Biochemistry

Made in Windsor.

BIOCHEMISTRY

BIOCHEMISTRY AND BIOMEDICAL SCIENCE (HEALTH STREAM)

INTERDISCIPLINARY ARTS AND SCIENCE

uwindsor.ca/science/chemistry

Biochemistry Experience Map

University of Windsor

UWindsor Life

Highlights and Skills

PROGRAM HIGHLIGHTS

Biochemistry (H)(T)(C) This is where chemistry comes to life. If you're interested in the chemistry of DNA, proteins, and enzymes, as well as the fundamental relationships between chemistry and living organisms, you'll find this program fascinating.You'll be in a lab within weeks of starting school and have the chance to do research throughout the program and even participate in a co-op internship. Biochemistry prepares you for professions from the lab to Law.

MIN. AVG.* 70% **ONTARIO COURSE REQUIREMENTS** ENG4U, MHF4U, SCH4U and SBI4U. MCV4U is strongly recommended. SPH4U is recommended. A minimum 75% average of all science and math courses is also required. Biochemistry students may apply to co-op internship in Year 3.

Biochemistry and Biomedical Science (Health Stream) (H) Calling all future health professionals! This program gives you a strong background in both biochemistry and biomedical science, fundamental to health and medicine. You'll be in a lab within the first two weeks of this program and get the chance to conduct undergraduate research with hands-on learning in courses like CURE. You'll have a chance to work alongside clinical researchers and medical professionals learn about funding, project management, communication and other issues of cancer and health research.

MIN. AVG.* 75% **ONTARIO COURSE REQUIREMENTS** EENG4U, MHF4U, SCH4U, and SBI4U. Both MCV4U and SPH4U are strongly recommended. A minimum 75% average of all required science and math courses is also required.

Interdisciplinary Arts and Science (H) If high achievement and diverse academic pursuits are in your DNA, this elite program is for you. It's for students who want to develop knowledge and skills in the sciences, arts, humanities and social sciences. Blend your interests – drama with biomedical or biochemistry with music. You can tailor your program to match your interests and career aspirations.

MIN. AVG.* 80% **ONTARIO COURSE REQUIREMENTS** ENG4U, MHF4U, and two from SBI4U, SCH4U, or SPH4U. MCV4U is strongly recommended.

FUNCTIONAL KNOWLEDGE

- Understanding and analyzing cellular and other biological/chemical structures, organ systems, and various processes involved in their interrelation
- Testing and assessing materials to identify potential chemical reactions and determine concerns
- Operating advanced scientific laboratory equipment and instruments; implementing appropriate techniques for studying chemical processes and reactions
- Planning, conducting, recording, and presenting scientific research to a high degree of competency
- Designing experimental studies to accomplish targeted goals or test specific hypotheses

*(H) Honours – 4-year program (T) Thesis available (C) Combined Honours programs available * Minimum grade point average for admission to program. A higher average may be required.*

Build your Skills and Experience

Your UWindsor experience is more than attending classes. It is a combination of academics, co-curricular activities, and extracurricular involvement. By making the most of all three elements of your university experience, you will maximize your opportunities to build your skills, broaden your personal network, and clarify your long term academic and career goals.

CURRICULUM
Courses of study specific to each program

CO-CURRICULAR
Activities and experiences that complement coursework (Outstanding Scholars, peer mentoring, VIP)

EXTRACURRICULAR
Activities falling outside the scope of set curriculum (Part-time job, clubs, volunteering, athletics)

Career Planning Cycle

Intentional career planning will help you prepare for your next step after graduation and beyond. It is a fluid, dynamic, and lifelong process. You can move on or return to an earlier stage in the cycle at any time.

Explore Opportunities Using This Chart

Explore a selection of opportunities recommended for students in your program. This chart shows some of your many options – you don't have to do everything on it or limit yourself to it. Engage in opportunities from each of the three categories to set yourself up for success.

