



# STUDENT SERVICES INFORMATION

At Lakehead, we are here for you. We understand that university life at times can become stressful, and overwhelming, and we commend you for taking on this incredible challenge. We are proud to offer several supports, programs, and opportunities to promote your overall health and well-being.

## INDIGENOUS STUDENT SERVICES CENTRE

Through our Indigenous Student Services Centre, we provide a culturally-supportive environment to all Indigenous students in a variety of ways: academic/cultural workshops, cultural teachings, feasts, sweat lodge ceremonies, annual fall harvest and LUNSA Powwow. We also offer an Indigenous Student Lounge in Thunder Bay that acts as a hub for student activities throughout the year.

[lakeheadu.ca/indigenous](http://lakeheadu.ca/indigenous)

## ATHLETICS

Our on-campus fitness facilities include the C.J. Sanders Fieldhouse, a 15,000 square-foot gymnasium, and The Hangar, a 50,000 square-foot student athletic facility. Together, they feature: weight rooms, cardio machines, hot yoga studio, beach volleyball courts, Olympic-sized swimming pool, indoor track, astro-turf field, outdoor sports fields, change rooms and saunas. There's also always the opportunity to take in a Thunderwolves game or event and cheer on your favourite university team.

We are proud to have a brand new athletics facility at our Thunder Bay campus, for details, please visit: [thunderwolves.ca/facilities/wolf-den/](http://thunderwolves.ca/facilities/wolf-den/)

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

[lakeheadu.ca/orillia-athletics](http://lakeheadu.ca/orillia-athletics)



## GRADUATE STUDENT ASSOCIATION (GSA)

Lakehead University Graduate Students' Association (LUGSA) is the fully autonomous student body that represents full and part-time graduate students registered at Lakehead University. We are committed to providing assistance, information and services necessary to help graduate students successfully meet their goals. We organize several social, academic and recreational events throughout the school year. All graduate students are welcome to become members of the GSA.

\* While all graduate programs are offered from our Thunder Bay campus, selected programs have students located in Orillia. Our Education, Biology, and Social Work programs are offered at both Orillia and Thunder Bay campuses.



## FACULTY OF GRADUATE STUDIES

The Faculty of Graduate Studies offices are located on the upper level in the new CASES building. Our staff are happy to assist prospective and current graduate students in many areas including: admissions, program requirements, regulations, campus information, potential financial support, thesis processing and much more. We want your experience at Lakehead to be positive and rewarding. Make us your first stop if you have any questions throughout your program.

[graduatestudies.lakeheadu.ca](http://graduatestudies.lakeheadu.ca)

## STUDENT CENTRAL

At Student Central you will be able to access everything you need – from technical issues with course registration to help with your OSAP application, Student Central is the place to go. Our dedicated, cross-trained Student Central Professionals are able to solve issues from start to finish with improved consistency of service and answers.

[lakeheadu.ca/studentcentral](http://lakeheadu.ca/studentcentral)



## LIBRARY

As a graduate student, we know you balance your time between learning, researching and instructing. The Lakehead University Library provides you access to the resources, space and informational services you will need to excel as a student, researcher and instructor. The Graduate Reading Room is a quiet space dedicated to you, located on the 4th floor of the Chancellor Paterson Library.

[library.lakeheadu.ca](http://library.lakeheadu.ca)

## LUSU

The Lakehead University Student Union (LUSU) represents all students studying at Lakehead University. We are over 8,000 strong, uniting undergraduate and graduate, full and part-time, and domestic and international students. Founded in 1981, LUSU has been a part of student life for over thirty years. We are a democratic institution run by students who are elected by students.

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

## NANABIJOU CHILD CARE CENTRE

Inspired by two Lakehead University students and the continuous support of Lakehead University administration, Nanabijou Child Care Centre opened in January 1988. Over time, we have expanded our services; however, it has always been our mission to provide inclusive, affordable, licensed quality child care. Nanabijou Child Care Centre is located on the Lakehead University Campus in Thunder Bay. We currently provide care for 108 children ranging from infancy to school age.

[lakeheadu.ca/nanabijou](http://lakeheadu.ca/nanabijou)

## STUDENT ACCESSIBILITY SERVICES

Student Accessibility Services (SAS) coordinates services and facilitates the provision of reasonable academic accommodations for students with documented disabilities/medical conditions. SAS staff collaborate with students, staff and faculty in developing strategies for a successful learning experience while maintaining the academic standards and integrity of Lakehead University. To learn more about our services please visit:

[lakeheadu.ca/sas](http://lakeheadu.ca/sas)

## STUDENT HEALTH AND WELLNESS

Our Student Health and Wellness Centres are environments that facilitate physical, emotional, intellectual and spiritual health. In accordance with our vision, these Centres offer medical care, mental health counselling, and clinical referrals to support students' personal, academic, and professional success.

[lakeheadu.ca/shw](http://lakeheadu.ca/shw)

## STUDENT SUCCESS CENTRE

The Student Success Centre has many programs and support services in place to help you achieve your academic and personal goals while studying at Lakehead University. We provide academic support through career exploration, co-operative opportunities and leadership development.

[lakeheadu.ca/ssc](http://lakeheadu.ca/ssc)



# ADMISSION PROCESS

We are proud to offer a diverse selection of Master, PhD, and Diploma programs at the graduate level. Our students enjoy the guidance and support of highly dedicated faculty, competitive funding opportunities, and considerable freedom as to what and where they will study.

Please be advised that meeting the minimum admission requirements does not guarantee admission into a program. Also, departments may require further documentation to support your application. Please review the links provided in this guide to determine specific admission requirements.

### Steps to Apply for Admission to Graduate Studies at Lakehead University:

- 1 EXPLORE OUR GRADUATE PROGRAMS
- 2 REVIEW ADMISSION REQUIREMENTS
- 3 PREPARE YOUR APPLICATION
- 4 APPLY ONLINE

[lakeheadu.ca/academics/graduate/applying](http://lakeheadu.ca/academics/graduate/applying)

## MASTER'S DEGREE

Except where otherwise stated in the admission requirements of a particular program, domestic applicants to Master's degree programs must have a minimum B average on the last 20 half credits or equivalent at the third or fourth year level from a four year undergraduate degree.

For a complete list of our program offerings, please visit:

[lakeheadu.ca/masters-programs](http://lakeheadu.ca/masters-programs)

## DOCTORAL DEGREE

Applicants for admission must be graduates of a recognized university and show evidence of scholarly achievement. Students must have a Master's degree or its equivalent with an academic average as specified by the desired program. Applicants for our Doctoral programs are strongly encouraged to engage a supervisor for their studies before they apply.

For a complete list of our program offerings, please visit:

[lakeheadu.ca/doctoral-programs](http://lakeheadu.ca/doctoral-programs)

## GRADUATE DIPLOMA

Please see individual faculty pages or for more information, visit:

[lakeheadu.ca/graduate-diploma](http://lakeheadu.ca/graduate-diploma)

## ADDITIONAL ADMISSION REQUIREMENTS

The recommended deadline for admission and funding for most programs is February 1st. However, please be advised of the firm deadline requirements listed below:

- ▶ Joint PhD Educational Studies – November 15th, 2021
- ▶ Clinical Psychology (MA & PhD) – December 15th, 2021
- ▶ PhD Health Sciences – January 15th, 2022
- ▶ Health Sciences & Public Health (MHSc & MPH) – February 1st, 2022

## APPLICATION FEES

\$100 CAD fee applies for each online program application.

## TUITION FEES

For information regarding fees, please visit:

[lakeheadu.ca/graduate-studies-fees](http://lakeheadu.ca/graduate-studies-fees)

## START DATES

A Fall (September), Winter (January) or Spring (May) intake may be available for your program; please visit the link below to confirm specific program start date options:

[lakeheadu.ca/graduate-start-terms](http://lakeheadu.ca/graduate-start-terms)





# INTERNATIONAL STUDENTS

At Lakehead, we welcome students from over 80 different countries. Lakehead University International offers a number of specialized services and supports to help you throughout your studies as well as during your transition to Canada, such as: study permit assistance, free airport pick-up services, English Language Program, on-campus IELTS testing centre, UHIP – University Health Insurance Program, homestay, and social & cultural activities.

## LAKEHEAD UNIVERSITY INTERNATIONAL

As an International Student, you may have questions about Lakehead University and student life. At Lakehead International, we provide many services to assist with your transition, and we are committed to making your time here the best it can possibly be. The team at Lakehead International is available to answer any questions about admission, advising, registration, student visas and any other support you may need along the way.

[lakeheadu.ca/international](http://lakeheadu.ca/international)  
[international@lakeheadu.ca](mailto:international@lakeheadu.ca)

## LAKEHEAD UNIVERSITY WELCOMES INTERNATIONAL STUDENTS FROM AROUND THE WORLD.

### ADMISSION REQUIREMENTS AND DEADLINES FOR INTERNATIONAL APPLICANTS

The firm deadline to receive complete applications is May 15th. Our minimum admission requirement for international applicants is 75% or 3.0 on a 4 point Canadian scale, with an accredited university degree equivalent to a Lakehead University 4 year degree. Please note that admission into our programs is competitive, and meeting the minimum academic requirement does not guarantee admission. Should you wish to apply to a thesis program, we strongly advise you to contact a potential supervisor, and have your proof of English language proficiency complete.

At this time, we do not pre-assess qualifications.

### ENGLISH LANGUAGE PROFICIENCY REQUIREMENTS FOR ADMISSION

Applicants whose first language is not English must demonstrate they can cope with the language demands of an English language university. Applicants to graduate programs may meet our English language requirements if they have successfully completed 3 years of full-time, post-secondary study in English.

Applicants whose native language is not English, and who cannot verify having recently studied in an English language post-secondary system for more than three years of full-time study, will be required to present proof of English language proficiency as follows:

Test	Minimum Score
TOEFL - Test of English as a Foreign Language (Paper based)	550 (no component score less than 50)
TOEFL (Computer based)	213 (no component score less than 17)
TOEFL (Internet based)	80 (no component score less than 19)
IELTS - International English Language Testing System	6.5 (no individual score less than 6.0)
MELAB - Michigan English Language Assessment Battery	85
CAEL - Canadian Academic English Language Assessment	60

Lakehead University's Institution Code for TOEFL scores is 0888.

