

# Physics

*Made in Windsor.*



**PHYSICS**

**MEDICAL PHYSICS**

**INTERDISCIPLINARY ARTS AND SCIENCE**



[uwindsor.ca/science/physics](http://uwindsor.ca/science/physics)







Physics  
Experience Map






University  
of Windsor

## Highlights and Skills

### PROGRAM HIGHLIGHTS

**Physics**     \* Become a powerful force in the worlds of academic or industrial research, or the tech industry. Our physics grads are in high demand, with an employment rate of nearly 100 per cent. You will learn how the universe works—from the fundamental forces of nature to their effects on matter and the environment around us. We offer lots of opportunities for hands-on learning, and the ability to customize your degree to your interests through optional courses or by combining your physics degree with another discipline.






**MIN. AVG.\* 70% ONTARIO COURSE REQUIREMENTS**  
ENG4U, MHF4U, and SPH4U are required. MCV4U is strongly recommended. SCH4U is recommended. A minimum 70% average of all attempted science and math courses is also required.

**Medical Physics**    \* Explore the physics of diagnosing and treating cancer and other diseases. Specialize in the areas of medical imaging and radiation therapy. You'll take courses with hands-on laboratory components and be able to tailor your degree by choosing options that match your interests. You can start your career upon graduation or go on to grad or professional schools.

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### FUNCTIONAL KNOWLEDGE

- Understanding the various properties, states, structures, and behaviours of matter to a high level
- Performing quantitative analyses involving mathematics and applied science and physics
- Applying computer analysis methods and algorithms
- Developing complex theoretical models to analyze specific behaviours and interactions
- Operating advanced scientific laboratory equipment and instruments
- Planning, conducting, recording, and presenting scientific research to a high degree of competency

 Co-op available  General - 3-year program  Honours - 4-year program  Thesis available  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.

	<b>CURRICULUM</b> Courses of study specific to each program
	<b>CO-CURRICULAR</b> Activities and experiences that complement coursework (Outstanding Scholars, peer mentoring, VIP)
	<b>EXTRACURRICULAR</b> 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

## Academics




Your Coursework





### First Year

- Take required courses including Introduction to Physics I and II and General Chemistry I and II
- 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 **Physics Resource Centre** regarding any questions about your courses
- Meet with an academic advisor in the Department of Physics
- Receive peer mentorship from an upper-year **MySci** advisor
- Attend **Fall Introduction to the Department**, as well as **Meet the Professor Night**

### Middle Years

- Take required courses and check in with academic advisor to make sure you are on the right path
- Look into completing an undergraduate research project in final year 
- Consider completing a physics degree with either medical physics or high technology
- Attend a weekly graduate seminar of interest
- Seek out courses that offer experiential learning 
- Continue taking courses required as preparation for professional schools
- Study for and take professional school admission tests of interest
- Consider completing degree in combination with a Computer Science, Chemistry, or Mathematics Minor or a Double Major
- Apply your knowledge through a teaching assistant position 





### Final Year

- 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 a year-long undergraduate research thesis with faculty member 
- Take a specialized course such as **Introduction to Medical Physics** and/or **Introduction to Medical Imaging**
- Apply your knowledge through a field work course to optimize your senior experience 

## Experience

Ways To Get Involved



- Begin the process of becoming a **LEAD Medallion Scholar** and participate in credit and volunteer activities 
- Explore co-op options and consider applying in fall of second year 
- Be *Engaged* by volunteering in a lab to help with research for professors and graduate students 
- *Discover* research opportunities as part of the **Outstanding Scholars** program 
- Join the **USci Network** to take part in collaborative and integrative science experiences
- Join a club like the **Physics Club**, **Science Society** or **Students Offering Support**
- 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

- Participate in the **UWill Discover** undergraduate research conference 
- Complete first co-op work term in summer after second year 
- Complete co-op work term I and II 
- Complete a year long co-op placement starting in summer after third year
- Be *Engaged* through service learning opportunities with **Let's Talk Science** and **Science Rendezvous** 
- Expand your skills by taking on a summer, part-time or volunteer position
- Gain valuable *Leadership* skills through roles within a club or society
- Gain a **Global Perspective of Science (GPS)** through an international exchange or by studying abroad 

