

Physics and Astronomy

Department Overview

The [Physics and Astronomy Department](#) offers an [Associate of Science in Physics](#) as well as astronomy courses. The department aims to nurture students' creativity, critical thinking, physical intuition and computational competence in a supportive and challenging environment. Students learn physics and astronomy through hands-on experiences, conversations, symbolic calculations and lectures. Several department members are amateur musicians and demonstrate concepts from the physics of sound in class. Members of the department come from research backgrounds in biophysics, high-energy particle physics, astrophysics and theoretical physics, and have held positions at the TRIUMF accelerator, the Max Planck Institute for Nuclear Physics, Xerox Research, and several high-tech companies. Some department members are involved in educational research focused on improving student learning of physics and astronomy. Others are active in the BC Association of Physics Teachers. Department members have brought physics to elementary school classrooms and performed stage shows at Science World. Langara's Physics and Astronomy Department is one of the few college physics departments in BC to have both first and second-year physics courses.

Self-Study

Physics and Astronomy launched its program review in academic year 2019/20 with a Self-Study. Bradley Hughes, the Department Chair, was the primary Self-Study writer. Additional support was provided by:

- Nora Franzova (Division Chair, Mathematics and Science)
- Gerda Krause (Dean, Faculty of Science)
- Sunita Wiebe (Director, Office of Academic Quality Assurance)
- Institutional Research analysts

Data sources for the Self-Study included:

- Institutional Research-compiled student administrative data (*e.g.*, headcounts, retention, satisfaction)
- Student survey
- Alumni survey
- Faculty survey

The Self-Study was completed in June 2020.

External Review

Physics and Astronomy's External Review took place on July 8, 2020. The External Review Team consisted of:

- Andy Sellwood, PhD, Centre for Teaching, Learning and Research, VCC (External Review Chair)
- Kevin Dunphy, PhD, Physics, BCIT
- Patricia Aroca-Ouellette, PhD, Chemistry, Langara

Action Plan Goals

In response to the Self-Study and External Review, Physics and Astronomy created an Action Plan with these goals:

- Goal 1: Increase Equity, Diversity and Inclusion in our department.

- Goal 2: Fit our courses together.
- Goal 3: Fit our courses into the College.
- Goal 4: Fit our program into the post-secondary system.

Examples of Post-Review Successes

Course learning outcomes are being reviewed, updated and approved. The department is part of a research project with institutions across North America on the solar eclipse in 2024. The department has increased tutoring and social events to promote student engagement.