Some academic units may require a higher score and meeting the minimum requirements does not guarantee admission to Lakehead University.

# FUNDING OPPORTUNITIES

In the 2020/2021 academic year, we offered over 200 Faculty Research Awards to our graduate students with a combined value of approximately \$1.8 million.

### ENTRANCE AND IN-COURSE SCHOLARSHIPS & AWARDS

As a full-time graduate student at Lakehead University, you have the opportunity to apply for several scholarships and awards throughout the academic year. Many of these scholarships and awards are program specific, but there are several opportunities that are open to students in any program. It is important to regularly visit our graduate funding website listed below. There you will find all available in-course financial offerings, as well as any eligibility requirements, application forms, and deadlines to submit.

### ENTRANCE AND IN-COURSE BURSARIES

If you are a full-time graduate student at Lakehead University who demonstrates financial need, you are invited to apply for our bursary program. Many of the bursary possibilities are made available by our generous donors. These bursaries are provided to help cover the costs of tuition and supplies.

Find further information regarding funding opportunities at: [myAwards.lakeheadu.ca](http://myAwards.lakeheadu.ca)

### EXTERNAL AWARDS

External awards programs are offered by federal and provincial scholarship agencies and often require you to apply a year in advance of beginning your graduate studies. Many of these awards are adjudicated competitions that require a separate application and are considered highly competitive as the monetary value of these scholarships can be \$15,000 and higher. For additional information, please visit the graduate funding website listed below.

[lakeheadu.ca/graduate-student-funding](http://lakeheadu.ca/graduate-student-funding)

### MORE OPPORTUNITIES

Graduate Assistant appointments may be offered to eligible full-time graduate students (including Visa students) at a rate of \$10,402.66 (2020-21) at the Master's level; and of \$11,344.35 (2020-21) at the Doctoral level. A regular appointment constitutes a maximum of 270 hrs of work over the Fall and Winter terms averaging not more than 10 hrs of work per week.

### FACULTY RESEARCH AWARDS

A stipend may be paid to a full-time degree candidate for research or academic activities relevant and related to the student's field(s) of study within the academic program. Faculty Research Awards are awarded by the student's supervisor. In the 2020/2021 academic year, we offered over 200 Faculty Research Awards to our graduate students with a combined value of approximately \$1.8 million.



# COMMUNITY-BASED LEARNING

At Lakehead University, some of our graduate programs offer the opportunity to participate in Community-Based Learning, a strategy that uses a variety of instructional methods, which can help students better engage with, preserve, and transfer knowledge. These opportunities may include:

- ▶ Fieldwork
- ▶ Co-op
- ▶ Practicum
- ▶ Internship





# ONE OF THE TOP UNIVERSITIES IN CANADA IN INNOVATIVE RESEARCH

**INGENUITY** – Lakehead’s first student business incubator space will nurture start-up companies through business mentorship and entrepreneurship training. The strategic vision for **INGENUITY** is to foster an entrepreneurial culture, create employment and self-employment opportunities, and to contribute to the region’s economic development by leveraging existing community resources to deliver a range of on-campus entrepreneurship activities. One of the main goals of **INGENUITY** will be to provide a professional working environment, teach essential entrepreneurial skills, and facilitate business development through mentorship to help solve the problems new fledgling ventures face. The most important outcome of **INGENUITY** to Lakehead University is to promote awareness about entrepreneurial resources, programming, and opportunities for students, and, in turn, to create and support entrepreneurial culture and passion on-campus.

The **INGENUITY** District within **CASES** utilizes 4232 square feet, and this space includes:

- ▶ Incubator/co-working space
- ▶ **INGENUITY** Connections Theatre
- ▶ Makerspace (3D Printer Room)
- ▶ Media room
- ▶ Rental offices
- ▶ Bookable meeting rooms

Programming for **INGENUITY** will include:

- ▶ Workshops and speakers series
- ▶ Competitions
- ▶ Start-up grants for students
- ▶ Lunch-and-learns
- ▶ Boot camps
- ▶ Mentor network access
- ▶ Professional development training

## RESEARCH AND INNOVATION WEEK

As a comprehensive and research-intensive university, Lakehead strives to nurture discovery, support innovation, and advance achievement. Through close collaboration with local and global communities, ideas put forth by our talented researchers and students have created meaningful impacts and have led to the emergence of new companies and businesses. Research and Innovation at Lakehead University is celebrated annually during our Research and Innovation Week.

During this week, graduate students have the opportunity to participate in the 3MT® competition, and the winner moves on to compete at the provincial level. Participating in a 3MT® competition increases a student’s capacity to effectively explain his or her research in three minutes, in a language appropriate to a non-specialist audience. Competitors are allowed one PowerPoint slide, but no other resources or props. Will you accept the challenge?



[lakeheadu.ca/research-and-innovation-week](http://lakeheadu.ca/research-and-innovation-week)



# RESEARCH CENTRES AND INSTITUTES

Lakehead University is committed to fostering interdisciplinary and trans-disciplinary research in partnership with industry, community organizations and government. Through our Research Centres and Institutes, we foster intellectual environments in which researchers and students combine their expertise to create new forms of inquiry and new types of solutions.

## BIOREFINING RESEARCH INSTITUTE (BRI)

BRI creates novel research and development opportunities, new technology models and jobs, and value-added products from renewable resources that ultimately lead to reduced dependence on fossil fuels and lower greenhouse gas emissions.

e: [admin.bri@lakeheadu.ca](mailto:admin.bri@lakeheadu.ca)  
t: (807) 343-8140 ext 8863

## CENTRE FOR EDUCATION AND RESEARCH ON AGING & HEALTH (CERAH)

CERAH’s mission is to advance health and social care for an aging population and promote the health and well-being of people aging across the lifespan.

**Dr. Katherine Kortess-Miller, Director**  
e: [cerah@lakeheadu.ca](mailto:cerah@lakeheadu.ca)  
t: (807) 766-7294

## CENTRE OF EDUCATION AND RESEARCH ON POSITIVE YOUTH DEVELOPMENT (CERPYD)

CERPYD is focused on generating, disseminating and applying knowledge about children and adolescents and their well-being, while specializing in the areas of mental health, addictions, education, and youth justice.

**Dr. Ed Rawana, Director**  
e: [ed.rawana@lakeheadu.ca](mailto:ed.rawana@lakeheadu.ca)  
t: (807) 343-8453

## CENTRE FOR INNOVATION AND ENTREPRENEURSHIP RESEARCH (CIER)

The primary purpose of the Centre for Innovation and Entrepreneurship Research (CIER) is to promote and support research on innovation and entrepreneurship at Lakehead University.

**Dr. Michael Dohan, Director**  
e: [msdohan@lakeheadu.ca](mailto:msdohan@lakeheadu.ca)  
t: (807) 343-8635

## CENTRE OF EXCELLENCE FOR SUSTAINABLE MINING AND EXPLORATION (CESME)

CESME’s purpose is to encourage, develop and support research, education and outreach activities that result in responsible economic development and sustainability for all stakeholders involved in and affected by mineral extraction.

**Dr. Peter Hollings, Director**  
e: [cesme@lakeheadu.ca](mailto:cesme@lakeheadu.ca)  
t: (807) 343-8329

## CENTRE FOR HEALTH CARE ETHICS (CHCE)

CHCE’s mission is to foster high quality, ethical health care through research, education, and capacity building. We help people make ethical decisions in health care.

**Dr. Kristen Jones-Bonfiglio, Director**  
e: [chce@lakeheadu.ca](mailto:chce@lakeheadu.ca)  
t: (807) 343-8126

## CENTRE FOR NORTHERN STUDIES (CNS)

Established in the late 1980s, the Centre for Northern Studies has directly contributed, through its academic program, speaker series, grants, publications, international student exchanges, and research projects, to the university’s national and international reputation as one of the main centres for Northern Studies in Canada and indeed the entire Circumpolar North. CNS was created by a partnership of regional and academic representatives to help ensure that Lakehead University is able to respond to the needs of our regions.

**Dr. Chris Southcott, Director**  
e: [chris.southcott@lakeheadu.ca](mailto:chris.southcott@lakeheadu.ca)  
t: (807) 343-8349



## FACULTY RESEARCH PROFILE — DR. MICHAEL RENNIE

“Plastics are everywhere,” says Dr. Michael Rennie, “but we have a poor understanding of its ecosystem-level impacts.” Dr. Rennie, Canada Research Chair in Freshwater Ecology and Fisheries, has dedicated his career to exploring aquatic ecology, emphasizing how the biodiversity that exists in aquatic ecosystems provides a unique lens through which to look at potential ecological changes. In one of his NSERC-funded research projects, Dr. Rennie and his team are examining the effects of microplastics on aquatic ecosystems using both laboratory approaches and whole-ecosystem level experiments at the IISD Experimental Lakes Area (ELA) where he has conducted research since 2010. Dr. Rennie’s training in Ecology and Evolutionary Biology has shaped his research on how human disturbance affects the food web structure and energetics of aquatic ecosystems, and how understanding these processes can aid restoration efforts. Other work at the ELA focuses on ecosystem restoration; in a lake previously acidified experimentally, “everything came back but the shrimp,” he says, and explains how re-establishing the native freshwater shrimp *Mysis* may be the key to help restore the lake trout population in the lake by improving the efficiency of energy transfer through the food chain. Always excited by science and discovery, Dr. Rennie says it is equally rewarding to see that same excitement in his students: “Science, and especially ecosystem-level science, is a fundamentally collaborative effort; it truly takes a team approach to be successful.”



## FAQs

### WHAT ARE RESEARCH CENTRES OR INSTITUTES?

Imagine a space that brings together students, faculty members, members of the community and/or industry, all with a common goal: to research and study a specific area of inquiry. Research Centres and Institutes allow researchers at all levels to connect, share their expertise, and work together on mutual interests. The teams often include researchers from different disciplines; more established faculty members mentor junior faculty members, postdoctoral fellows, interns, and students.

