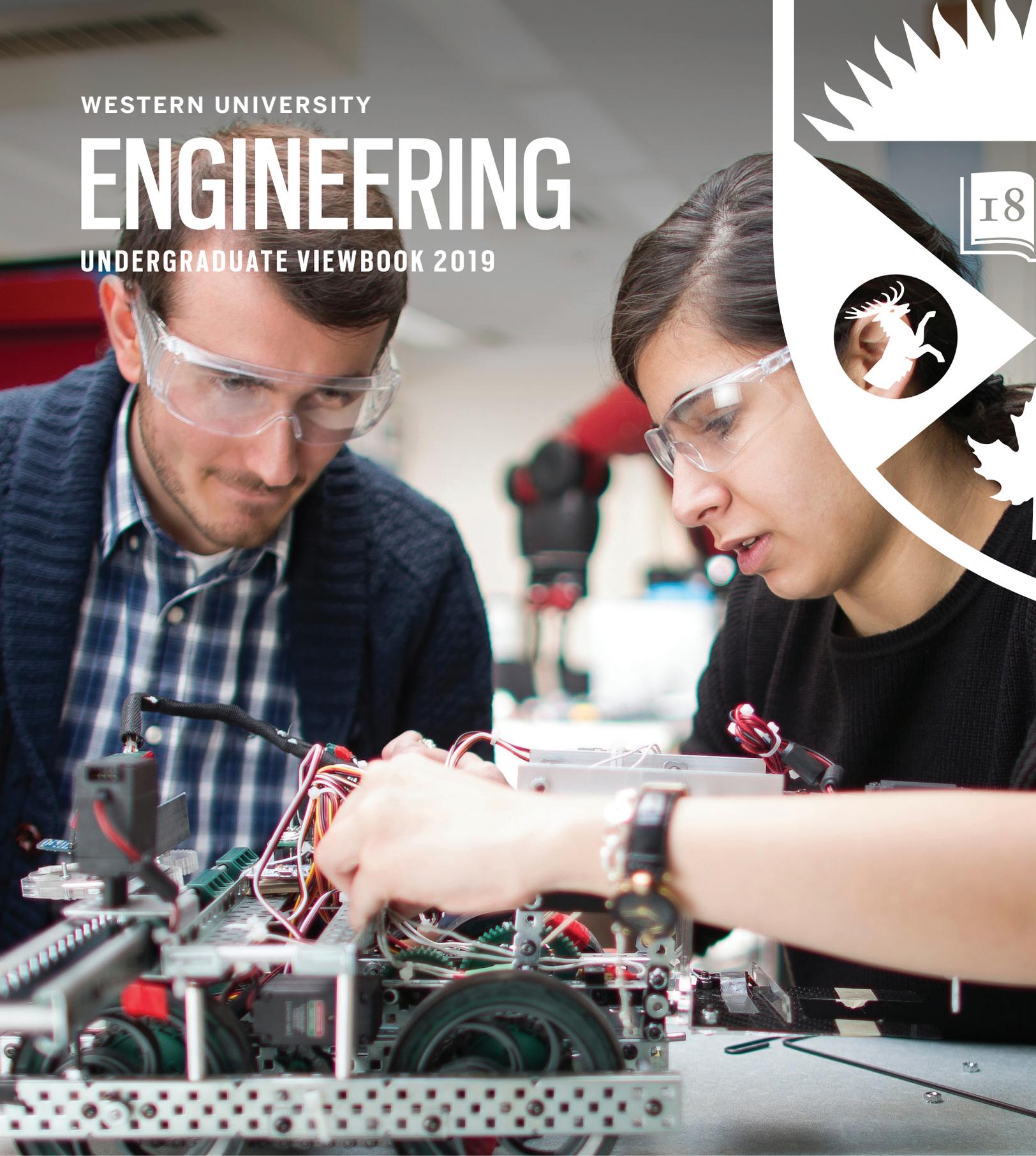


WESTERN UNIVERSITY

# ENGINEERING

UNDERGRADUATE VIEWBOOK 2019



Western  
Engineering

[eng.uwo.ca](http://eng.uwo.ca)



# WHY WESTERN ENGINEERING?

We deliver personalized and unique learning opportunities.

**When you study at Western Engineering, you have the opportunity to develop your skills in leadership and innovation and the flexibility to customize your degree.**

We offer a number of options to help you understand the important linkages between engineering and business, and provide solutions that will make a difference.

In your common first year, you will be introduced to Business for Engineers, taught through a case-study based approach to learning. You can enroll in one of our unique upper-year options including the Engineering and Ivey HBA dual degree program, or the Engineering Leadership and Innovation Certificate. These opportunities can be paired with any of our engineering programs, providing you with the path to be successful in your future career. By combining engineering with business knowledge, you will gain the fundamental skills to excel as a leader in your profession.



**ThreeC+** – A 100,000 sq. ft. building – will transform The Western Engineering Experience. Our new building is a practical and inspiring place where undergraduate students integrate classroom theory with hands-on learning as they design, build, test and refine ideas.

NEW ENGINEERING  
BUILDING  
THREE C+

“**Western Engineering feels like a family** and there are so many people who want to help you excel in your program. Engineering at Western is a team sport! This community pushes you to do your best, learn from your mistakes, and have fun along the way.”

**Alexandra Bachtold**  
UNDERGRADUATE ENGINEERING SOCIETY PRESIDENT



# YOUR FUTURE BEGINS HERE

“Western Engineering’s common first year provided me with a solid and diverse technical foundation along with business fundamentals to succeed in a Summer Co-op placement at Bruce Power – the world’s largest operating Nuclear Power Plant. Also, Western’s dual degrees, co-op opportunities and emphasis on being involved in extra-curricular activities were further reasons why I chose to come here. I wanted to have avenues to express myself as an individual outside of class work and I knew that Western would be the best place to do this.”