- Join a professional association such as the **Canadian Association of Physicists** or **American Physical Society**
- Conduct research with faculty member 
- Become a tutor for **Students Offering Support (SOS)** 
- Become a **MySci** advisor to provide academic support and mentorship for first-year students
- Apply your knowledge for a summer research assistant position within a faculty member's lab 
- 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* 

## Career

Plan Ahead For What's Next

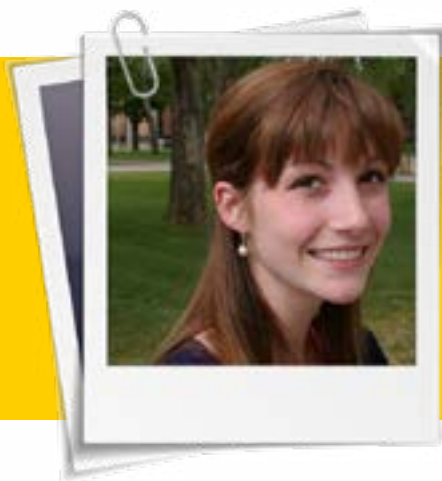


- Start planning your career by making a list of things you enjoy, your skills and areas where you excel
- Apply for co-curricular experience such as **VIP - Community Service Learning**
- Meet with a career advisor in **Career Development and Experiential Learning (CDEL)** for help developing a plan for your future years
- Consider a career assessment 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
- Analyze the requirements for graduate or professional schools
- 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 you are interested in
- Create a **LinkedIn** profile and have it critiqued by **CDEL**
- If you are considering applying to graduate or professional school, be aware of early application deadlines
- 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, including those organized by **CDEL**
- Compose a portfolio of relevant academic and work experience
- Explore professional development opportunities through **Continuing Education**

# Life After Graduation



The courses and extracurricular service learning opportunities that I had access to at the University of Windsor gave me the experience and skills I needed to work in national and international collaborations immediately upon graduation.”

*Melissa Mathers - BSc (Honours) in Physics with Minor in Computer Science and Math*

## 100% Employment Rate of Graduates

*Employment rate of graduates 2 years following degree completion (OUGS Physical Sciences, 2018)*

### Career Tracks\*

Actuary  
Astronomer  
Audiologist  
CAD technician  
Chemical physicist  
Computer programmer  
Dentist  
Doctor

Engineer  
Entrepreneur  
Financial analyst  
Geophysicist  
Hydrologist  
Lab technician  
Lawyer  
Medical physicist

Meteorologist  
Oceanographer  
Optometrist  
Professor  
Radiation safety officer  
Radiation therapist  
Research co-ordinator  
Research scientist

Robotics technician  
Science journalist  
Software developer  
Teacher  
Technical Writer  
Video game developer  
X-Ray technician

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



### Common Industries for Graduates

- **Academia**
- **Education:** Curriculum design, teaching
- **Electronics/electrical/aerospace manufacturing**
- **Energy industry/utilities**
- **Government:** Research and policy development

- **Industry:** Consultation, product development/testing
- **Meteorology/climatology**
- **Telecommunications**
- **Physical science industries**

### Career-Readiness Competencies



Critical Thinking & Problem Solving



Professionalism & Work Ethic



Teamwork & Collaboration



Communication







# Campus Resources

- Research 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 **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**
- Look into the **Ignite: Work Study** program for on-campus employment opportunities
- Get assistance developing your career plan and job search skills from **Career Development and Experiential Learning**
- Consult with the **EPICentre** if you are interested in starting your own business
- Broaden your cultural awareness through the **International Student Centre** and **Student Exchange Office**
- Find support for Indigenous learners and broaden your understanding of Indigenous culture by visiting **Turtle Island**
- Tend to your health and wellness with support from **Student Health Services** 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 **Sexual Misconduct Response and Prevention Office**
- Explore professional development opportunities through **Continuing Education**



[experience.uwindsor.ca](https://experience.uwindsor.ca)

## Student Recruitment

Phone: 519-973-7014

Toll-Free: 1-800-864-2860

Email: [info@uwindsor.ca](mailto:info@uwindsor.ca)

## Department of Physics

Phone: 519-253-3000, Ext. 2647

Email: [physics@uwindsor.ca](mailto:physics@uwindsor.ca)

## Career Development and Experiential Learning

Phone: 519-253-3000, Ext. 3895

Email: [careerservices@uwindsor.ca](mailto:careerservices@uwindsor.ca)