### WHAT OPPORTUNITIES ARE AVAILABLE FOR GRADUATE STUDENTS?

Research Centres and Institutes can offer employment opportunities to graduate students, as well as research opportunities. To complement and enhance students’ academic work, graduate students may have the opportunity to work on a faculty member’s or research team’s project. Students who choose to get involved in Research Centres or Institutes will meet junior and senior researchers in their fields of study, be included in partnerships with community members or organizations, and gain exposure and hands-on experience beyond the classroom.

### HOW CAN I GET INVOLVED?

If you are interested in a particular field or would like to know about opportunities in a Research Centre or Institute, visit the Research and Innovation website:

[www.lakeheadu.ca/research-and-innovation/facilities-centres](http://www.lakeheadu.ca/research-and-innovation/facilities-centres)

There you will find the list of Research Centres and Institutes, and the faculty members who are associated with a Centre or Institute are listed on the respective websites. During your studies, you may wish to contact one of these professors to see if there are research projects or opportunities at the Centre or Institute that would be of interest to you. Also, most Centres and Institutes have public talks and events, and students are especially welcomed. Attending these is a great way to interact with members of the Centre or Institute, meet other graduate students, and learn more about current projects.



## DISCOVERY THROUGH COLLABORATION

### CENTRE FOR RESEARCH ON SAFE DRIVING (CRSD)

The mandate of the Centre is to contribute to the reduction of traffic-related crashes through the understanding of the fundamental processes that support safe driving and through the development of interventions to optimize safe driving.

**Dr. Michel Bédard, Director**

e: [michel.bedard@lakeheadu.ca](mailto:michel.bedard@lakeheadu.ca) t: (807) 343-8630

### CENTRE FOR RURAL & NORTHERN HEALTH RESEARCH (CRaNHR)

The Centre provides high level quantitative and qualitative research into determinants of rural and northern health, and conducts evaluative research on health services, programs and policies for provincial and federal agencies, health care organizations, and Indigenous communities.

**Dr. Christopher Mushquash, Director**

e: [cjmushqu@lakeheadu.ca](mailto:cjmushqu@lakeheadu.ca) t: (807) 343-8239

**Dr. Mary Ellen Hill, Senior Researcher**

e: [maryellen.hill@lakeheadu.ca](mailto:maryellen.hill@lakeheadu.ca) t: (807) 766-7278

### RESEARCH CENTRE FOR SUSTAINABLE COMMUNITIES (RCSC)

The aim of RCSC is the development of an improved understanding of factors that influence the sustainability of communities using an innovative, comprehensive, and focused approach through the lenses of the social and natural sciences, the humanities, and fine arts.

**Dr. Nandakumar Kanavillil, Director**

e: [nkanavil@lakeheadu.ca](mailto:nkanavil@lakeheadu.ca) t: (705) 330-4008 ext. 2633

### LAKEHEAD UNIVERSITY AGRICULTURAL RESEARCH STATION (LUARS)

The Research Station specializes in on-station and on-farm research, especially in the areas of crop production and protection and soil and nutrient management, with an aim to develop new beneficial agronomic practices for improving productivity as well as identifying potential new and alternate crops and cropping systems suitable for Northern Ontario.

**Dr. Tarlok Singh Sahota, Director**

e: [tssahota@lakeheadu.ca](mailto:tssahota@lakeheadu.ca) t: (807) 475-8404; (807) 707-1987

### LAKEHEAD SOCIAL HISTORY INSTITUTE

The Lakehead Social History Institute is a partnership of historical researchers at Lakehead University and in the Thunder Bay community with the aim to encourage and promote historical research and training.

**Beverly Soloway, Director**

e: [shi@lakeheadu.ca](mailto:shi@lakeheadu.ca) t: (807) 343-8581

### GREEN PROCESSES RESEARCH CENTRE (GPRC)

GPRC is a hub for local and international researchers working on cutting-edge green technologies that will develop new products with the aim of transforming Canadian industries to adopt new sustainable processes with green products that will protect the environment.

**Dr. Pedram Fatehi, Director**

e: [pfatehi@lakeheadu.ca](mailto:pfatehi@lakeheadu.ca) t: (807) 343-8697

### ENHANCING THE PREVENTION OF INJURY & DISABILITY @ WORK (EPID@WORK) RESEARCH INSTITUTE

The mandate of the EPID@Work Research Institute is to bring people together to reduce impacts of work-related injury and work disability through collaborative applied research and provision of education to enhance knowledge related to injury and disability. Information generated from our research will inform practice and policies aiming to improve health and social outcomes in Northwestern Ontario and beyond.

**Dr. Vicki Kristman, Director**

e: [epid.hbsc@lakeheadu.ca](mailto:epid.hbsc@lakeheadu.ca) t: (807) 343-8961

## FACULTY RESEARCH PROFILE - DR. LANA RAY



“I conduct research that seeks to advance Indigenous sovereignty and livelihoods from Indigenous resurgence and anti-colonial frameworks,” says Dr. Lana Ray, “primarily in the areas of health and education.” Lakehead University’s inaugural Indigenous Research Chair in Decolonial Futures, Dr. Ray has had the honour of being an oshkaabewis (helper) for a traditional knowledge holder and was the inaugural Director of Policy and Research at the Ontario Native Women’s Association. Her formal western training in Public Health and Indigenous Studies continues to inform her research projects. Her research project on documenting traditional food practices, for instance, is in collaboration with Waasegiizhig Nanaandaweyewigamig (WNNAC), who service 10 surrounding First Nation communities and the urban Indigenous population in Kenora, Ontario. Working with Elders, her research project “will work to destabilize non-Indigenous food sources and eating habits which have problematized Indigenous food systems,” says Dr. Ray. Similarly, the Waasegiizhig Nanaandaweyewigamig Mino-Bimadiziwin Project advances Indigenous healing practices as a cancer prevention strategy, and “aims to assert Indigenous health sovereignty through the implementation of seasonal traditional medicine and healing camps and monthly traditional healing health practitioner visits.” Working towards Indigenous self-determination at local, national, and international levels, Dr. Ray’s focus on health and healing is at the heart of her research. “I am really excited about emerging work related to traditional healing and examining health through frameworks which centre relationships to land,” she says. “This is the kind of work that feeds my spirit as it connects me to the land, our knowledge holders, community and Indigenous ways of knowing and doing.” She is also invested in working collaboratively with her graduate students for community, which is “consistent with an Anishinaabe approach to learning.”



CENTRE FOR ANALYTICAL SERVICES (LUCAS)

LUCAS promotes the research interests of Lakehead University's faculty while providing regional access to the University's analytical testing facilities.

The following facilities are members of LUCAS:

Aquatic Toxicology Research Centre (ATRC):

Our ISO-17025 accredited facility supports research into the evaluation and prevention of toxic effects from industrial wastes and emerging contaminants in the environment.

Dr. Michael Rennie, Academic Director

Biotechnology Laboratory for Enzymes and Bioproducts (BLEB):

focuses on applied biotechnical analytical services in bioproduct analysis, biodegradation studies, enzyme assay, microbiology and aspects of molecular biology.

Dr. Wensheng Qin, Director

Biomass Utilization Research Laboratory (BURL):

offers access to the unique pulping research facilities in the Chemical Engineering Department at Lakehead University.

Dr. Pedram Fatehi, Director

Lakehead University Agricultural Research Station (LUARS):

is committed to the establishment, operation, promotion, and transfer of agricultural research for the further development and diversification of the agricultural industry through small plot research and extension, community-based agricultural research and natural resource management. LUARS has taken the lead to test new fertilizer products such as ESN, Urea SuperU, MAP + MST, SymTRX 10S and new crops such as Galega and Borage.

Dr. Tarlok Singh Sahota, Director

Lakehead University Environmental Laboratory (LUEL):

offers multi-parameter testing of soils, sediments, biological tissues, vegetation, and waters. Located in UC0001, LUEL is an ISO 17025 accredited facility and is uniquely equipped to measure methylmercury in sediments, water, and tissues. We work with students to develop methods for their research and support the training of highly qualified personnel.

Dr. Amanda Diochon, Director

The Fire Testing and Research Laboratory (LUFTRL):

offers state-of-the-art fire testing services to industry requirements and association standards, or custom testing for research and development. The LU Fire Testing and Research Laboratory also offers consultancy services to industry clients and engineering firms in the field of structural fire engineering.

Dr. Sam Salem, Founder and Director

Lakehead University Geospatial Data Centre:

provides mapping, advanced spatial analysis and 3D imaging services to Northwestern Ontario and beyond.

Dr. Robert Stewart, Director

Dr. Francis Appoh, Director of LUCAS

e: kmaa@lakeheadu.ca

t: (807) 343-8590



Lakehead University Instrumentation Laboratory (LUIL):

a multi-purpose, centralized facility which serves researchers and students from three faculties, providing access to spectrometers, electron and laser microscopes and analyzers needed for modern research and training of Canada's future scientists.

Dr. Francis Appoh, Director

Lakehead University Materials Characterization Services (LUMCS):

provides chemistry consulting along with a wide range of analytical and computational services.

Dr. Stephen Kinrade, Co-Director

Dr. Robert Mawhinney, Co-Director

Lakehead University Mineralogical and Experimental Laboratory (LUMINX):

serves as a bridge between minerals industry and university researchers by providing advanced mineralogical and geochemical services that are not routinely available from commercial firms.

Dr. Andrew Conly, Co-Director

Dr. Shannon Zurevinski, Co-Director

Lakehead University Molecular Archaeochemistry and Residue Services (LUMARS):

provides molecular services for the characterization and identification of a large range of molecules including carbohydrates, nucleic acids, amino acids, hydrocarbons, lipids, terpenes, terpenoids, fatty acids, alkaloids, fats, phospholipids, steroids, and waxes, aromatics and inorganic compounds.

Dr. Tamara Varney, Director

Lakehead University Wood Science Testing Facility (LUWSTF):

offers state-of-the-art testing for the mechanical and physical properties of wood and wood products, biomass studies and testing for energy (pellets, fuels, waste), microscopy studies for wood identification, portable milling studies and landscape wood property studies and mapping. Everything wood.

Dr. Mathew Leitch, Director

Paleo-DNA Laboratory:

one of the top ancient DNA research laboratories in the world. It is specifically designed to accommodate low-copy number, degraded, or ancient samples and vigorously control contamination.