**Utsab Roychowdhury**  
MECHANICAL ENGINEERING STUDENT



## THE WESTERN ENGINEERING DIFFERENCE

Western Engineering offers you unique possibilities. You can build your future at Western with co-curricular and experiential learning opportunities, including:

- Internships and Co-ops
- Dual Degrees
- Certificates
- International Experiences
- Leadership Opportunities
- Exceptional Student Support

## JOIN A CLUB. COMPLETE AN INTERNSHIP. GO INTERNATIONAL. THE CHOICE IS YOURS.

When you join Western Engineering, you will be provided with the skills and knowledge to become a successful problem solver – prepared to address and find solutions to meet the needs of society. As you start your academic journey towards becoming a Professional Engineer, we will provide you with the foundation you need to excel in your chosen career. You will be given the opportunity to shape your academic experience in flexible and exciting ways, creating paths of study designed to your individual interests and aspirations.

## ADMISSION REQUIREMENTS

**Ontario high-school students:**

- English (ENG4U)
- Advanced Functions (MHF4U)
- Calculus and Vectors (MCV4U)
- Chemistry (SCH4U)
- Physics (SPH4U)
- Plus one other 4U or 4M level course (highest grade is chosen)

**Non-Ontario students: please visit [welcome.uwo.ca/admissions](https://welcome.uwo.ca/admissions)**

## FIRST YEAR



## LIVING-LEARNING COMMUNITY

Living-Learning communities are themed floors where residents who share the same academic faculty, program, or interest live together on the same floor. Engineering has a Living-Learning community in Essex Hall providing students an easy way to meet their first-year engineering peers, access to study groups, community and social events and upper-year mentors.

## HOME AWAY FROM HOME

Western Engineering provides a strong community environment. When you start your academic journey with us, you will join a cohort of approximately 600 first-year students.

Professors will know your name and academic counsellors will be available to help you navigate and succeed through your university experience.

## COMMON FIRST YEAR

When you start in September, your first-year academic counsellor will have your timetable ready for you. With our common first year, you and all of your first-year classmates will take the same courses. The Business for Engineers course in the first-year curriculum recognizes the importance of a business perspective for engineering practice and creates multiple opportunities for further educational experiences while you are at

Western. Throughout first year, you will have the opportunity to participate in activities to help with your transition into university life. You can join clubs and teams, get to know your first-year classmates and explore our engineering programs in more detail.

## ENGINEERING EXCELLENCE ADMISSION PROGRAM

Choosing an upper-year stream can be stressful and we want you to have options. Which is why **Western Engineering will guarantee your acceptance into the program of your choice** (except Mechatronic Systems Engineering) after first year if you:

- have a minimum entrance average of 85%
- maintain an average of 80% in first year
- no failures, on a full course load

## FIRST YEAR COURSES

- Applied Mathematics – Calculus
- Applied Mathematics – Linear Algebra
- Business for Engineers
- Chemistry
- Computer Programming Fundamentals
- Foundations of Engineering Practice
- Physics
- Properties of Materials
- Statics

## CONNECT Profile



## SUPPLEMENTAL ADMISSION FORM

We know you are not just your grades, so we are connecting your academics to all the awesome things you do.

Students are encouraged to complete a supplemental application form

that gives them the opportunity to add to their academic profile and demonstrate their leadership potential, engagement and initiative, and passion for engineering.



# GET INVOLVED

Western Engineering has an active Student Council — the Undergraduate Engineering Society (UES). The UES provides a student voice at various faculty meetings, organizes social events, and offers resources to support students.

## JOIN THE COUNCIL. GET INVOLVED. MAKE A DIFFERENCE.

Every year, more than 500 Western Engineering students participate in faculty-based groups, clubs and teams, as well as University-wide programs, and volunteer opportunities across the City of London. By participating in extracurricular activities, you will develop leadership skills, gain hands-on engineering experience, and build a new network of friends.

## WESTERN ENGINEERING IS A TEAM SPORT

An engineering degree can sometimes feel like an individual and competitive degree, but Western Engineering creates a different culture.

“The Western Engineering community is one of a kind — there is so much genuine support and encouragement from both faculty and other students. I’ve realized that at the end



of the day, any accredited engineering program is going to give you the same degree, but the experience you get will vary. For me, I know that I’ve found where I belong and I am beyond thankful that my string of decisions led me to

Western Engineering. At Western, engineering really is a team sport.”

**Priya Shrestha**  
GREEN PROCESS ENGINEERING STUDENT



# TEAM PROFILE

## WE MARS

By designing and building their own rover, WE MARS competes in the European Rover Challenge where their rover completes similar tasks to the rovers on Mars. Additionally, WE MARS prides itself in engaging youth in robotics through FIRST Robotics Competitions and community events by providing mentorship and organizational support.





# UPPER YEARS

## CIVIL ENGINEERING

**Improve quality of life for people around the world**

Civil engineers make communities safer places by providing essential infrastructure, solving environmental problems resulting from industrialization and resource consumption, and mitigating natural disasters. Learning in state of the art facilities, Western Civil engineering students take classes like structural analysis, wind engineering, geotechnical design and environmental engineering. This program prepares you to design a safer and better quality of life for the future.

### OPTIONS

- Structural Engineering
- Environmental Engineering
- Structural Engineering with International Development
- Environmental Engineering with International Development

### CAREER POSSIBILITIES

- Structural Engineering
- Environmental Consulting
- Water Resources
- Municipal Engineering
- Wind Engineering
- Construction

## CHEMICAL ENGINEERING

**Improve everyday living while protecting the environment**

Chemical engineers work to innovate and improve lives. Western Chemical engineering students use a multiscale engineering approach to design commercial processes that sustainably transform raw materials, living cells and microorganisms into useful consumer products that everyone uses daily, such as plastics, polymers, medicines, food, fuels, fertilizers, cosmetics, and consumer goods.

### OPTIONS:

- General Chemical Engineering
- Biochemical and Environmental Engineering

### CAREER POSSIBILITIES:

- Petrochemical Processing and Manufacturing
- Pharmaceutical Production
- Food Processing and Production



## GREEN PROCESS ENGINEERING

**Change the world's carbon footprint**

Western's Green Process engineering students address society's growing sustainability concerns by focusing on developing products and processes that are inherently clean and sustainable without sacrificing economic viability and efficiency. Students will apply principles of green chemistry, biology, physics and math to design new pathways that use alternative and renewable materials and energy sources to ensure minimum waste generation at the source.

