**Application FAQs**

**What do I need to know to APPLY?**

**ACADEMIC REQUIREMENTS**
- Master's degree in Science or Applied Science.
- Grade requirements: minimum B+ standing.

**ADDITIONAL REQUIREMENTS**
- Two official transcripts for all post-secondary studies.
- At least 2 letters of reference.
- Curriculum vitae.
- If English is not a native language, prospective students must meet the English language proficiency requirements in writing, speaking, reading, and listening. The School of Graduate Studies requires the following minimum scores: TOEFL (paper based): 550, (2) TOEFL iBT: Writing 24/30; Listening 22/30; Reading 20/30; Speaking 20/30; (3) IELTS: 7.0 (academic module overall band score), or (4) PTE Academic: 65.

**KEY DATES & DEADLINES**
- Application due: February 15th.
- Notification of acceptance: 4 weeks after the full application has been received.

Before you start your application, please review the [graduate studies application process](#).

**What about FUNDING?**

The minimum funding guarantee for Physics PhD students is $27,300 per year, throughout years 1-4. This basic level funding consists of graduate awards, external scholarships, teaching assistantships, and support from your supervisor.

We encourage all students to apply for external funding from OGS, NSERC and other sources. Queen’s will automatically issue a one time $10,000 award to Doctoral students who have won federal government tri-council awards. We encourage all students to apply for external funding from OGS, NSERC and other sources.

**Why GRADUATE STUDIES IN PHYSICS, ENGINEERING PHYSICS & ASTRONOMY?**

The PhD in Physics provides you with training in theory, computation, statistical modelling, and experimental methods as you pursue problems in fundamental and applied research. Physicists design mathematical models to describe complex phenomena and test these models by making observations, conducting experiments, or running numerical simulations. The skills obtained are highly sought after and transferrable to a wide range of fields. The degree leads to careers in academia and government-funded research centres as well as the private sector fields of finance, medicine, technology, and data analytics, to name just a few.

**Why QUEEN’S?**

Queen’s has one of the most active and dynamic physics departments in Canada. The Department is home to the McDonald Institute, a national research centre in particle astrophysics. Named after emeritus Queen’s professor and 2015 Nobel laureate Art McDonald, the Institute is closely linked to activities at SNOLAB where experiments search for dark matter and probe fundamental properties of neutrinos. Closely related is the Astrophysics group whose members at Queen’s and the nearby Royal Military College study dark matter through theory, simulation, and observations at some of the world’s largest observatories. Research within the applied and experimental physics group seeks to bring new physics understanding to important problems for society, including lighting technologies, solar energy, laser manufacturing, and non-destructive testing while the Condensed Matter group focuses on condensed matter and experimental methods as you pursue problems in fundamental and applied research. The PhD in Physics provides you with training in theory, computation, statistical modelling, and experimental methods as you pursue problems in fundamental and applied research. Physicists design mathematical models to describe complex phenomena and test these models by making observations, conducting experiments, or running numerical simulations. The skills obtained are highly sought after and transferrable to a wide range of fields. The degree leads to careers in academia and government-funded research centres as well as the private sector fields of finance, medicine, technology, and data analytics, to name just a few.

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**Program STRUCTURE**

**PhD (4 years):** Course work, research project, thesis & defense, seminar series.

**RESEARCH Areas**
- Condensed Matter Physics & Optics
- Engineering & Applied Physics
- Astrophysics & Astronomy
- Particle Physics & Particle Astrophysics

We encourage you to identify an area of research interest and contact a potential supervisor before applying.

**Visit the Department of Physics, Engineering Physics & Astronomy website to read faculty profiles and learn more about faculty members’ research areas. When you find a faculty member with similar research interests to yours, contact him/her and tell them about your interest in graduate work and related experience.**
ACHIEVE YOUR ACADEMIC GOALS

- Meet early with your supervisor to set expectations and discuss roles, responsibilities, program requirements, resources, research/occupational goals, timelines, and any required accommodation plans.
- Look to Student Academic Success Services for a variety of supports.
- Attend and participate in graduate seminars and colloquia hosted by the department.
- Write and defend your thesis proposal.
- Embark on your substantive research.
- Set up regular meetings with your supervisor to discuss progress and obstacles to timely completion.
- Find your way through the academic process with the help of Expanding Horizons.
- Seek experiential/professional development opportunities.
- Present your work at graduate conferences, through professional associations, or topic conferences.
- Expand your research audience through social media such as Twitter or a blog.
- Apply for the Graduate Dean’s Travel Grant for Doctoral Field Research.