Stephen Fratpietro, Technical Manager



FACULTY OF BUSINESS ADMINISTRATION (BUSINESS, MANAGEMENT, COMMERCE)

Accredited with the Association to Advance Collegiate Schools of Business (AACSB) and Chartered Professional Accountants (CPA).



MASTER OF BUSINESS ADMINISTRATION (MBA)

The Master of Business Administration (MBA) program at Lakehead University is designed for students with undergraduate degrees in any discipline to prepare for success in a wide range of management careers. Students develop technical skills and practical knowledge about managing in organizations.

The program achieves these goals through stimulating lectures, energetic class discussions, analysis of relevant cases, and projects with industry partners.

Two Options:

Finish the MBA program in 12 months (3 terms, full time), or complete the MBA with Advanced Studies in Management in 16 months (4 terms, full time).

Part-Time option available

lakeheadu.ca/masters-mba

BACHELOR OF ENGINEERING – MBA PROGRAM

This joint-degree program provides direct entry from Lakehead University's Engineering (BEng) program to the MBA. This program enables students to integrate their engineering and business studies in the final two years of study. Graduates of this program receive both degrees at the end of five years of study.



MASTER OF SCIENCE IN MANAGEMENT (MScMgt)

The Master of Science in Management program is designed for students with degrees in Business or a related field. The program develops analytical and research skills along with an understanding of managerial applications. Students accepted for a project may participate in the CIER Analytics Lab Fellowship Program, where they will receive guidance and mentoring on their projects from their supervisors and industry partners, including training as they complete their project into a final report.

The program is comprised of interactive seminars, enriching courses and a final project or thesis that allows students to perform research in their chosen areas of interest, including:

- Accounting
- Information systems and business analytics
- Entrepreneurship and innovation
- Finance
- Human resources and organizational behaviour
- Marketing
- Strategic management
- Operations management

The program can be completed within 12 months of full-time study. A two-year flexible option is available for working professionals.

lakeheadu.ca/masters-business-management

GRADUATE DIPLOMA IN ACCOUNTING (GDA)

Lakehead University's Graduate Diploma in Accounting (GDA) is a one semester professional accounting program, which prepares students to pursue the Chartered Professional Accountant (CPA) designation. The GDA enhances the technical and enabling competencies of undergraduate students by further developing critical thinking, analytical, integrative and ethical reasoning, and communication skills. The program is open to graduates from Lakehead University's HBComm program, who have the prerequisite undergraduate courses for the CPA Professional Education Program (PEP).

lakeheadu.ca/diploma-accounting



# FACULTY OF EDUCATION

Lakehead University's Faculty of Education provides you with the knowledge, skills, and opportunities to be a leader in educational research, theory, and practice. Our Master of Education and Joint PhD in Educational Studies programs allow you to study topics that are important to you, while challenging you to improve your teaching skills. We help you to address the latest educational theories and support you in the acquisition of skills and knowledge to positively affect learners. We offer full-time and flex-time programs at the Master's level at both Orillia and Thunder Bay campuses, or completely online.

## MASTER OF EDUCATION (MEd) — EDUCATIONAL STUDIES

Our Educational Studies program provides a unique learning experience, which addresses the current landscape of both education and research. Specializations in Women's Studies and Gerontology are available.

[lakeheadu.ca/masters-education](http://lakeheadu.ca/masters-education)  
[lakeheadu.ca/masters-specialization-gerontology](http://lakeheadu.ca/masters-specialization-gerontology)  
[lakeheadu.ca/masters-specialization-womens-studies](http://lakeheadu.ca/masters-specialization-womens-studies)

## MASTER OF EDUCATION (MEd) — EDUCATION FOR CHANGE

Education for Change provides an innovative learning experience that allows you to complete your Master of Education with one of the following specializations:

### Environmental and Sustainability Education (ESE)

ESE focuses on theory, research, and practices that analyze the cultural and ecological politics of sustainability and fosters mutually flourishing relationships between humanity and the natural world. It includes approaches such as climate change pedagogy, ecopedagogy, environmental justice education, food education, humane education, outdoor education, and place-based education.

### Indigenous Education (IE)

IE is grounded in Indigenous historical, philosophical, sociocultural, and political foundations and Indigenous research, protocols, and practices that focus on educational aspects of the politics of colonization and decolonization, honouring Indigenous knowledges and relationships to Land, exploring Indigenous approaches to well-being, and revitalizing traditional worldviews and languages.

### Social Justice Education (SJE)

SJE focuses on theory, research, and practices that analyse and address social forces both in and out of schools that perpetuate injustice and oppression, and includes approaches with diverse emphases such as anti-racist education, anti-classist education, fat pedagogy, feminist pedagogy, humane education, Indigenous education, inclusive education, and queer pedagogy.

It is also possible to include a Gender and Women's Studies or Gerontology specialization with any of the above program choices. Please note, the Gender and Women's Studies specialization is not available as an online option.

[lakeheadu.ca/masters-education](http://lakeheadu.ca/masters-education)  
[lakeheadu.ca/masters-specialization-gerontology](http://lakeheadu.ca/masters-specialization-gerontology)  
[lakeheadu.ca/masters-specialization-womens-studies](http://lakeheadu.ca/masters-specialization-womens-studies)

Should you be interested in a Thesis or PhD program, areas of faculty research include, but are not limited to:

- ▶ Cutting-edge math
- ▶ Climate change education
- ▶ Large-scale testing
- ▶ Holistic education
- ▶ Digital literacies
- ▶ Early language development
- ▶ Moral education
- ▶ Indigenous education
- ▶ Special education
- ▶ Science as inquiry
- ▶ Fat studies
- ▶ Poetic inquiry
- ▶ Men's violence against women



## JOINT DOCTOR OF PHILOSOPHY IN EDUCATIONAL STUDIES (PhD)

The Joint PhD in Educational Studies is offered by Lakehead University, Brock University and the University of Windsor. There are three fields of study: Cognition and Learning, Educational Leadership and Policy Studies, and Social/Cultural/Political Contexts of Education.

The Joint PhD in Educational Studies Program promotes scholarly inquiry and the production of new knowledge within the context of a research culture.

Application Deadline: November 15th

[lakeheadu.ca/doctoral-educational-studies](http://lakeheadu.ca/doctoral-educational-studies)

INNOVATIVE  
HANDS-ON APPROACH



# FACULTY OF ENGINEERING

Graduate programs in Engineering provide pathways for students to continue their education while working closely with faculty members on fundamental and translational research that crosses traditional boundaries. We are committed to providing educational opportunities to a diverse population as we train students for wide-ranging careers in engineering and to become leaders focused on developing technology to improve the human condition. Please note: applicants wishing to pursue a thesis-based program are strongly encouraged to find a supervisor before applying to their program of interest.

## MASTER OF SCIENCE IN CIVIL ENGINEERING (MSc)

The MSc in Civil Engineering satisfies the demand for highly-qualified personnel in the field of Civil Engineering. This demand is fueled by the requirements to maintain an aging infrastructure and to preserve and develop natural resources with minimal environmental impact to natural systems. Sustainability and structural durability and the impact of climate change on civil engineering works have become increasingly important challenges in the field of civil engineering.

Both thesis and course-based options are offered. The thesis option fosters and develops the independent research abilities of students. This option is ideal for students seeking to continue on to doctoral studies as well as students interested in research and development careers within the industry. Whereas, the course-based option allows students broad exposure to advanced topics within the field. Optionally, students in the course-based program may apply for cooperative education/internship experience.

Areas of faculty research include, but are not limited to:

- ▶ Construction Engineering
- ▶ Environmental Engineering
- ▶ Fire Safety Engineering
- ▶ Geotechnical and Geo-environmental Engineering
- ▶ Rock Engineering
- ▶ Structural and Bridge Engineering
- ▶ Transportation Engineering
- ▶ Water Resources Engineering
- ▶ Wind Engineering

[lakeheadu.ca/masters-civil-engineering](http://lakeheadu.ca/masters-civil-engineering)  
[lakeheadu.ca/graduate-program-civil-engineering](http://lakeheadu.ca/graduate-program-civil-engineering)

## MASTER OF SCIENCE IN ELECTRICAL AND COMPUTER ENGINEERING (MSc)

The MSc in Electrical and Computer Engineering at Lakehead University provides students with the opportunity to develop specialized knowledge through a combination of coursework and research. The program offers two routes to the degree.

The thesis option fosters and develops the independent research abilities of students. This option is ideal for students seeking to continue on to doctoral studies as well as students interested in research and development careers within the industry.

The course-based option allows students broad exposure to advanced topics within the field. Optionally, students in the course-based MSc may apply for cooperative education/internship experience.

Areas of faculty research include, but are not limited to:

- ▶ Control Engineering
- ▶ Circuits and Systems
- ▶ Electron Devices and Semiconductors
- ▶ VLSI
- ▶ Power Systems
- ▶ Software Engineering
- ▶ Computer Engineering
- ▶ Communications and Networking

[lakeheadu.ca/masters-elco-engineering](http://lakeheadu.ca/masters-elco-engineering)  
[lakeheadu.ca/graduate-program-elco-engineering](http://lakeheadu.ca/graduate-program-elco-engineering)



### MASTER OF SCIENCE IN MECHANICAL ENGINEERING (MSc)

Lakehead University's Master of Science in Mechanical Engineering program aims to foster students' independent research abilities through a combination of course work and systematic research. This program provides a dynamic and unique curriculum to train graduates to tackle mechanical engineering challenges faced by industries and communities effectively and efficiently. Graduate students in the MSc Mechanical Engineering program will benefit from small class sizes, friendly work environment, and close supervisor-student interactions.