### CAREER POSSIBILITIES

- Environmental Pollution Control and Remediation
- Sustainable Commodity Manufacturing
- Sustainable Energy Storage and Production
- Alternative Fuel Development and Manufacturing



## COMPUTER ENGINEERING

### Design the next digital phenomenon

Digital electronic systems are essential components of technologies such as: smart phones, other mobile communication devices, automotive, aerospace, and robotic systems and medical devices. Western Computer engineering students integrate principles and methods from electrical and software engineering in order to design and implement digital electronic systems. Computer engineers also develop integrated circuit hardware and the software that controls it.

### OPTIONS

- Electronic Devices for Ubiquitous Computing
- Software Systems for Ubiquitous Computing

### CAREER POSSIBILITIES

- Engineering and Scientific Consulting
- Telecommunications
- Computer Design and Manufacturing
- Smart Devices

## ELECTRICAL ENGINEERING

### Power the future

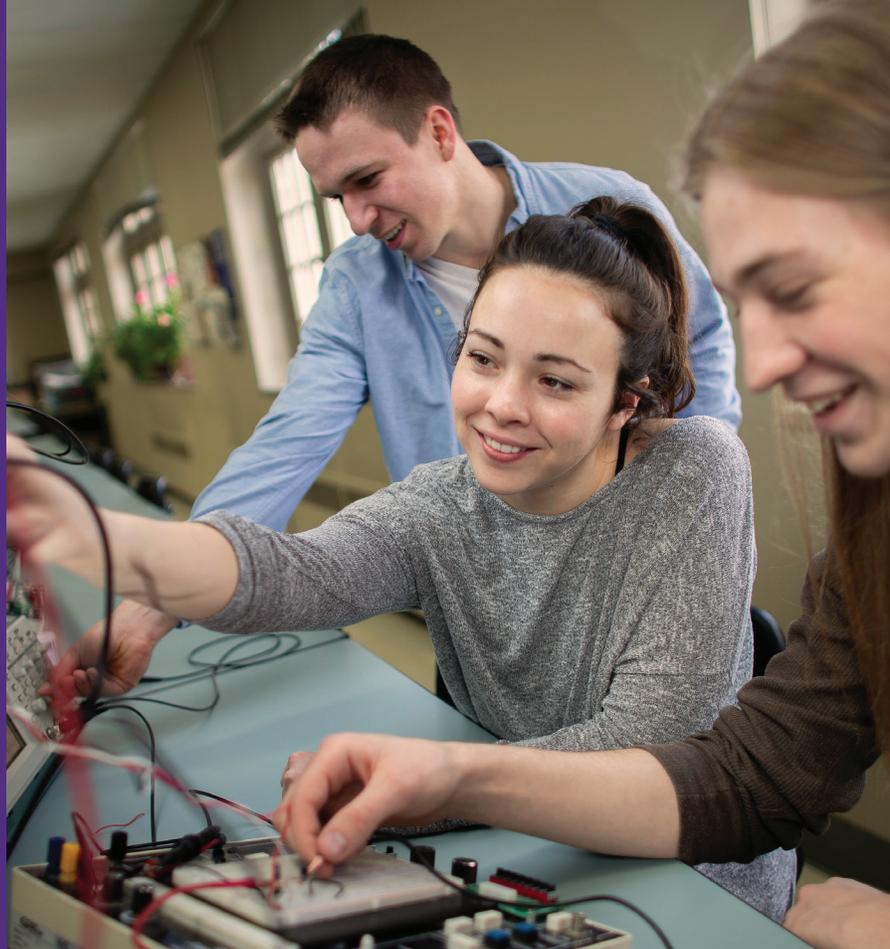
Electrical engineers harness electrical energy for human benefit. As a Western Electrical engineering student, you will embrace the study and application of electricity, electronics, and electromagnetism. Your knowledge will be applied to fields such as: electronics, digital computers, robotics, power engineering, telecommunications, control systems, and signal processing. Electrical engineering will prepare you to take on the world's power and energy challenges.

### OPTIONS

- Electrical Engineering
- Wireless Communication
- Power Systems
- Biomedical Signals and Systems

### CAREER POSSIBILITIES

- Bioengineering
- Consumer Electronics
- Telecommunications
- Power Systems





## INTEGRATED ENGINEERING

### Become an innovation leader

Integrated engineers work across fields realizing opportunities by implementing practical solutions. At Western, Integrated engineering students have a broad foundation in engineering fundamentals, developing skills to manage the interface between engineering disciplines. They are ideally suited to participate on and lead interdisciplinary engineering and business teams to seek innovative solutions to significant challenges, including: climate change, renewable energy, environmentally friendly buildings, food and water security, autonomous transportation systems, and much more.

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### CAREER POSSIBILITIES

- Engineering Consulting
- Engineering-based Startups
- New Product Introduction and Management

