Physics at Queen’s combines high-calibre research with an intermediate-scale learning setting, enabling attention and care towards undergraduate teaching as well as exposure to a broad range of topics and expertise. Our students will learn in an engaging environment with the opportunity to conduct interdisciplinary research in state-of-the-art laboratories, and work on projects involving international collaborators such as the experiments in dark matter and neutrinos happening below the surface of the Earth at the Sudbury Neutrino Observatory.

**REASONS to study PHYSICS AND ASTRONOMY**

1. One of Canada’s leading teaching and research institutes in Physics and Astronomy.
2. Award-winning physics educators such as 3M National Teaching Fellow James Fraser.
3. Our internship program (QUIP) offers a wide range of careers to explore and companies to learn from.
4. Brand new astroparticle physics institute named after Queen’s Nobel Prize Laureate Art McDonald.
5. 25+ summer research assistant positions offered by the department to students every summer.

**CHECK OUT OUR ALUMNI JOBS**

- **11%** of alumni work in GOVERNMENT
- **18%** of alumni work in TECHNOLOGY
- **18%** of alumni work in BUSINESS & LAW
- **31%** of alumni work in EDUCATION & RESEARCH

“For me, the community within the Physics Department was by far the best aspect of studying Physics at Queen’s. The engaging instructors, knowledgeable technologists, helpful administrative and support staff, and my collaborative peers all contributed to my learning in the most positive way.”

-Kate Fenwick, BScH ’17

**2018-19 thresholds**

- **2.7 cGPA** automatic acceptance min B- in PHYS 10#
- **N/A** pending list min pass in PHYS 10#

*Thresholds are made on a competitive basis and are updated annually. For the latest information please visit: QUartscl.com
ASTROPHYSICS SPECIALIZATION MAP

SPECIALIZATION BACHELOR OF SCIENCE (HONOURS)

1ST YEAR

GET THE COURSES YOU NEED

In first year you will have the chance to explore the foundations of Physics in biology, chemistry and math along with some electives. See the back page for specific courses to consider.

GET RELEVANT EXPERIENCE

Join teams or clubs on campus such as Queen’s Astronomy Club, Queen’s University Experimental Sustainability Team (QUEST), Queen’s Space Engineering Team (QSET), or Queen’s Solar Design Team.

GET CONNECTED WITH THE COMMUNITY

Volunteer on or off-campus with different community organizations such as Science Rendezvous or Let’s Talk Science. Consider joining an intramural sport or an athletics team. Off-campus community organizations welcome Queen’s students – see what’s out there!

GET THINKING GLOBALLY

Prepare for work or studies in a multi-cultural environment by taking QUC’s Intercultural Competency Certificate, and research possible immigration regulations.

GET READY FOR LIFE AFTER GRADUATION

Grappling with program decisions? Go to Majors Night in the Winter term to learn more about Plan options.

2ND YEAR

GET THE COURSES YOU NEED

Start going deeper into the discipline of Astrophysics, while considering a certificate such as French for Professionals. Attend Degree in the Fall term to learn more about Certificates and Internship options. Want to make sure your academics are where you want them to be? Visit SASS (Student Academic Support Services) and the Writing Centre for some help.

GET RELEVANT EXPERIENCE

Look into summer jobs by talking to the department or Career Services about work through SWEP or Work-Study.

GET CONNECTED WITH THE COMMUNITY

Get involved with the Departmental Student Council (DSC). Connect with professors at social or attend departmental public lectures.

GET THINKING GLOBALLY

Is an exchange in your future? Start thinking about where you would like to study abroad. Apply in January for a third year exchange through the International Programs Office. Physics research is often international and collaborative. Pursue summer research with faculty members to explore those global connections.

GET READY FOR LIFE AFTER GRADUATION

Explore different careers of interest by reading books in the Career Services Career Advising and Resource Area, such as Alternative Careers in Science. For more information check out Career Cruising or by finding and connecting with alumni on LinkedIn.

3RD YEAR

GET THE COURSES YOU NEED

A chance to start grouping courses in areas of interest, or to keep it more general and explore many areas of Astrophysics. Meet with an Academic Advisor to make sure you are on track and have planned out your courses for next year — for some ideas, see the back page.