- Areas of faculty research include, but are not limited to:
- ▶ Mechatronics
  - ▶ Vibration and Control
  - ▶ Machinery Health Condition Monitoring
  - ▶ System State Prognostics
  - ▶ Design and Manufacturing
  - ▶ Fluid and Thermal Dynamics
  - ▶ Alternative Energy and Powertrain

[lakeheadu.ca/masters-mechanical-engineering](http://lakeheadu.ca/masters-mechanical-engineering)  
[lakeheadu.ca/graduate-program-mechanical-engineering](http://lakeheadu.ca/graduate-program-mechanical-engineering)

### MASTER OF SCIENCE IN ENVIRONMENTAL ENGINEERING (MSc)

This unique Master of Science in Environmental Engineering program provides a dynamic curriculum to train graduates from engineering and related natural sciences in providing effective solutions to environmental challenges faced by industries and communities. Our extensive research capabilities are supported by outstanding laboratory facilities, including a centralized instrumentation laboratory. Our faculty members and graduate students conduct cutting-edge research in both fundamental studies and applied science and engineering to address global environmental issues, such as climate change, water crisis, and energy crisis.

- Areas of faculty research include, but are not limited to:
- ▶ Biorefinery and Bioenergy Production
  - ▶ Geoenvironmental Engineering
  - ▶ Green Cements
  - ▶ Greenhouse Gases Reduction
  - ▶ Water Resources Engineering
  - ▶ Water and Wastewater Purification
  - ▶ Utilization of Industrial Wastes and Byproducts

[lakeheadu.ca/masters-enve-engineering](http://lakeheadu.ca/masters-enve-engineering)  
[lakeheadu.ca/graduate-program-enve-engineering](http://lakeheadu.ca/graduate-program-enve-engineering)



### MASTER OF SCIENCE IN CHEMICAL ENGINEERING (MSc)

The Master of Science in Chemical Engineering program at Lakehead University satisfies the demand for highly qualified personnel who are prepared to address global challenges within the field of Chemical Engineering. Students in the MSc program have the opportunity to work collaboratively with world-class researchers, research facilities, and research institutes. Graduate students will benefit from participating in industrially driven projects, and close supervisor-student interactions.

This is a thesis program, which aims to foster the development of students' independent research abilities, and is ideal for students seeking to pursue doctoral studies as well as students interested in research and development careers within the industry.

- Areas of faculty research include, but are not limited to:
- ▶ Cement chemistry
  - ▶ Membrane bioreactors
  - ▶ Wastewater treatment
  - ▶ Biorefinery
  - ▶ Biodiesel, renewable chemicals
  - ▶ Air pollution control
  - ▶ Fluid mechanics
  - ▶ Removal of inorganic gases from air by adsorption
  - ▶ Polymerization and polymer applications
  - ▶ Fundamental and application of colloid and interface science
  - ▶ Surface science and engineering

[lakeheadu.ca/masters-chemical-engineering](http://lakeheadu.ca/masters-chemical-engineering)

### DOCTOR OF PHILOSOPHY IN ENGINEERING (PhD)

- **Electrical & Computer Engineering**  
 Our PhD program is designed to train independent researchers. Our students are called upon to perform highly specialized and original research that makes a distinct contribution of knowledge to:
  - ▶ Circuits
  - ▶ Energy Systems
  - ▶ Semiconductors
  - ▶ Communications
  - ▶ Natural language processing
  - ▶ Semantic web
  - ▶ Artificial intelligence

- **Civil Engineering**  
 The PhD in Civil Engineering program is designed for highly qualified personnel interested in a rewarding career in fundamental or applied research. The Doctor of Philosophy program involves advanced courses and an intensive research program culminating in a thesis. The development of applied research skills will also prepare PhD graduates for a career either in or outside of academia in new and traditional fields of Civil Engineering including but not limited to:
  - ▶ Structural
  - ▶ Fire safety
  - ▶ Geotechnical
  - ▶ Water resources
  - ▶ Construction
  - ▶ Environmental and transportation engineering

[lakeheadu.ca/doctoral-programs](http://lakeheadu.ca/doctoral-programs)  
[lakeheadu.ca/graduate-programs-engineering](http://lakeheadu.ca/graduate-programs-engineering)

ONE-OF-A-KIND  
PROGRAMS

# FACULTY OF HEALTH & BEHAVIOURAL SCIENCES

The Faculty of Health and Behavioural Sciences is comprised of several departments and schools, all of which share a dedication to human health and well-being. It is our goal to offer educational programming and inspire innovative research that will meet the ever changing demands of the Canadian health care sector, with special emphasis and sensitivity to rural, remote, Indigenous and northern health issues.

## HEALTH SCIENCES

The Department of Health Sciences offers a Master's and PhD program in Health Sciences, and a Master of Public Health program.

- Areas of Faculty research include, but are not limited to:
- ▶ Dementia, aging, and health
  - ▶ Determinants of safe and unsafe driving
  - ▶ Ecosystem and place-based approaches to health
  - ▶ Food systems and health
  - ▶ Geographic information systems (GIS)
  - ▶ Health and social service utilization of marginalized populations
  - ▶ Indigenous, northern, and rural health
  - ▶ Mental health
  - ▶ Prevalence and management of chronic diseases and multi-morbidity
  - ▶ Social justice and determinants of health
  - ▶ Sustainability and health
  - ▶ Work disability prevention and occupational health epidemiology

### MASTER OF HEALTH SCIENCES (MHSc)

The on-campus Master of Health Sciences (MHSc) program provides students with an understanding of the complexities of health sciences through a focus on individuals, communities, and organizations. Students emerge with advanced methodological and health-related education to enhance their ability to contribute to the advancement of health.

[lakeheadu.ca/masters-health-sciences](http://lakeheadu.ca/masters-health-sciences)

- Several specializations are offered in the MHSc program, including:
- ▶ Epidemiology
  - ▶ Indigenous and Northern Health
  - ▶ Gerontology
  - ▶ Social-Ecological Systems, Sustainability and Health

[lakeheadu.ca/masters-health-sciences-specializations](http://lakeheadu.ca/masters-health-sciences-specializations)

### MASTER OF NURSING (MN) – ADVANCED PRACTICE SPECIALIZATION OR MASTER OF NURSING (MN) – NURSE PRACTITIONER SPECIALIZATION

The Master of Nursing (MN) program is a coursework master's degree program, which includes a clinical practice component. Through a hybrid delivery model, the Masters of Nursing (MN) program prepares BScN educated Registered Nurses to enhance skills and synthesize in-depth knowledge and theory to meet the needs of diverse populations, families and communities.

There are two streams in the program: one broad stream for students interested in advanced practice nursing, and the other for students interested in completing

the Ontario Primary Health Care Nurse Practitioner (PHCNP) program that leads to licensure as a Registered Nurse (Extended Class) nurse practitioner.

Students in the MN program with Advanced Practice Specialization who are able to attend courses on campus can participate in face-to-face classes for all core courses and electives, while those students who are off campus can link to the class via technology. Upon successful completion of the MN courses, students complete an Advanced Practice Practicum

The MN program - Nurse Practitioner Specialization uses a blended delivery model of face-to-face instruction and distance education. There are some face-to-face, on-campus requirements, associated with clinical courses. Attendance at the scheduled on-campus seminars is mandatory. These clinical placements are required to be completed in Lakehead University's geographic boundary.

[lakeheadu.ca/master-nursing-APS](http://lakeheadu.ca/master-nursing-APS)  
[lakeheadu.ca/master-nursing-NPS](http://lakeheadu.ca/master-nursing-NPS)

### MASTER OF PUBLIC HEALTH (MPH)

The Master of Public Health program provides students with an understanding of current issues in the science and/or service of public health, and is primarily intended to prepare graduates for a career in public health practice. This program is delivered on-campus to full-time students, and using distance technology to flexible full-time students, and includes a 400 hour practicum component.

Several specializations are offered in the MPH program. With the exception of programs with Specialization in Nursing (with or without Nurse Practitioner Electives), students may apply to either a course-based or thesis option.

- ▶ Epidemiology
- ▶ Indigenous and Northern Health
- ▶ Social-Ecological Systems, Sustainability and Health
- ▶ Gerontology
- ▶ Nursing
- ▶ Nursing with Nurse Practitioner Electives

[lakeheadu.ca/masters-public-health](http://lakeheadu.ca/masters-public-health)

### DOCTOR OF PHILOSOPHY – HEALTH SCIENCES (PHD)

The PhD in Health Sciences is an on-campus, research-intensive program emphasizing the development of research skills with a particular focus on populations who historically have higher rates of poorer health (such as seniors and Indigenous populations). Applied health research is an integral part of the PhD in Health Sciences program. As such, it includes a hands-on experience through an innovative Research Internship that provides students with the opportunity to apply program content in a real-world, applied health research setting.

[lakeheadu.ca/doctoral-health-science](http://lakeheadu.ca/doctoral-health-science)  
[lakeheadu.ca/phd-health-sciences](http://lakeheadu.ca/phd-health-sciences)



## GRADUATE SPECIALIZATION IN GERONTOLOGY

The Department of Health Sciences offers a Master's level Specialization in Gerontology that provides students with the multidisciplinary knowledge and skills necessary to understand individual and societal influences on aging, and their relevance to function, health, and well-being. The specialization is available to students who have been admitted into master's degree programs in Education, Health Sciences, Kinesiology, Psychology, Social Work, or Sociology. Upon completion of the program, the degree awarded specifies the discipline of the participating academic unit and notes the Specialization in Gerontology.

[lakeheadu.ca/masters-specialization-gerontology](http://lakeheadu.ca/masters-specialization-gerontology)

## SOCIAL WORK

### MASTER OF SOCIAL WORK (MSW)

Lakehead University offers a Master of Social Work (MSW) degree, which emphasizes an advanced generalist practice approach to working with individuals, families, communities, organizations, and political systems based on an ecological view of social work practice. The curriculum focuses on the knowledge, values, and skills necessary for professional practice in environments characterized by urban regional centres, rural and remote communities, large geographic distances, low population density, diverse First Nations communities and people, and a mix of formal services. Please note: students will initially be accepted into the project track, then after consultation with their faculty supervisors, students who prefer the thesis track may request a change in program.

**Applicants must be completing or hold an Honours Bachelor of Social Work degree to be considered for admission.**

This program is offered at both the Thunder Bay and Orillia campuses.

[lakeheadu.ca/masters-social-work](http://lakeheadu.ca/masters-social-work)  
[lakeheadu.ca/masters-specialization-gerontology](http://lakeheadu.ca/masters-specialization-gerontology)  
[lakeheadu.ca/masters-specialization-womens-studies](http://lakeheadu.ca/masters-specialization-womens-studies)

## PSYCHOLOGY

Applications for Clinical Psychology programs are due December 15th

The Department of Psychology offers Master's and PhD programs in Clinical Psychology and in Psychological Science.