## MECHANICAL ENGINEERING

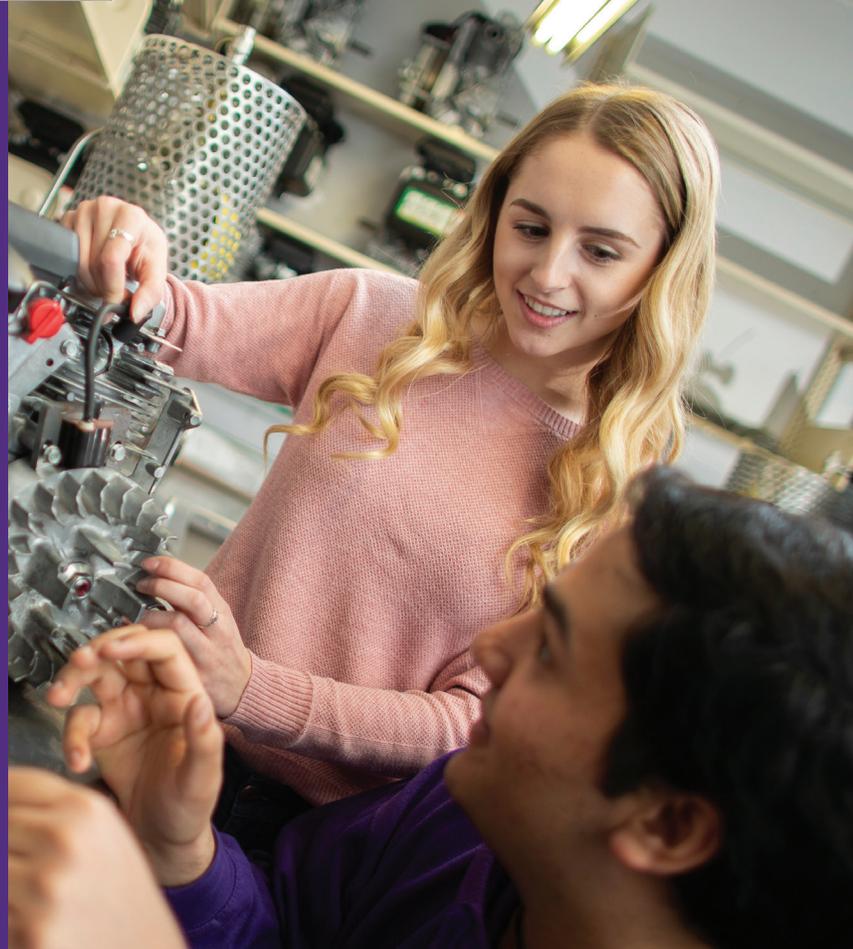
### Design a better tomorrow

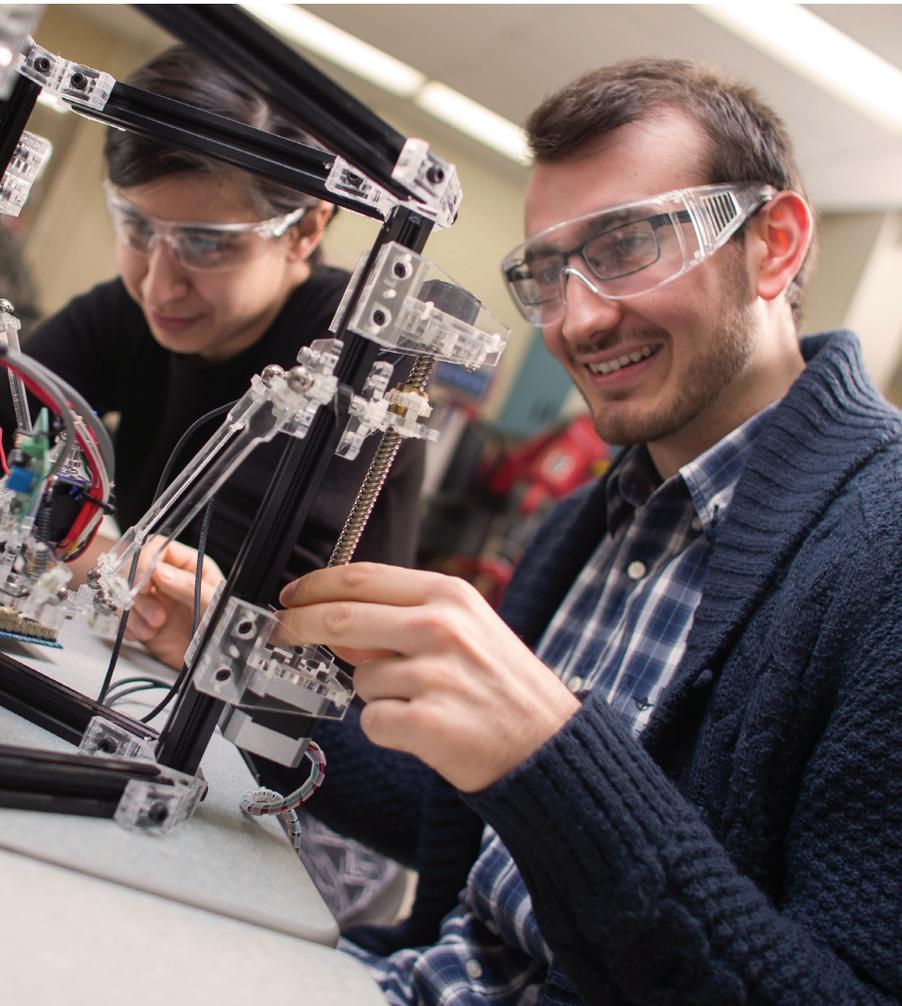
Mechanical engineers use fundamental engineering concepts and contemporary design practices to develop new devices, materials, processes and systems. As a Western Mechanical engineering student, you will apply the principles of physics and materials science for analysis, design manufacturing and maintenance of mechanical systems, smart materials, automotive and aerospace systems, and robotics. Fourth-year students also complete a major Mechanical Engineering Design Project, working closely with faculty members and industry partners.

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### CAREER POSSIBILITIES

- Motor Vehicle and Parts Manufacturing
- Aircraft and Parts Manufacturing
- Heating Ventilation and Air Conditioning
- Biomedical Equipment Design
- Power Generation
- Petroleum and Process Industry





## MECHATRONIC SYSTEMS ENGINEERING

### Develop intelligent systems and devices

Mechatronic Systems engineers combine mechanical, electrical, computer, control and systems design to create smart solutions to everyday problems. As a Western Mechatronic Systems engineering student, you will take fundamental courses in electrical, computer, and mechanical engineering, while simultaneously taking core Mechatronic Systems engineering courses that connect all of the programs. This provides you with the skillset to improve systems in healthcare, aerospace and robotics.

### CAREER POSSIBILITIES

- Robotics and Automation
- Aerospace
- Research and Development
- Controls and Systems Integration

## SOFTWARE ENGINEERING

Software engineering is a systematic and disciplined approach to developing software. It applies computer science and engineering principles to the creation, operation, and maintenance of software systems. Software engineers specify, design, implement, and maintain innovative software systems. Western's Software Engineering program is implementing the real-world design education approach. Students engage in experiential learning opportunities and project-based courses, building software systems, ranging from apps for mobile devices to systems used by world-wide organizations.