High-Impact Practice (HIP)

A HIP is an enriching educational experience that can be life-changing and often includes learning outside of the classroom while encouraging meaningful interaction and collaboration, such as:

- Co-op, internship or field experiences
- Research with faculty
- Culminating senior experience
- Capstone courses
- Service-learning
- Learning communities
- Study abroad

	First Year	Middle Years	Final Year
Academics *Your Coursework*	• Take required courses including General Chemistry, Cell Biology and Biological Diversity, Differential and Integral Calculus, Introductory Physics, and Arts/Social Science option • Review degree course requirements for all years of study and mesh them with professional or graduate school aspirations • Participate in our **PASS** program during **Welcome Week** to be coached on the skills necessary to be successful as a Faculty of Science student • Visit the **Chemistry Resource Centre** regarding any questions about your program • Meet with an academic advisor or program coordinator • Receive mentorship from any of your professors in Chemistry & Biochemistry or an upper-year **MySci** advisor	• Take required courses and check in with an academic advisor to make sure you are on the right path • Consider completing an undergraduate research project in final year HIP • Begin taking courses related to pharmacology, metabolism, drug design, and DNA science and diagnostics • Seek out courses that offer experiential learning HIP • Continue taking courses required as preparation for professional schools • Study for and take professional school admission tests of interest • Consider declaring a minor and/or specialization	• Meet with an academic advisor to go over graduation requirements • Complete all required courses for your degree • Apply to graduate through **UWinsite Student Portal** • Undertake an undergraduate research project with a faculty member HIP • Complete a minor in a second science discipline if declared
Experience *Ways To Get Involved*	• Begin the process of becoming a **LEAD Medallion Scholar** and participate in credit and volunteer activities HIP • *Discover* research opportunities as part of the **Outstanding Scholars** program HIP • Join the **USci Network** to take part in collaborative and integrative science experiences • Be *Engaged* by volunteering in a lab to participate in research with professors and graduate students HIP • Join a club like the **Chemistry Club, Students Offering Support** or **Science Society** • Participate in the **Bystander Initiative** workshop to gain skills that will help you be an effective and supportive ally to prevent sexual assault on campus • Apply for a co-curricular experience such as **VIP-Community Service Learning**	• Choose to apply to co-op internship in Year 3 • Participate in **Work-Integrated Learning (WIL)** through paid, 8-to-16 month internships with industry partners HIP • Apply for an **NSERC** – Undergraduate Student Research Award • Participate in the **UWill Discover** undergraduate research conference HIP • Apply your knowledge in a summer research assistant or teaching assistant position in Chemistry and Biochemistry HIP • Gain a **Global Perspective of Science (GPS)** through an international exchange or by studying abroad HIP • Expand your skills by taking on a summer, part-time or volunteer position • Be *Engaged* through service learning opportunities with **Let's Talk Science** and **Science Rendezvous** HIP • Gain valuable *Leadership* skills through roles within a club or society	• Join a professional association in your field such as the **Canadian Society for Molecular Biosciences** or the **American Society for Biochemistry and Molecular Biology** • Conduct field research with a faculty member HIP • Become a tutor for **Students Offering Support (SOS)** HIP • Become a **MySci** advisor to provide academic support and mentorship for first-year students • Complete **LEAD Medallion Scholars** in two areas for Bronze, three areas for Silver, or four areas for Gold, in accordance with *Leadership, Engagement, Application, Discover* HIP
Career *Plan Ahead For What's Next*	• Start planning your career by making a list of things you enjoy, your skills and areas where you excel • Meet with a career advisor in **Career Development and Experiential Learning (CDEL)** for help developing a plan for your future years • Consider a **Career Exploration Program** appointment to help you identify possible career paths • Get involved with a part-time job, volunteer opportunity, campus group, or research assistantship • Attend **CDEL workshops** to learn how to find a summer or part-time job and write a university-level resumé • Chat with an advisor during **CDEL**'s Drop In hours to get answers to your career and job search questions	• Research career fields and occupations with the help of a **CDEL** career advisor • Explore opportunities and meet potential employers by participating in **Job Shadow Experience**, job fairs, and industry networking events • Explore further educational opportunities by attending the **Graduate and Professional Schools Fair** and researching admission requirements for programs that interest you • Create a **LinkedIn** profile and have it critiqued by **CDEL** • Take part in informational interviews and join online communities like **LinkedIn** and **Ten Thousand Coffees** to connect with people in your targeted profession or industry • Search job postings to learn what skills, knowledge, and credentials you will need for potential careers	• Meet with **CDEL** to prepare application documents like a resumé, cover letter, CV, or personal statement for jobs and education programs you are applying to • Attend **CDEL's workshops** on interview skills and job search strategies • Set up a mock interview with a career advisor for professional school or job applications • Take part in recruitment events and job fairs hosted by **CDEL** and other organizations • Compose a portfolio of relevant academic and work experience • Explore professional development opportunities through **Continuing Education** • If you are considering applying to graduate or professional school, be aware of early application deadlines