GET RELEVANT EXPERIENCE

Consider applying to do a 12-16 month QUIP internship between your third and fourth year.

GET CONNECTED WITH THE COMMUNITY

Do targeted networking with alumni working in careers of interest by joining the LinkedIn group Queen’s Connects. Check out Career Services networking workshops.

GET THINKING GLOBALLY

Build your intercultural competence by getting involved with other cultures or by practicing or improving your language skills.

GET READY FOR LIFE AFTER GRADUATION

Start focusing on areas of interest. Research education requirements for careers of interest. If needed, prepare to take any required tests (like the LSAT or GMAT) and get help thinking about Grad School from Career Service.

4TH OR FINAL YEAR

GET THE COURSES YOU NEED

In fourth year you will have the chance to participate in research-based courses that can lead to Graduate School or to your future career path. Make sure to finish up all your courses for your degree and your optional certificate(s).

GET RELEVANT EXPERIENCE

Investigate requirements for full-time jobs or other opportunities related to careers of interest. Assess what experience you’re lacking and fill in gaps with volunteering, clubs, or internships — check out the Career Services skills workshop for help.

GET CONNECTED WITH THE COMMUNITY

Check out Inquiry@Queen’s to present your past summer research work.

GET THINKING GLOBALLY

The Canadian Undergraduate Physics Conference is hosted by and for undergrads.

GET READY FOR LIFE AFTER GRADUATION

International students interested in staying in Canada can speak with an International Student Advisor.

CONSIDER A 12-16 MONTH QUIP INTERNSHIP

Where will I learn?

A degree in Physics can equip you with valuable and versatile skills, such as:

- Knowledge of physics theories and mathematical models
- Proficiency in mathematics
- Facility for quantitative mathematical and computational analysis
- Experience with laboratory equipment
- Design experiments and develop and write research proposals
- Review scientific literature
- Draw conclusions from data and evaluate sources of error
- Explain technical information clearly in writing and verbal communication
- Use statistical software
- Adopt a systematic, analytical approach to problems

Where can I go?

A degree in Physics can take your career in many directions. Many students choose to continue their academic inquiry with a Master’s. Our students are equipped with a strong foundation for careers in:

- Aerospace
- Astrophysics
- Computer simulations
- Forensic science
- Geophysic
- Imaging
- Nanoscience
- Photonics
- Planetary science
- Radiology
- Remote sensing
- Robotics
- Space science
- Technology industry

Taking time to explore career options, build experience and network can help you make a smooth transition to the world of work after graduation.
## Sample Year by Year

### 1ST YEAR
- PHYS 104/6.0 or PHYS 106/6.0
- MATH 110/6.0 or MATH 111/6.0
- CHEM 112/6.0
- 6.0 units from MATH 120/6.0, MATH 121/6.0, (MATH 123/3.0 and MATH 124/3.0)
- 6.0 units of electives

### 2ND YEAR
- PHYS 206/3.0
- PHYS 212/3.0
- PHYS 213/3.0
- PHYS 216/3.0
- PHYS 239/3.0
- PHYS 242/3.0
- PHYS 250/3.0
- MATH 221/3.0 or MATH 280/3.0
- MATH 225/3.0 or MATH 231/3.0
- 3.0 units of electives

### 3RD YEAR
- PHYS 315/3.0
- PHYS 316/3.0
- PHYS 317/3.0
- PHYS 321/3.0
- PHYS 344/3.0
- PHYS 345/3.0
- PHYS 350/6.0
- PHYS 372/3.0
- 3.0 units of electives

### 4TH YEAR
- PHYS 414/3.0
- PHYS 432/3.0
- PHYS 435/3.0
- PHYS 453/3.0
- PHYS 590/6.0
- 6.0 units from PHYS at the 400 level or above
- 6.0 units of electives

*Please note if you were admitted to the Plan prior to May 2018 your requirements are slightly different.*

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Note that degree requirements are revised regularly. The most current requirements, including course lists and options, are found in the Academic Calendar at: [QUartsci.com/academic-calendar](http://QUartsci.com/academic-calendar)