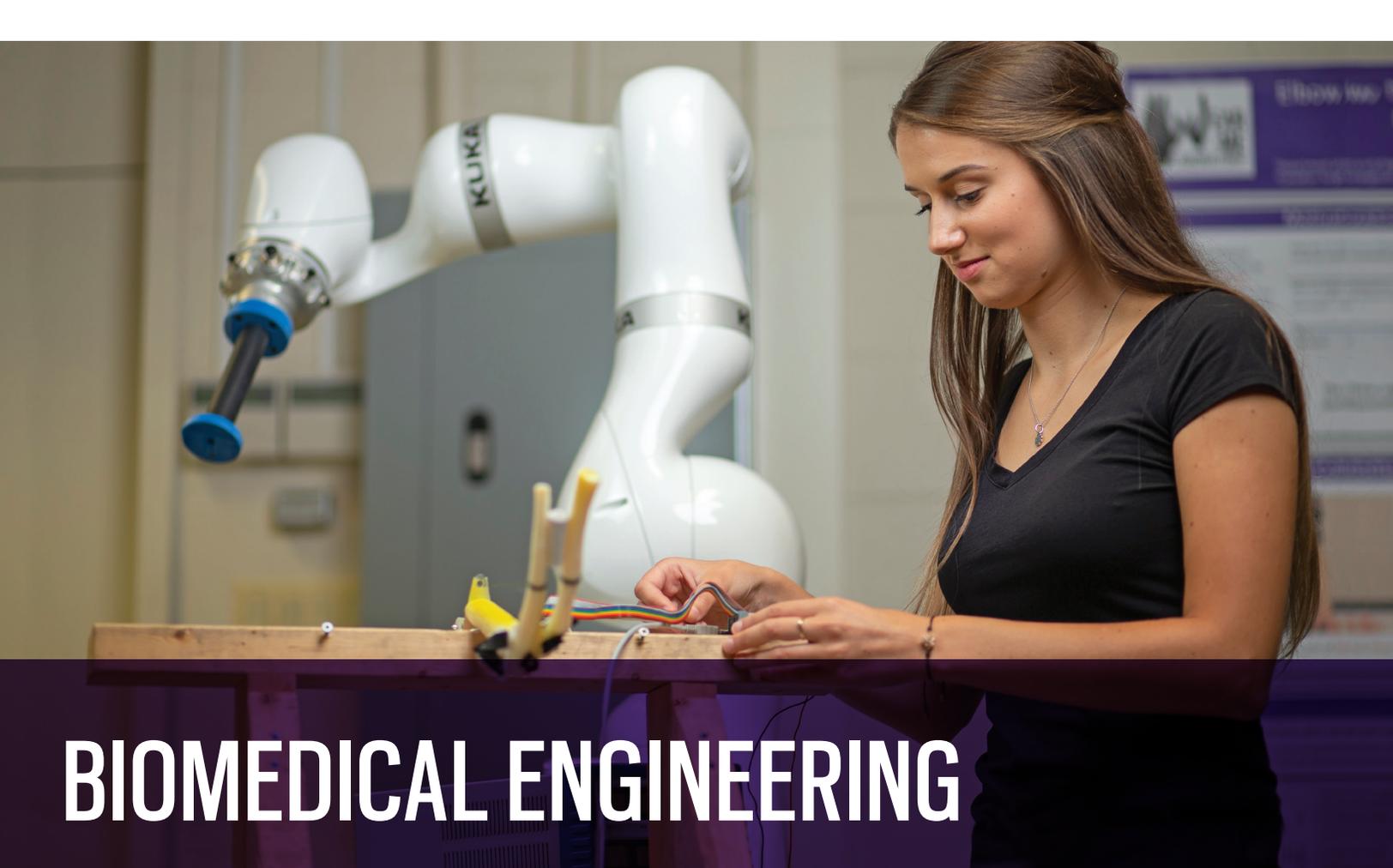
### OPTIONS

- Software Engineering
- Health Informatics

### CAREER POSSIBILITIES

- Systems Analysis
- Information Systems Management
- Data Modeling
- Video Game Development
- Website Design
- Network Systems Engineering





# BIOMEDICAL ENGINEERING

## DESIGN SOLUTIONS FOR GLOBAL HEALTH

Western's new Biomedical engineering undergraduate program is designed to be taken as a five-year dual degree in conjunction with a degree in a core engineering discipline - one of chemical, electrical, mechanical, or mechatronic systems engineering. Graduates of the dual-degree program will be well qualified for engineering positions in the medical device sector and a variety of other sectors, admission to leading Biomedical engineering graduate programs, and admission to medical school.

Students will enter the program from the Engineering common first year, develop a solid foundation in their core engineering discipline in Years 2 and 3, complete a Biomedical engineering cohort year in Year 4 consisting of interdisciplinary Biomedical engineering courses, fundamental biomedical science courses, and nontechnical electives related to healthcare issues, and then complete their core engineering degree and their Biomedical engineering degree concurrently during Year 5.

## INTENSIVE RESEARCH EXPERIENCE

Students will spend the summer between Years 4 and 5 in either a summer co-op with an employer in the biomedical sector or at a summer research placement, most commonly at Western or one of its affiliated hospitals or biomedical research institutes. Most students will continue their summer project as their final-year research thesis.

“My research includes designing a physical human arm simulator for the validation of wearable upper limb mechatronic devices, assisting in the design of a wearable tremor suppression glove prototype, as well as researching the current state of mechatronic prosthetic devices. This unique experience gives you the chance to not only learn new skills and programs, but apply your knowledge from the classroom to real-life engineering applications.”

**Jenna Wemple**  
MECHATRONIC SYSTEMS ENGINEERING STUDENT



# BUILD SUSTAINABLE SOLUTIONS

Address global challenges and turn innovative concepts into environmentally sustainable solutions at the undergraduate level. Study in two state-of-the-art green learning environments as Western Engineering now has two LEED (Leadership in Energy & Environmental Design) certified buildings: the Claudette Mackay-Lassonde Pavilion being gold certified and the new ThreeC+ building working toward platinum certification.