Areas of faculty research include, but are not limited to:

- ▶ Indigenous mental health and addiction
- ▶ Cognitive-behavioural considerations in eating disorders, self-regulatory processes in eating behaviour, body image, and stress
- ▶ Cognitive processes, problem solving, and memory
- ▶ Mood and anxiety disorders, problem gambling, chronic pain, evolutionary psychology
- ▶ Vision, attention, multisensory integration, face perception and biorhythmicity
- ▶ Cultural clinical psychology, gender and depression, suicide and non-suicidal self-harm, resilience, student mental health
- ▶ Social cognition, systems thinking, and the self; application of social and personality theory
- ▶ Mental health and addiction services, systems, and policy; outcomes research; health behaviour
- ▶ Behavioural endocrinology, women's health, clinical neuropsychology

- ▶ Psychological strengths and positive youth development
- ▶ Mental illness stigma, clinical, ethical, and professional issues
- ▶ Application of social & personality theories into applied setting
- ▶ Health behaviours, mental health & substance use; personality, social & contextual contributors

### MASTER OF ARTS IN CLINICAL PSYCHOLOGY (MA)

The goal of the MA Clinical Psychology program is to prepare students for doctoral-level training in clinical psychology. The clinical programs focus on the scientific understanding of the behaviour of individuals, groups and social systems, and the application of this understanding to enhance the functioning and well-being of individuals, groups, and societies. The program of study includes foundational and professional courses, thesis work, and practicum training.

[lakeheadu.ca/masters-psychology-clinical](http://lakeheadu.ca/masters-psychology-clinical)  
[lakeheadu.ca/masters-specialization-gerontology](http://lakeheadu.ca/masters-specialization-gerontology)  
[lakeheadu.ca/masters-specialization-womens-studies](http://lakeheadu.ca/masters-specialization-womens-studies)

### MASTER OF SCIENCE IN PSYCHOLOGICAL SCIENCE (MSc)

The Master of Science in Psychological Science is a research-intensive program that addresses all areas of psychology including biological, cognitive, and individual and social bases of behaviour. The Psychological Science curriculum is based on an apprenticeship model, which includes flexible core courses that are appropriate to a student's area of research.

[lakeheadu.ca/masters-psychological-science](http://lakeheadu.ca/masters-psychological-science)  
[lakeheadu.ca/masters-specialization-gerontology](http://lakeheadu.ca/masters-specialization-gerontology)  
[lakeheadu.ca/masters-specialization-womens-studies](http://lakeheadu.ca/masters-specialization-womens-studies)

### DOCTOR OF PHILOSOPHY - CLINICAL PSYCHOLOGY (PhD)

The PhD Clinical Psychology program trains students at a doctoral level in clinical and research skills, and allows graduates to pursue a career in professional practice. The clinical programs provide generalist training that allows career flexibility in urban or rural practice settings, and in academic institutions. The program of study includes coursework and practical training in core content areas, historical and scientific foundations of psychology, foundations of professional practice, and specific professional skills. The PhD program is accredited by the Canadian Psychology Association and graduates can pursue professional licensure/registration.

[lakeheadu.ca/doctorsal-psychology-clinical](http://lakeheadu.ca/doctorsal-psychology-clinical)

### DOCTOR OF PHILOSOPHY - PSYCHOLOGICAL SCIENCE (PhD)

The PhD program in Psychological Science is a research-intensive program that advances the student's Master's level knowledge and skills in psychology research through an apprenticeship model appropriate to the student's area of focus.

[lakeheadu.ca/doctorsal-psychological-science](http://lakeheadu.ca/doctorsal-psychological-science)

## KINESIOLOGY

### GRADUATE DIPLOMA IN PROFESSIONAL KINESIOLOGY (GDIP)

The Graduate Diploma in Professional Kinesiology provides professional training and clinical skill upgrading for current and future practitioners of Kinesiology. Individuals will gain advanced theoretical knowledge and practical experience to help prepare them to work within the scope of practice of a Kinesiologist.

The diploma program is offered over a 12-month time frame commencing in September. The program includes four online courses that run consecutively, and four 5-day on-site practical courses. The program also includes a 200-hour placement that may occur within the province, the country, or internationally, provided a suitable setting is identified with an appropriate supervisor.

Content in the program includes the following advanced level topics: assessment skills related to peripheral and spinal joints; exercise prescription for both healthy individuals and those with chronic disease; communication and leadership in the context of ergonomics and disability management; and business, ethics, and risk management related to kinesiology.

[lakeheadu.ca/diploma-kinesiology](http://lakeheadu.ca/diploma-kinesiology)

## MASTER OF SCIENCE IN KINESIOLOGY (MSc)

The School of Kinesiology offers two Master of Science programs: a thesis-based program and a course-based program. The thesis-based program employs an interdisciplinary approach to focus on the study of human performance from a scientific perspective. In this two-year program, students work closely alongside a faculty supervisor to develop, conduct, and communicate a thesis project that contributes to the academic literature. Coursework (two required courses and at least two electives) enhances students' understanding of research in general and of the specific content area of their thesis.

General topic areas include:

- |                             |                                      |
|-----------------------------|--------------------------------------|
| ▶ Adapted Physical Activity | ▶ Health Promotion                   |
| ▶ Applied Ergonomics        | ▶ Motor Control and Learning         |
| ▶ Biomechanics              | ▶ Psychology of Physical Activity    |
| ▶ Exercise Physiology       | ▶ Sports Medicine and Rehabilitation |
| ▶ Gerontology               |                                      |

The distance-friendly course-based Master of Science degree is a program for those that are interested in undertaking a more applied, evidence-based pathway that will add value to their credentials both academically and experientially. The program provides professional training, clinic skills upgrading, and research opportunities for current and future practitioners of Kinesiology. The 16-month program is delivered with a combination of online and on-campus courses commencing in September. The program includes 8 online courses, and four 5-day practical on-campus courses. The culminating project is designed to provide students with an opportunity to explore an area of professional practice.

[lakeheadu.ca/masters-kinesiology](http://lakeheadu.ca/masters-kinesiology)  
[lakeheadu.ca/masters-specialization-gerontology](http://lakeheadu.ca/masters-specialization-gerontology)





# FACULTY OF NATURAL RESOURCES MANAGEMENT

Modern Natural Resources Management is about people, science and technology, and applying natural and social sciences to the management of the environment for the benefit of society. Our professional programs offer a balanced view of sustainable ecosystem management with respect to the many social, economic and environmental challenges and opportunities facing us now and in the future. While our location in the midst of Canada's vast boreal forest is unbeatable, we also recognize the need to ensure you are aware of, and prepared for, stewardship on a global scale.

## MASTER OF FOREST MANAGEMENT (MFMGT) - 16 MONTHS

The emphasis of the course-based offering of the MFMGT is professionalism, communication and planning at a strategic level beyond basic natural resources management. This program includes an internship, and participation in Field School in an international or domestic setting. The research internship will be closely coordinated by the Faculty and may involve local, regional, national as well as international collaborators.

[lakeheadu.ca/masters-forestry](http://lakeheadu.ca/masters-forestry)

## MASTER OF SCIENCE IN FORESTRY (MScF) - 2 YEAR

The MScF thesis-based program is a research-oriented degree designed to give graduates a firm foundation in the process of scientific inquiry. Most research projects are undertaken in one or more of the biophysical forest sciences, but social science research may also be undertaken. Research projects are designed jointly by the student, a Research Supervisor, and the faculty member who serves as the student's Faculty Supervisor.

[lakeheadu.ca/masters-forestry](http://lakeheadu.ca/masters-forestry)

## DOCTOR OF PHILOSOPHY IN FOREST SCIENCES (PHD)

The PhD in Forest Sciences is a research-based program focused on the development of researchers in the field of forest sciences, including, but not limited to the following subject areas:

- ▶ Management planning
- ▶ Integrated forest resources management
- ▶ Fish and wildlife
- ▶ Regulation and scheduling
- ▶ Policy and legislation
- ▶ Soils / hydrology
- ▶ Pathology
- ▶ Entomology
- ▶ Fire management and ecology
- ▶ Dendrology
- ▶ Ecology/silvics
- ▶ Genetics / tree improvement
- ▶ Remote sensing
- ▶ Photogrammetry
- ▶ Geographic information system
- ▶ International forestry
- ▶ Wood technology/ utilization
- ▶ Harvesting/mechanization/ roads
- ▶ Economics
- ▶ Business principles
- ▶ Operations research
- ▶ Mensuration
- ▶ Statistics/experimental design/research methods
- ▶ Restoration ecology
- ▶ Watershed management
- ▶ Invasive species control

[lakeheadu.ca/doctoral-forest-sciences](http://lakeheadu.ca/doctoral-forest-sciences)

# FACULTY OF SOCIAL SCIENCES & HUMANITIES

Our graduates are entrepreneurial, creative and highly adaptable to new and ever-changing workplace environments, possessing essential skills and knowledge sought after by employers, particularly in the area of critical thinking and advanced communication and research. Your Lakehead University education will prepare you for a wide range of career choices.

## MASTER OF ARTS IN ENGLISH (MA)

Our MA program offers students the opportunity to pursue their scholarly interests in the way that best suits them. We offer a number of different program options: the traditional coursework option that provides students with coverage of many fields and the experience of working with a greater number of professors; a combined coursework and thesis option for those students who want the experience of writing an in-depth study on their topic of choice; a coursework and research-project option that allows students to pursue a shorter study on their topic of choice. We also offer a coursework plus creative-project option, which allows students to write a creative work, while still engaging in critical analysis of the genre and form in which they are writing.

In addition, we offer the unique option of pursuing an MA in English with either a Specialization in Gender and Women's Studies, or a Specialization in Social Justice Studies.

