

University of Toronto Quality Assurance Process (UTQAP)

Cyclical Review: Final Assessment Report & Implementation Plan

Program(s):	Physics, B.Sc., Hons.: Specialist, Major and Minor Biological Physics, B.Sc., Hons.: Specialist Philosophy and Physics, B.Sc., Hons.: Specialist Physics “Life and Environmental”: Minor Physics, M.Sc., Ph.D.
Division/Unit:	Department of Physics, Faculty of Arts & Science
Commissioning Officer:	Dean, Faculty of Arts & Science
Reviewers (Name, Affiliation):	<ol style="list-style-type: none"> 1. Dr. John Berlinsky, Director of Academic Programs, Perimeter Institute for Theoretical Physics; Professor of Physics & Astronomy (emeritus), McMaster University 2. Dr. James C. McWilliams, Louis B. Slichter Professor of Earth Sciences, UCLA Institute of Geophysics and Planetary Physics and Department of Atmospheric and Oceanic Sciences, UCLA 3. Dr. J. Michael Roney, Professor of Physics and Astronomy, Department of Physics and Astronomy, University of Victoria
Date of review visit:	February 25 – 26, 2013
Date reported to AP&P:	April 1, 2014

1 Outcome

The Committee on Academic Policy and Programs (AP&P) concluded that the Decanal response adequately addressed the review recommendations.

2 Significant Program Strengths

- Outstanding and unique graduate program
- Notable and diverse research programs
- Innovative first-year physics course for life sciences students

- High morale of faculty, students, and staff
- Strong relationships with other units both within and external to the University

3 Opportunities for Program Improvement and Enhancement

The reviewers recommended that the following be considered:

- Enhancing the undergraduate curricular delivery
- Remaining sensitive to issues associated with the tri-campus graduate program
- Adding graduate mini-courses on technologies that cross sub-disciplines, such as common instrumentation techniques
- Examining undergraduate and doctoral program time-to-completion
- Admitting and providing support to international graduate students
- Strengthening the faculty complement
- Reviewing administrative and research support staffing

4 Implementation Plan

The Dean undertook in consultation with the Department to support the following changes:

- Immediate Term (6 months)
 - Enhancing the undergraduate curricular delivery
 - The Department will continue to work to enhance the student experience in large lecture section courses.
 - The Department will implement weekly practicals for first-year physics specialists.
 - The Chair will continue to encourage faculty and student participation in senior research projects for physics specialists.
 - Remaining sensitive to issues associated with the tri-campus graduate program
 - The Department will enable “smart-lecture theatre” capability on the St. George campus that will allow courses to be delivered/attended remotely by University of Toronto Mississauga (UTM) and University of Toronto Scarborough (UTSC) professors and students.
 - Adding graduate mini-courses on technologies that cross sub-disciplines
 - The Department will introduce new courses in parallel computing and additional courses in electronics.
 - Examining undergraduate and doctoral program time-to-completion
 - The Department will offer increased summer sections of courses, aiding students in the timely completion of prerequisite courses.
 - The Physics Graduate Office will track doctoral supervisory committee meetings more carefully and take a more proactive role in following-up with supervisors.
 - Admitting and providing support to international graduate students
 - The Department will work with the Advancement Office to raise funds in support of international students.
 - Strengthening the faculty complement
 - The Department will seek to fill positions in key fields that have been identified.

- Reviewing administrative and research support staffing
 - The Department will reorganize its physics stores with a view to increased efficiency.
- Medium Term (1-2 years)
 - Strengthening the undergraduate curricular delivery
 - The Faculty of Arts and Science will conduct a comprehensive review of its large course learning environment in 2014-15, considering pedagogical differences among the disciplines.
 - The Department will work with the Dean's Office to create permanent space for lab/tutorials for first-year physics specialists.
 - The Department will explore the feasibility of graduate student involvement in undergraduate research.
 - Remaining sensitive to issues associated with the tri-campus graduate program
 - The Physics Graduate Associate Chair will work with graduate students to increase communications and exchange of information.
 - Adding graduate mini-courses on technologies that cross sub-disciplines
 - The Department will consult with graduate students and faculty about possible course offerings.
 - Examining undergraduate and doctoral program time-to-completion
 - The Department will monitor undergraduates' progress through their degrees.
 - The Department will look at current best practices in other science departments.
 - Reviewing administrative and research support staffing
 - The Department will review its administrative and research support staffing, with Faculty assistance.

The Dean's Office will follow up annually with the unit to assess progress.

5 Executive Summary

The reviewers identified the Department's key strengths as being an outstanding graduate program; notable research programs; an innovative first-year physics course for life sciences students; the high morale of faculty, students, and staff; and strong relationships with units internal and external to the University. The reviewers recommended that the following issues be addressed: enhancing the undergraduate curricular delivery; remaining sensitive to tri-campus graduate program issues; examining undergraduate and doctoral program time-to-completion; admitting and providing support to international graduate students; and reviewing the faculty complement and administrative and research support staffing. In response, the Department will work to focus the student experience in large lecture section courses and will enhance opportunities for physics specialists. The Department will use technology to facilitate tri-campus participation in graduate courses. The Department will monitor undergraduates' progress through their degrees and doctoral supervisory committee meetings to address time-to-completion concerns. The Department will seek to strengthen its faculty complement, when possible, and will review its administrative and support staffing. The Committee on Academic Policy and Programs concluded that the Decanal response adequately addressed the review recommendations.