Each area of specialization provides you with the opportunity to work with green-energy sources, manage resource consumption, and create better places for people to live now and in the future.

## Chemical Engineering

*(Biochemical and Environmental Option)*

Combine a strong foundation in the fundamentals of chemical engineering, with further specialization in biochemical processes. Learn how to integrate engineering principles with knowledge of applied biology to design advanced biochemical systems for industrial and environmental applications.

## Civil Engineering

*(Environmental Option)*

Become a steward to maintain and protect the environment. Ensure enhanced quality of life by designing and implementing environmentally sustainable methods to treat water and wastewater, dispose of solid waste, and manage water resources.

## Civil Engineering

*(International Development)*

Explore the complex societal, environmental, political, and economic issues associated with building safer communities in Canada and in the developing world. Participate in an optional placement opportunity to work in developing countries or in-need communities in Canada.

## Green Process Engineering

Join a new era of engineers specializing in the creation and implementation of environmentally preferable or 'green' approaches to the design and development of processes and products to meet society's needs. Explore alternative sources of energy with reduced carbon emissions.

“Focusing on both the current, and more environmentally friendly and sustainable ways of chemical designs and processes is a huge asset because you learn different ways a process can be completed, as well as figure out which one is the most efficient and economical. It also focuses on renewable energies such as green power, solar power, and converting waste to bio-fuels.”

**Lena Szykowski**  
GREEN PROCESS ENGINEERING STUDENT

Lena, a Green Process Engineering student is standing on the roof of the new ThreeC+ building, which features the latest Photovoltaic Array technology using bifacial PV Solar Panels installed above the roof system and integrated with the building structure. This system offsets the power required from offsite sources by generating power directly into the building electrical infrastructure. The Array includes a separate research section, with adjustable PV racking and other opportunities for student learning.



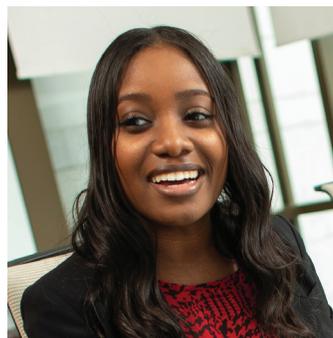
# THE IVEY HBA ADVANTAGE

## COUNTLESS OPPORTUNITIES

Great engineering careers are built on leadership and innovation. The most respected companies in the world rely on critical thinking and analytical skills to achieve breakthrough engineering technologies. Leaders in these organizations seamlessly blend engineering and business perspectives to confront important problems facing society.

**Honors Business Administration (HBA)** at the Ivey Business School is Canada's foremost undergraduate business program and recognized internationally for the leadership opportunities created for its graduates. Combined with a Bachelor of Engineering Science (BESc) degree, graduates go on to work in nearly every industry, from engineering companies and strategy consulting to finance.

“There are few Canadian universities that offer a robust **Engineering and Business dual degree program** like the one offered at Western University. This program has



allowed me to explore my passion for both chemistry and business through eye-opening experiences inside and outside of the classroom. This degree has taught me to approach problems with an analytical and holistic view,

an invaluable skill set to employers.”

**Shoshauna Oryema**  
CHEMICAL ENGINEERING AND IVEY HBA STUDENT

# DUAL DEGREES

THE EVIDENCE IS IN: DUAL DEGREES WILL GIVE YOU AN EDGE



“The combined degree of engineering and law gave me the opportunity to pursue an uncommon field of study that I have a great interest in. With this program, I have the ability to use my qualitative engineering skills and communicative legal education to impact the industry in a unique way. Western gave me the chance to integrate my two distinct passions, graduate with a degree that will make me stand out to future employers and get me a job I love.”

**Paige Newman**  
CIVIL ENGINEERING AND LAW STUDENT

**Western Engineering offers opportunities that allow you to graduate with two full degrees in less time than it would take to complete them individually.**

A dual degree gives you a competitive edge towards a rewarding career. You will have the engineering skills and knowledge to become a successful problem solver who is prepared to find solutions to current and future problems around the world in a traditional engineering career or profession of your choice.

## ENGINEERING AND IVEY HBA

Addressing today's global, economic, and environmental challenges requires people who are able to find creative yet practical solutions. In just five years, you are prepared to be a technology-proficient leader by combining an Honors Business Administration (HBA) degree at the Ivey Business School with your Bachelor of Engineering Science (BESc) degree.

## ENGINEERING AND LAW

Unique in Canada, the dual degree with Western Law allows you to complete a Juris Doctor (JD) with a Bachelor of Engineering Science (BESc) in six years. This program gives you the legal and engineering knowledge and skills to meet industry demands and solve societal problems.

## BIOMEDICAL ENGINEERING

We are looking forward to offering dual degrees that combine Biomedical Engineering with Chemical, Electrical, Mechanical or Mechatronic Engineering. These combinations extend core engineering disciplines to the design and analysis of medical devices and the application of engineering to solve problems in medicine and biomedical sciences.

## ENGINEERING AND YOUR PASSION

We offer more than 50 other Concurrent degrees involving a major module in faculties such as Science, Music, Social Science or Arts & Humanities so you can pursue all of your passions in life.



# ENHANCE YOUR EDUCATION



## ENGINEERING LEADERSHIP AND INNOVATION CERTIFICATE

Enhance your undergraduate education with entrepreneurial knowledge and innovation skills by earning the Engineering Leadership and Innovation Certificate. Students who complete this certificate will acquire practical experience in the creation of new products and services, within startups and established companies. Students will learn how business and engineering perspectives reinforce each other to create long-term value and benefit through the implementation of emerging technologies.



## PRACTICAL ELEMENTS OF MECHANICAL ENGINEERING EXTERNSHIP

Western Engineering has collaborated with Fanshawe College to provide you with valuable hands-on experience through an externship. After first year, you can complete a four-month externship to earn an Ontario College Local Certificate and, after completing a second four-month term, an Ontario College Graduate Certificate. Practical courses include machining, welding and metrology, plus mechanical engineering skills. This externship complements your technical knowledge with hands-on experience.