Life After Graduation

"The small class sizes at UWindsor allowed me to receive the necessary one on one attention when I was not understanding the material. For this reason, I was able to have a great core knowledge of my science classes that has helped me to excel in dental school."

Shelby Koschuck –
BSc (Honours) in Biochemistry

59 **Number of Graduates**
(2020)

Career Tracks*

Agricultural scientist
Dentist
Doctor
Ecological assessor
Entrepreneur
Environmental consultant
Food inspector
Food technician
Health educator
Industrial hygienist
Lab technician
Laboratory supervisor
Land surveyor
Lawyer
Medical director
Nutritionist
Optometrist
Pharmaceutical salesperson
Pharmacist
Professor
Project manager
Quality assurance supervisor
Radiation therapist
Research co-ordinator
Soil tester
Teacher
Toxicologist
Veterinarian
Water treatment technician

** Additional education and/or training required for some of the above careers.*

Common Sectors for Graduates

- **Academia:** Advanced chemical research
- **Biomedical and biotechnical research**
- **Chemicals, petrochemicals and pharmaceuticals**
- **Education:** Curriculum design, teaching
- **Food sciences, production, and regulation**
- **Government:** research and policy development
- **Health-care professions**
- **Industry:** Consulting, product development/testing
- **Patent law**
- **Physical science industries**

Career-Readiness Competencies

- Critical Thinking & Problem Solving
- Professionalism & Work Ethic
- Teamwork & Collaboration
- Communication

Campus Resources

- Research undergraduate scholarships and bursaries through the **Student Awards and Financial Aid Office**
- Visit **Leddy Library** and the **Writing Support Desk** for help with academic assignments
- Check out the **Bounce Back** program designed to improve academic performance as well as decrease feelings of stress and anxiety through both effective learning strategies and life skills acquisition
- Build leadership skills and find leadership opportunities at the **Leadership Hub**
- Get advice and support about your academic status by making an appointment with **Central Academic Advising**
- Seek out assistance with academic accommodation from **Student Accessibility Services**
- Discover ways to get involved on campus through the **Student Success and Leadership Centre**
- Broaden your cultural awareness through the **International Student Centre** and **Student Exchange Office**
- Look into the **Ignite: Work Study** program for on-campus employment
- Get assistance developing your career plan and job search skills from **Career Development and Experiential Learning**
- Develop your entrepreneurial skills and learn how to start your own business at **EPICentre**
- Find support for Indigenous learners and broaden your understanding of Indigenous culture by visiting the **Aboriginal Education Centre - Turtle Island**
- Tend to your health and wellness with support from **Student Health Services,** the **Wellness Outreach Office** and **Lancer Recreation**
- Receive confidential mental health counselling delivered by trained professionals at the **Student Counselling Centre**
- **Prevent.Resist.Support.** Seek personal support or learn more about sexual violence prevention and resistance education through the **Office of Sexual Violence Prevention, Resistance & Support**
- Explore professional development opportunities through **Continuing Education**

experience.uwindsor.ca

Student Recruitment

Phone: 519-973-7014
Toll-Free: 1-800-864-2860
Email: info@uwindsor.ca

Department of Chemistry and Biochemistry

Phone: 519-253-3000, Ext. 3521
Email: chembiohead@uwindsor.ca

Career Development and Experiential Learning

Web: uwindsor.ca/cdel
Email: careerservices@uwindsor.ca