[lakeheadu.ca/masters-english](http://lakeheadu.ca/masters-english)  
[lakeheadu.ca/masters-specialization-womens-studies](http://lakeheadu.ca/masters-specialization-womens-studies)  
[lakeheadu.ca/masters-social-justice](http://lakeheadu.ca/masters-social-justice)

## MASTER OF ARTS IN HISTORY (MA)

Historians seek to bring the past to life with the understanding that what we know of the past is not static but constantly evolving. Our Master's program offers the option of a Major Research Project/Paper, Course-Work, or Thesis Program. It provides excellent preparation for further graduate studies at the Ph.D. level.

The specializations of members of the Department of History are geographically and thematically broad with a focus on the 19th and 20th centuries.

Areas of faculty research include, but are not limited to:

- ▶ Canada with an emphasis on political and labour history
- ▶ Modern South Asia with an emphasis on people and the environment
- ▶ Latin America with an emphasis on immigration and racism
- ▶ Western Europe with an emphasis on the Holocaust and human rights
- ▶ Eastern Europe with an emphasis on political and social movements
- ▶ Canada with an emphasis on the military and external relations

For more information about the Department of History and the research and teaching interests of faculty members, along with a list of completed theses, papers, and where our grads are now, please visit:

[lakeheadu.ca/masters-history](http://lakeheadu.ca/masters-history)  
[lakeheadu.ca/graduate-program-history](http://lakeheadu.ca/graduate-program-history)  
[lakeheadu.ca/academics/departments/history/our-alumni](http://lakeheadu.ca/academics/departments/history/our-alumni)



### MASTER OF ARTS IN SOCIAL JUSTICE (MA)

Have you ever wondered “What can I do to make a difference? How can I combine my academic interests with activism?” The Social Justice Studies (SJS) program at Lakehead university is designed to help you answer those questions. Our program empowers students with the practical skills and theoretical knowledge necessary to challenge the informal and formal configurations of power and oppression within local, national, and global contexts.

The program offers four streams that students can pursue during the two-year degree: coursework, research project, creative project, or practicum. Connecting scholarly inquiry and community-based learning provides students with practical experience and an opportunity to develop necessary critical skills through an intersectional approach to social justice.

The flexibility of the program allows students to take courses with and be supervised by dynamic faculty from across the Social Sciences and Humanities. Our faculty come from a broad range of disciplinary specialties (including, but not limited to, Indigenous Learning, Women’s Studies, Music, Visual Arts, and English), and our program is open to students from a wide range of undergraduate disciplines. Students who have completed the program go on to pursue doctoral studies, attend law school, work in the non-profit or education sectors, or use the program for other forms or personal and professional development.

For a list of available specializations, refer to the back cover of this publication.

[lakeheadu.ca/masters-social-justice](http://lakeheadu.ca/masters-social-justice)

### MASTER OF ARTS IN SOCIOLOGY (MA)

We offer expertise in a number of theoretical and substantive research areas in Sociology, and offer training in both qualitative and quantitative research methods. Our faculty have been very successful in garnering publications and research grants, and enjoy global reputations for their scholarly contributions. Our main research streams include: Health, Food and the Life Course; Media, Culture and Technology; and Social Justice and Northern communities. We also offer specializations with the programs of Gerontology, Gender & Women’s Studies and Social Justice Studies. Our students have obtained funding support through internal and external scholarships, as well as research and graduate assistantships. Through our professional training, they have also presented at academic conferences, published in peer-reviewed journals, and moved on to PhD programs and professional careers.

[lakeheadu.ca/masters-sociology](http://lakeheadu.ca/masters-sociology)  
[lakeheadu.ca/masters-specialization-gerontology](http://lakeheadu.ca/masters-specialization-gerontology)  
[lakeheadu.ca/masters-specialization-womens-studies](http://lakeheadu.ca/masters-specialization-womens-studies)  
[lakeheadu.ca/masters-social-justice](http://lakeheadu.ca/masters-social-justice)



### INTERDISCIPLINARY SPECIALIZATION IN GENDER AND WOMEN’S STUDIES

Your interdisciplinary work will critically assess the relevance of existing models of knowledge in reflecting experience and scholarship on women, gender, and sexuality. The program allows you to develop and integrate feminist teaching, learning, and research in the university and the community. Our graduates hold careers in a broad range of fields, and use their training to engage in anti-oppressive, diversity-driven, gender-related work. Faculty research areas include law, law and literature, the body, anti-violence work, fan studies, cultural studies, women in leadership, reproduction and technology, and more.

[lakeheadu.ca/masters-specialization-womens-studies](http://lakeheadu.ca/masters-specialization-womens-studies)

EXCEPTIONAL.  
UNCONVENTIONAL.



## FACULTY OF SCIENCE & ENVIRONMENTAL STUDIES

Our Faculty of Science & Environmental Studies (SES) has ten departments: Anthropology, Biology, Chemistry, Computer Science, Economics, Geography and the Environment, Geology, Mathematical Sciences, Sustainability Sciences, and Physics. We have disciplinary-based and interdisciplinary programs at the Master’s level and two interdisciplinary PhD programs in Biotechnology and Chemistry and Material Science. Some Master’s programs are available as course-based options. Applicants interested in thesis-based programs are encouraged to contact potential supervisors directly before submitting an application for graduate study.

### MASTER OF SCIENCE IN ARCHAEOLOGICAL SCIENCES (MSC)

This 2-year thesis based MSc in Archaeological Sciences focuses upon the application of science and technology to studying humans and their biological origins, histories and cultures.

Areas of faculty research include, but are not limited to:

- ▶ Paleoanthropology
- ▶ Biological anthropology
- ▶ Human osteology
- ▶ Zooarchaeology
- ▶ Morphometrics
- ▶ Forensics
- ▶ Stable isotopes, trace elements
- ▶ Paleoenvironmental analysis
- ▶ Archaeobotany (micro and macro botanical analysis)
- ▶ Pleistocene geomorphology
- ▶ Geoarchaeology
- ▶ Field Archaeology
- ▶ Cultural Heritage Management
- ▶ Material Culture studies
- ▶ Residue and use-wear
- ▶ Micro-botanical residues
- ▶ Microscopy, hair and fibre analysis
- ▶ Near-surface geophysics and site prospection
- ▶ 3D modelling and printing
- ▶ UAV mapping, photogrammetry
- ▶ Remote Sensing, Spatial Analysis

[lakeheadu.ca/masters-archaeological-science](http://lakeheadu.ca/masters-archaeological-science)  
[lakeheadu.ca/graduate-program-archaeological-science](http://lakeheadu.ca/graduate-program-archaeological-science)

### MASTER OF SCIENCE IN BIOLOGY

The broad disciplinary expertise in the Department of Biology is enhanced by collaborations with local organizations (e.g., Northern Ontario School of Medicine, Ontario Ministry of Natural Resources and Forestry, Wildlife Conservation Society of Canada) and several departmental facilities (Claude-Garton Herbarium, Biology Aquatic Facility, etc.) that support our faculty to explore a wide range of research topics. Our graduate students conduct field research from the Caribbean to the Canadian Arctic, aboard Great Lakes research vessels and at state-of-the-art outdoor facilities including the Habitron and the IISD Experimental Lakes Area.

Areas of faculty research include, but are not limited to:

- ▶ Aquatic Ecology and Fisheries Biology
- ▶ Biomedical Science
- ▶ Biorefining and Bioenergy
- ▶ Cancer Biology
- ▶ Conservation Biology
- ▶ Environmental Microbiology and Microbial Ecology
- ▶ Evolutionary Ecology
- ▶ Food Microbiology
- ▶ Herpetology
- ▶ Immunology and Microbiology
- ▶ Ornithology
- ▶ Parasitology
- ▶ Physiology and Cell Biology
- ▶ Plant Ecology
- ▶ Plant Physiology and Biochemistry

[lakeheadu.ca/masters-biology](http://lakeheadu.ca/masters-biology)  
[lakeheadu.ca/biology-research](http://lakeheadu.ca/biology-research)



### MASTER OF SCIENCE IN CHEMISTRY (MSc)

Our Department of Chemistry offers a graduate program that provides students with diverse opportunities across the sub-disciplines of analytical, biochemical, inorganic, organic, and physical chemistry.

Areas of faculty research include, but are not limited to:

- ▶ Electrochemistry and surface analysis
- ▶ Material science
- ▶ Molecular design
- ▶ Pulp and paper research
- ▶ Organometallic chemistry and catalysis
- ▶ Organic synthesis
- ▶ Aqueous silicon chemistry
- ▶ Photochemistry
- ▶ Environmental and medicinal chemistry
- ▶ Food Chemistry
- ▶ Radiochemistry
- ▶ Medical Imaging
- ▶ Colloid and Interface Science
- ▶ Separation Science and Technology

[lakeheadu.ca/masters-chemistry](http://lakeheadu.ca/masters-chemistry)

### MASTER OF SCIENCE IN COMPUTER SCIENCE (MSc)

The MSc in Computer Science provides an opportunity to explore the breadth and depth of advanced knowledge in the discipline. Faculty, staff, and students are equipped with state-of-the-art computing facilities including smart lecture rooms, labs, and a variety of computing technologies (e.g. virtual reality, parallel computing). Students benefit from a selection of advanced courses and a chance to pursue research that aligns with their interests and aspirations.

A co-op option is available after completion of two terms (four half graduate courses). Suitability for the co-op option will be based on academic performance in the program.

[lakeheadu.ca/masters-comp-sci](http://lakeheadu.ca/masters-comp-sci)

### SPECIALIZATION IN ARTIFICIAL INTELLIGENCE (AI) OPTION

Students will develop the skills and knowledge to conduct research in the field of Computer Science with a focus on core AI techniques. Upon completion, students will be able to apply and select appropriate AI algorithms and techniques in a variety of industrial sectors and further advance the AI-related research. Topics will include deep learning, natural language processing, machine learning, image processing, pattern recognition, and other emerging technologies. Finally, students will develop research and application-based ethical awareness. In 2020, five of our MSc students have been awarded the 2020-21 Vector Institute Scholarships in Artificial Intelligence to conduct research using AI techniques.

[lakeheadu.ca/masters-comp-sci](http://lakeheadu.ca/masters-comp-sci)

This specialization is only available for the thesis-based Computer Science program.