MAXIMIZE RESEARCH IMPACT

- Think about audiences for your research.
- Complete CORE online module on research ethics if doing research with living people or sensitive topics.
- Apply to NSERC, CGS, and other funding.
- Attend conferences in your field, such as the Canadian Association of Physics Annual Congress.
- Consider participating in the 3 Minute Thesis (3MT) competition.
- Contact the Queen’s Media Centre for guidance on speaking to news outlets about your work. List yourself on the Arts and Science University.
- Find opportunities for extra training through CTL, Expanding Horizons, Mitacs, or other sources to boost your skills. Investigate internships from Mitacs and other sources.
- Prepare for work or studies in a multi-cultural environment by taking the Intercultural Awareness Training Certificate hosted by QUIC and Four Directions Indigenous Student Centre.
- Practice articulating the skills you have been developing in settings outside the university, such as casual conversation, networking, and interviews. Get help from a Career Services workshop.
- Consider joining professional societies like the Canadian Association of Physicists.
- Join groups on LinkedIn reflecting specific careers or topics of interest.

BUILD SKILLS AND EXPERIENCE

- Serve on departmental, faculty or university committees. Talk to the Society for Graduate Students for tips on getting involved.
- Consider positions in student services, the SGPS, or media outlets like the Queen’s Journal, CFRC, and the SGSS Blog. Look in the AMS Clubs Directory.
- Use a Teaching Assistant or Research Assistant position to develop your skills and experience.
- Hone skills for non-academic employment by continuing involvement on committees and in the community.
- Start keeping an ePortfolio of your skills, experiences and competencies.
- For help with teaching, get support from the Centre for Teaching and Learning. Enroll in SGSPG or the PUTL certificate for more professional development in teaching and learning.
- Do some targeted networking with people working in careers of interest, through QueensConnects on LinkedIn, the Queen’s Alumni Association professional associations, and at conferences. Get help from a Career Services workshop.
- Consider joining professional societies like the Canadian Association of Physicists.
- Join groups on LinkedIn reflecting specific careers or topics of interest.

ENGAGE WITH YOUR COMMUNITY

- Consider volunteering with different community organizations, such as Martha’s Table, or Loving Spoonful.
- Take advantage of the facilities linked to the department, including the Cancer Centre of Southeastern Ontario, the Sudbury Neutrino Observatory (SNOLAB), the Kingston Nano-Fabrication Laboratory (KNFL); and more.
- Participate in your graduate and professional community through activities such as graduate student outreach programs, organizing conferences, and research groups.
- Participate in hiring committees and attend job talks. Research academic careers of interest. Craft your CV and job application materials.
- Start focusing on non-academic areas of interest. Research organizations of interest and start putting together your resume for potential positions of interest.
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- Build connections with faculty outside of your department. Pursue interviews for faculty positions and apply for post-doc fellowships and positions.
- Apply to jobs or make plans for other adventures. Get help from Career Services with job searching, resumes, or interviews.

WHERE CAN I GO?

- A PhD degree in Physics, Engineering Physics & Astronomy can take you to career in many directions. Our PhD students are equipped with a strong foundation for careers in:
- Academia and research
- Consulting
- Medical technologies: radiation physics, x-ray physics
- Consulting
- Renewable energy
- Technology sector

Talent taking to explore career options, build experience, and network can help you make smooth transition to the world of work after graduation.

WHAT WILL I LEARN?

- Knowledge and technical skills
- Effective communication skills in multiple forms for diverse audiences
- Information management, prioritize, organize and synthesize large amounts of information
- Time management: Meet deadlines and manage responsibilities despite competing demands
- Project management: develop ideas, gather information, analyze, critically appraise findings, draw and act on conclusions
- Creativity and innovation
- Perseverance
- Independence and experience as a collaborative worker
- Awareness, an understanding of sound ethical practices, social responsibility, responsible research and cultural sensitivity
- Professionalism in all aspects of work, research, and interactions
- Leadership initiative and vision leading people and discussion

LAUNCH YOUR CAREER

- Finding career fit starts with knowing yourself. Take a Career Services workshop or meet with a career counselor for help. Check out books like So What Are You Going to Do With That? or Planning a Scientific Career in Industry from the Career Resource Area for advice on various career options.
- Start reading publications like University Affairs and the Chronicle of Higher Education. Browse non-academic labour market websites.
- Stay on the lookout for special events like School of Graduate Studies Career Week to explore your career options.
- Start building your teaching portfolio including student evaluations, and seeking mentorship.
- Explore different careers of interest by reading alumni profiles on the SGSS website, and using QueensConnects on LinkedIn to connect with Queen’s alumni, or find alumni in various careers through Ask an Alumni. For more information check out Career Cruising.
- Investigate requirements for professional positions or other opportunities related to careers of interest.
- Participate in hiring committees and attend job talks. Research academic careers of interest. Craft your CV and job application materials.
- Start focusing on non-academic areas of interest. Research organizations of interest and start putting together your resume for potential positions of interest.
- Build connections with faculty outside of your department. Pursue interviews for faculty positions and apply for post-doc fellowships and positions.
- Apply to jobs or make plans for other adventures. Get help from Career Services with job searching, resumes, or interviews.
- If considering jobs abroad, research possible immigration regulations. If you are an international student interested in staying in Canada, consider speaking with an International Student Advisor.

* Visit careers.queensu.ca/gradmaps for the online version with links!© Career Services, Queen’s University, 2019 - 2020

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