## INTERNATIONAL LEARNING AWARD

At Western, the world is your classroom. Every student with a cumulative 80% average at the end of Year 2 will receive a \$1,000 award to complete an international learning experience in third year.

# INNOVATION STARTS HERE

Western Engineering students and alumni excel as innovative leaders. Bring your ideas to life through entrepreneurship, design and technical expertise.

## ACCELERATE YOUR STARTUP

Western is home to Propel, an entrepreneurship accelerator that provides co-working space, seed funding, world-class mentorship, and hosts training programs, events and workshops for startups at all stages of growth.



**Gamal Assad**, is a Mechanical and Materials Engineering student and entrepreneur. His company Orgashell, which aims to create organizational solutions for the modern traveler through innovative and adaptive design, was awarded \$3,000 from Propel's Seed your Startup pitch competition.

“The flexible nature of Western’s engineering program has allowed me to pursue a business opportunity that spawned from an engineering co-op position. My product was validated by Western Baseball and in the engineering labs, and is now the subject of my 4th year engineering thesis and will be incorporated into my future capstone project.”

**Mitchell Godkin**  
MECHANICAL AND MATERIALS ENGINEERING STUDENT



**Mitchell Godkin** is the creator of Leadbury Bat Co., a premium baseball bat manufacturer. Developed and tested at the General Dynamics lab at Western Engineering, his innovative drying method is reinventing baseball bat manufacturing.



# GAIN WORK EXPERIENCE

While completing your engineering degree, you are encouraged to participate in a year-long Internship and/or Summer Engineering Co-op. You will earn money and gain extremely beneficial work and networking experience. Internship and Co-op opportunities are available with local, national, and international employers.

## INTERNSHIP

Gain a competitive advantage over other engineering graduates by completing a year-long Internship before the last year of your engineering degree. Throughout your placement, you will have the opportunity to work on advanced engineering projects from start to finish.

## SUMMER CO-OP

Gain valuable engineering and career-related work experience during the summer months (May to August) to enhance and build on the skills acquired during your engineering degree. Co-ops are flexible — you can complete one every year starting in the summer after first year, or choose to complete just one during your time at Western.

## TRANSPORTATION CAREER DEVELOPMENT PROGRAM

Broaden your knowledge of design and construction through this program. A government agency, a consulting company, and a contractor have formed a partnership to hire three first-year students interested in Civil Engineering to rotate between the organizations during each summer of their first, second, and third year.

## CAREER SERVICES OFFICE

Western Engineering's Career Services Office offers résumé and cover letter review, interview preparation, and career planning meetings to assist you. These services are available to all students, making the transition from university to the workforce as stress-free as possible.

“The internship program at Western has given me the opportunity to broaden my career options and explore different opportunities. Working at BOS Innovations as Project Manager Intern has given me the exposure to work in an advanced automation industry and have the experience needed for tomorrow's workforce.”

**Khaled Humaid**  
MECHANICAL ENGINEERING STUDENT, BOS INNOVATIONS

“I chose to complete a summer co-op to get hands-on experience outside the classroom. I did a research-based co-op and found it interesting to see how what I had learned in the classroom applied in industry. Giving presentations to Supervisors and writing reports allowed me to practice my soft skills and by doing programming I practiced my technical skills. I am glad I had the opportunity to enhance my education.”

**Claire Lizotte**  
 MECHATRONIC SYSTEMS ENGINEERING STUDENT,  
 NATIONAL RESEARCH COUNCIL CANADA



**2018  
 AVERAGE  
 SALARIES**

**\$50K/YR  
 INTERNSHIP**

**\$20/HR  
 CO-OP**

**Where do our students work?**

- |   |  |
|---|--|
| BOS Innovations                               | Linamar Corporation                                      |
| 3M Canada                                     | Magna International                                      |
| Aecom   | Microsoft  |
| ArcelorMittal                                 | NOVA Chemical Corporation                                |
| GE Canada                                     | Ontario Power Generation                                 |
| General Dynamics<br>Land Systems              | RBC  |
| General Motors                                | Siemens Canada Ltd.                                      |
| Google  | Stantec Consulting                                       |
| Honda   | Suncor Energy Inc.                                       |
| Husky Energy Inc.                             | Toronto Hydro  |
| Hydro One                                     | Union Gas Ltd.   |
| IBM Canada Ltd.                               | WSP Canada Inc.  |
| Imperial Oil Limited/<br>ExxonMobil Companies | Local, Provincial, and<br>Federal Government<br>Agencies |
| Labatt Brewing Company                        | ....and many more!                                       |

# INTERNATIONALIZE YOUR WESTERN ENGINEERING EXPERIENCE

Each year, Western Engineering welcomes students from across Canada and from around the world. More than 50 countries are represented in Western Engineering's undergraduate and graduate programs. We are committed to diversity and inclusion by providing a welcoming environment to all students.

**Travel. Learn a new language.  
Gain global experience. Help people in need.**

Engineers often work for multi-national companies and face opportunities that require a broader vision, communication across cultures, disciplines and languages, and an understanding of other societies and cultures. There are many paths at Western Engineering to prepare you for global impact.

## GLOBAL AND INTERCULTURAL ENGAGEMENT HONOR

Western Engineering students have experienced international engagement by travelling to China, Dominican Republic, England, France, Germany, Ghana, Peru, and other countries.

## CIVIL INTERNATIONAL DEVELOPMENT PROGRAM

In this program, you will specialize in applications to address complex societal, environmental, and economic issues and infrastructure problems for communities in developing countries. You can also complete a Summer Community Development Placement to gain technical engineering experience in the context of development.

## ENGINEERS WITHOUT BORDERS

Engineers Without Borders promotes human development through increasing access to technology to help communities around the world improve their standard of living. Western's branch has a great variety of portfolios, including advocacy, fair trade, youth and public engagement, as well as a fantastic creative team.

## INTERNATIONAL EXCHANGE

You can complete part of your degree overseas by participating in courses with international components. In third year, you will have the option to travel and live abroad while pursuing your studies through academic international exchanges.