### MASTER OF ARTS IN ECONOMICS (MA)

The Economics program offers training in core economic theory subjects while emphasizing several applied fields such as index number analysis, industrial organization, labour economics, public economics, international trade, economic development, natural resource economics, and econometrics. Our graduates are well-prepared for employment in government agencies and the private sector, as well as for further academic studies in reputed doctoral programs in North America.

[lakeheadu.ca/masters-economics](http://lakeheadu.ca/masters-economics)



### MASTER OF ENVIRONMENTAL STUDIES (MES)

The thesis-based 2 year MES focuses on field training and interdisciplinary study, concentrating on challenges in the relationships between humans and the natural environment.

Areas of faculty research include, but are not limited to:

- ▶ Sustainable communities
- ▶ Indigenous land use and occupancy
- ▶ Social impacts of natural resource extraction
- ▶ Resource management
- ▶ Nature-based tourism
- ▶ Treaty and Aboriginal rights
- ▶ Urban and rural food security
- ▶ Culture and identity
- ▶ Economic development
- ▶ Protected areas
- ▶ Conservation
- ▶ Traditional subsistence
- ▶ Paleo-ecology
- ▶ Climate change
- ▶ Biological and aquatic remediation
- ▶ GIS, remote sensing

[lakeheadu.ca/masters-mes](http://lakeheadu.ca/masters-mes)



### MASTER OF SCIENCE IN GEOLOGY (MSc)

The Master of Science in Geology has a strong focus on various aspects of Precambrian geology with a secondary focus on soil science, terrestrial biogeochemistry and environmental geology.

Areas of faculty research include, but are not limited to:

- ▶ Mineralogy and petrology
- ▶ Geochemistry
- ▶ Structural Geology
- ▶ Mapping and tectonics
- ▶ Sedimentology and Basin analysis
- ▶ Economic geology
- ▶ Terrestrial biogeochemistry and soil science

[lakeheadu.ca/masters-geology](http://lakeheadu.ca/masters-geology)

### MASTER OF SCIENCE IN MATHEMATICAL SCIENCES (MSc)

Graduate students in the Mathematical Sciences program will work on research in the area of expertise of one or more of our faculty members.

Areas of faculty research include, but are not limited to:

- ▶ Algebra
- ▶ Graph theory
- ▶ Functional analysis
- ▶ Harmonic analysis
- ▶ Numerical analysis
- ▶ Operator algebras
- ▶ Optimization
- ▶ Operations research
- ▶ Partial differential equations
- ▶ Probability and statistics

[lakeheadu.ca/masters-mathematics](http://lakeheadu.ca/masters-mathematics)

### MASTER OF SCIENCE IN PHYSICS (MSc)\*

MSc Physics students benefit from close working relationships with their advisors, and these relationships help to facilitate students' research in Condensed Matter & Optical Physics:

- ▶ Semiconductor
- ▶ Surface science
- ▶ Soft-condensed matter
- ▶ Fibre optics

Also, our collaboration with the medical physics staff at the Regional Cancer Centre in Thunder Bay provides a number of applicable research opportunities with medical physics professionals. As well as the regular core courses, students are provided with special topics courses. This combination of general and thesis-specific courses prepares students for further graduate work and provides a solid background in their area of specialization.

\*Students enrolled in the MSc Physics program may take the co-operative option subject to the approval of the Department.

[lakeheadu.ca/masters-physics](http://lakeheadu.ca/masters-physics)

### DOCTOR OF PHILOSOPHY IN BIOTECHNOLOGY (PhD)

The PhD in Biotechnology is a research-based, interdisciplinary program with two areas of specialization:

#### Environmental Biotechnology

- ▶ Biorefining
- ▶ Community ecology of altered environments and aquatic toxicity
- ▶ Microbial engineering
- ▶ Pollutant degrading microorganisms
- ▶ Pulp and paper biofilm analysis
- ▶ Renewable bioenergy
- ▶ Wastewater treatment
- ▶ Pathogenic microorganisms/ Infectious disease
- ▶ Movement ecology

#### Medical Biotechnology

- ▶ Bioinformatics/genomics/ protein folding
- ▶ Biosurveillance/computer modelling
- ▶ Cancer biology - targeted therapies and synthetic vaccines
- ▶ Cardiac and skeletal muscle dysfunction
- ▶ Medical imaging/optical fibre lasers
- ▶ Medicinal plants/natural compounds as anti-cancer and anti-oxidant agents

[lakeheadu.ca/doctorsal-biotechnology](http://lakeheadu.ca/doctorsal-biotechnology)

### DOCTOR OF PHILOSOPHY IN CHEMISTRY AND MATERIALS SCIENCE (PhD)

The PhD in Chemistry and Materials Science is an interdisciplinary research-intensive graduate program focused on the intellectual development and advanced training of scientists in two fields of specialization: physical chemistry - the study of physical principles which govern the behaviour and properties of chemical systems; and molecular and materials science - the synthesis and characterization of novel compounds and materials.

Areas of faculty research include, but are not limited to:

- ▶ Surface analysis
- ▶ Molecular design
- ▶ Pulp and paper research
- ▶ Organometallic chemistry and catalysis
- ▶ Organic synthesis
- ▶ Aqueous silicon chemistry
- ▶ Photochemistry
- ▶ Environmental chemistry
- ▶ Medicinal chemistry
- ▶ Food Chemistry
- ▶ Radiochemistry
- ▶ Medical Imaging
- ▶ Colloid and Interface Science
- ▶ Separation Science and Technology

[lakeheadu.ca/doctorsal-chemistry-material-science](http://lakeheadu.ca/doctorsal-chemistry-material-science)



# Program Offerings

	Thesis	Course	Research Project	Creative Project	Portfolio	Start Terms		
						Sept	Jan	May
Faculty of Business Administration and Commerce								
Master of Business Administration (MBA) (12 months/16 months) ★		•				•		
Master of Science Management (MScMgt) ▲	•		•			•		
Graduate Diploma in Accounting (GDA)* (1 term/3 months)		•				•		
BEng/MBA*								
Faculty of Education								
Master of Education in Educational Studies (MEd)** ●■●▲	•	•			•	•	•	•
Master of Education in Education for Change (MEd)								
Environmental and Sustainability Education** ●■●▲	•	•			•	•	•	•
Indigenous Education** ●■●▲	•	•			•	•	•	•
Social Justice Education** ●■●▲	•	•			•	•	•	•
Joint Doctor of Philosophy in Educational Studies (PhD)								•(July)
Faculty of Engineering								
Master of Science in Chemical Engineering (MSc)	•					•	•	•
Master of Science in Civil Engineering (MSc)*** ◆	•	•				•		
Master of Science in Electrical and Computer Engineering (MSc)*** ◆	•	•				•		
Master of Science in Environmental Engineering*** ◆	•	•				•		
Master of Science in Mechanical Engineering (MSc)*** ◆	•	•				•		
Doctor of Philosophy in Engineering (PhD):								
Civil Engineering						•		
Electrical and Computer Engineering						•	•	
Faculty of Health & Behavioural Sciences								
Master of Health Sciences (MHS) ●■▼◆▲	•					•		
Master of Public Health (MPH) ●■○▼▲●◆◆	•	•				•		
Doctor of Philosophy in Health Sciences (PhD) ▲						•		
Master of Science in Kinesiology (MSc) (16 months)		•				•		
Graduate Diploma in Professional Kinesiology (GDIP) ▲		•				•		
Master of Science in Kinesiology (MSc) ●	•					•		
Master of Arts in Clinical Psychology (MA) ●■	•					•		
Master of Science in Psychological Science (MSc) ●■	•					•		
Doctor of Philosophy in Psychology - Clinical Psychology (PhD)						•		
Doctor of Philosophy in Psychology - Psychological Science (PhD)						•		
Master of Social Work (MSW) ●■	•		•			•		
Master of Nursing – Advanced Practice Specialization (MN) ▲■●		•				•		
Master of Nursing – Nurse Practitioner Specialization (MN) ▲▲		•				•		
Faculty of Natural Resources Management								
Master of Forest Management (MFMGT) (16 months) ▲		•				•		
Master of Science in Forestry (MScF) (2yr)	•					•	•	•
Doctor of Philosophy in Forest Sciences (PhD)						•	•	•
Faculty of Social Sciences & Humanities								
Master of Arts - English (MA) ■▼	•	•	•	•		•		
Master of Arts - History (MA)	•	•	•			•		
Master of Arts - Social Justice (MA) ■◆		•	•	•		•		
Master of Arts in Sociology (MA) ●■●▼ (research paper option available)	•					•	•	
Faculty of Science & Environmental Studies								
Master of Science in Archaeological Sciences (MSc)	•					•		
Master of Science in Biology (MSc)	•					•	•	•
Master of Science in Chemistry (MSc)	•					•	•	•
Master of Science in Computer Science (MSc) (1yr) ◆		•				•		
Master of Science in Computer Science (MSc) (2yr) ◆▲	•		•			•		
Master of Arts in Economics (MA) ◆		•				•		
Master of Environmental Studies (MES)	•					•		
Master of Science in Geology (MSc)	•					•	•	•
Master of Science in Mathematical Sciences (MSc)	•	•				•		
Master of Science in Physics (MSc) ◆	•					•	•	
Doctor of Philosophy in Biotechnology (PhD)						•	•	•
Doctor of Philosophy in Chemistry and Materials Science (PhD)						•	•	•



**Lakehead**  
UNIVERSITY

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- Specialization in Gerontology
- Specialization in Gender and Women's Studies
- ▲ Specialization in Indigenous & Northern Health
- Specialization in Nursing
- ▼ Specialization in Epidemiology
- ▲ Specialization in Artificial Intelligence (Thesis option only)
- ▼ Specialization in Social Justice
- ◆ Specialization in: Social-Ecological Systems, Sustainability and Health
- ▲ Flex-Time Option Available
- ★ Part-Time Option Available
- Online Option Available
- ◆ Co-op or Practicum Streams Available
- ▲ Fieldwork and/or Placement

\*See page 11 for eligibility.

\*\*Please note, the Gender and Women's Studies specialization is not available as an online option.

\*\*\*Co-op opportunities are available in course-based programs only.

The Senate of Lakehead University reserves the right to change regulations, program start terms, and course requirements, as outlined in this Viewbook, without prior notice.