Skills and Knowledge of Physics Graduates

**PROGRAM HIGHLIGHTS**

**Physics** – Learn how the universe works—from the fundamental forces of nature to their effects on matter and the environment around us. This program will ready you for leadership positions in both academic and industrial research in the Canadian high-technology industry. It may be taken with or without a thesis option.

**Physics and High Technology** – This program is for you if you’re interested in applying your physics training to the high-tech needs of society or if you’re fascinated by science and technology but don’t necessarily want to pursue a career as a scientist. It may be taken with or without a thesis option.

**Medical Physics** – Learn about the application of physics’ theories and technologies to the diagnosis and treatment of diseases in the human body, particularly cancer. This will prepare you for further studies in medical physics, a career as a certified medical physicist, or medical school.

**Interdisciplinary Arts and Science** – If you’re a highly motivated student who wants knowledge and skills that will familiarize you with the humanities, social sciences and natural sciences, this elite program is for you. Design your program to match your interests and career aspirations. From here, consider a master’s program, professional school (medicine, optometry, dentistry, occupational therapy, naturopathic medicine, law, MBA, pharmacy), or teaching (with additional studies).

**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

<table>
<thead>
<tr>
<th>Degree Title / Program</th>
<th>Minimum Average</th>
<th>Admission Requirements</th>
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<tbody>
<tr>
<td>PHYSICS</td>
<td>75%</td>
<td>FRENCH (ADV. FUNC.) and PHYS. required. CALC., CHEM. strongly recommended. 70% average in all attempted Science and Math courses, excluding DATA M.</td>
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**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.

**Career Planning Guide**

Intentional career planning will help you prepare for your next step after graduation. It is a fluid, dynamic, and continuous process, meaning you can move on or return to an earlier stage at any time. You can even work through simultaneous cycles, like one for your long-term dream job and another for a summer job.
### Academics
- **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 the 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 conjunction with a Computer Science, Chemistry, or Mathematics Minor or a Double Major.

- **Final Year**
  - Meet with an academic advisor to go over graduation requirements.
  - Complete all required courses for your degree.
  - Apply to graduate through MyWindsor 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
- **First Year**
  - 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.
  - Apply for a co-curricular experience such as VIP.
  - 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.

- **Middle Years**
  - Apply your knowledge through a teaching assistant position.
  - Participate in the UWIIr Discover undergraduate research conference.
  - Apply to co-op in fall of second year.
  - Complete co-op work term I and II.
  - 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.

- **Final Year**
  - Join a professional association such as the Canadian Association of Physicists or American Physical Society.
  - Complete co-op work term III in the field of Physics.
  - 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
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### HIP: 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
- Culinarting senior experience
- Capstone courses
- Service-learning
- Learning communities
- Study abroad

**First Year**
- Create lists of things that you enjoy, areas in which you excel, and your skills.
- 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 workshop or 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 resume and cover letter.
- Analyze the requirements for graduate or professional schools.

**Middle Years**
- Research career fields and occupations with the help of a CDEL career advisor.
- Explore opportunities and meet employers through job fairs and employer networking events.
- Explore further educational opportunities by attending the Graduate and Professional Schools Fair and researching admission requirements for programs you are interested in.
- Attend CDEL’s Using Social Media to Leverage Your Career workshop.
- Create a LinkedIn profile and have it critiqued.
- If you are considering applying to graduate or professional school, be aware of early application deadlines.

**Final Year**
- Meet with CDEL to prepare application documents like a resume, cover letter, CV, or personal statement for jobs and education programs you are applying to.
- Attend an Interview Skills Workshop and Job Search Tips Workshop.
- Use InterviewStream to practice your interview skills online.
- Set up an in-person mock interview with a career advisor for professional school or job applications.
- Meet employers at the annual job fair in January.
- Compose a portfolio of relevant academic and work experience.
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 [2015]

100% Employment rate of graduates 2 years following degree completion [OUGS Physical Sciences, 2014]

100%

COMMON INDUSTRIES FOR PHYSICS 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 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 therapist

Research co-ordinator
Research scientist
Robotics technician
Science journalist
Software developer
Teacher
X-Ray technician

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

CAREER-READINESS COMPETENCIES

Critical Thinking and Problem Solving
Using strategic and creative thinking to make decisions and evaluate solutions

Teamwork and Collaboration
Working as a productive member of a group and collaborating with others to achieve set goals

Professionalism and Work Ethic
Demonstrating personal management practices and a high level of integrity and ethical behaviour

Communication
Appropriate and effective articulation of ideas and information to a range of audiences

Physics
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
- Explore mentorship opportunities through the Connecting4Success (C4S) and Bounce Back programs
- Improve study skills through the Skills to Enhance Personal Success (STEPS) program
- 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
- Apply to VIP to get involved in a community service learning experience
- 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
- Seek personal support or learn more about sexual violence education through the Sexual Misconduct Response and Prevention Office