As a summer research student, Steven's focus is to develop the mechanical design of a soft wearable wrist brace that would be able to assist rehabilitation patients with every-day activities while improving their injury at the same time.

# SHAPE THE FUTURE

Western Engineering is committed to making the world a better place. Our academic programming and strategic goals have a strong emphasis on sustainability, improving the health-care system, mitigating the effects of natural disasters, and increasing diversity in the field of engineering.

## RESEARCH WITH IMPACT

At Western Engineering, we conduct research directed towards benefiting society. Our leading-edge research provides the foundation for graduate student training and undergraduate learning. Our faculty members are actively involved in projects at the frontier of knowledge. Their expertise is brought to you in the classroom and is applied in industry every day.

As an undergraduate student, you will have ample opportunities to participate in research. For example, you could start the **Accelerated Master's Program** during your fourth year of study, allowing you to complete graduate courses in lieu of technical electives, which simultaneously satisfies requirements for your bachelor's degree and the beginning requirements of your master's degree. The Accelerated Master's Program allows you to complete a Master of Engineering Science degree in just one year beyond your bachelor's degree.

“Since doing research, I have been able to realize how much work and effort goes into the development of a product. The reason I initially wanted to do research for the summer was to do design work and gain hands-on technical experience. So far, my research has exceeded my goals by teaching me to think creatively and learn about the complexity and problems that come with designing a product.”

**Steven Lawrence**  
MECHATRONIC SYSTEMS ENGINEERING STUDENT

## SUMMER RESEARCH

Western offers multiple programs providing opportunities for undergraduate students to participate in research over the summer term. Our programming is designed to ensure that all students interested in conducting research will have the opportunity to do so.

You can also apply for research fellowships and awards such as the **NSERC Undergraduate Student Research Awards**, or complete an internship or co-op with one of our leading-edge research centres and institutes, including the:

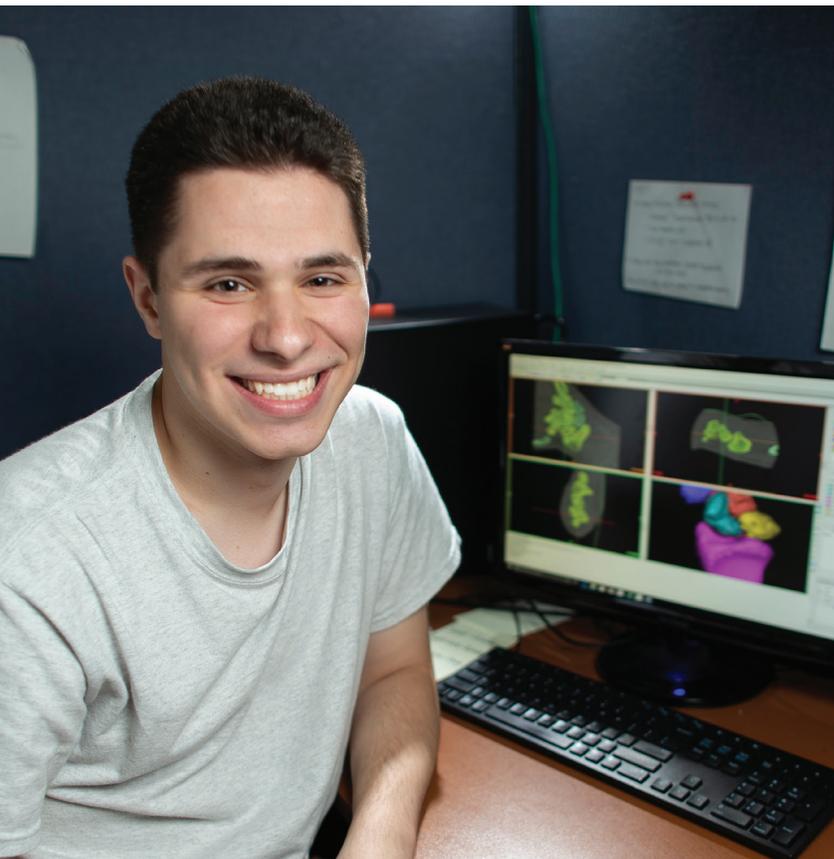
- Boundary Layer Wind Tunnel Laboratory
- Fraunhofer Project Centre for Composites Research at Western
- Geotechnical Research Centre
- Innovation Centre for Information Engineering
- Institute for Chemical and Fuels from Alternative Resources
- International Composite Research Centre
- Particle Technology Research Centre
- Wind Engineering, Energy and Environment Research Institute



“The summer research program has **proved to be a valuable opportunity** to engage in meaningful work while gaining exposure to the laboratory environment.”

**Ammi Jani**  
CHEMICAL ENGINEERING STUDENT

Ammi's research this summer focuses on the characterization of biomaterials including adipose and cartilage derived microcarriers for the purpose of soft tissue regeneration.



“Working with graduate students who are devoted to researching solutions to common issues people have with their arms has **inspired me to further pursue a career in research.**”

**Karam Albakri**  
MECHATRONIC SYSTEMS ENGINEERING STUDENT

Using 3D software, **Karam** is analyzing the rotation and translation of the scaphoid bone to see its impact on surrounding bones in the wrist in the scenario of a fracture. Through his research he hopes to create a better method to assist surgeons in determining whether a patient has a scaphoid fracture or not.



# JOIN OUR NETWORK OF EXTRAORDINARY ALUMNI

When you graduate from Western Engineering you will join a network of 13,000+ alumni who are working locally, nationally and internationally as business and innovation leaders.

Meet and connect with other Western Engineering alumni at:

[www.linkedin.com/school/westernueng](http://www.linkedin.com/school/westernueng)

## FALL PREVIEW DAY

Sunday, November 18, 2018

## MARCH BREAK OPEN HOUSE

Saturday, March 9, 2019

For more information about upcoming events, visit:

[eng.uwo.ca/future\\_undergrad](http://eng.uwo.ca/future_undergrad)

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## INFORMATION FOR PARENTS

[welcome.uwo.ca/parents](http://welcome.uwo.ca/parents)



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