



University of Toronto Quality Assurance Process (UTQAP) Cyclical Review: Final Assessment Report and Implementation Plan

Program(s) Reviewed:	Aerospace Science and Engineering, MAsc, MEng, PhD
Division/Unit Reviewed:	University of Toronto Institute for Aerospace Studies
Commissioning Officer:	Dean, Faculty of Applied Science and Engineering
Reviewers (Name, Affiliation):	<ol style="list-style-type: none">1. Prof. Jonathan P. How, PhD, Richard Cockburn Maclaurin Professor of Aeronautics and Astronautics, Massachusetts Institute of Technology2. Prof. Sanjiva K. Lele, PhD, Department of Aeronautics and Astronautics, Department of Mechanical Engineering, Stanford University3. Prof. Metin Yaras, PhD, Chair and Professor, Department of Mechanical and Aerospace Engineering, Carleton University4. Roxana Zangor, PhD, Manager, Product Safety and Reliability, Pratt & Whitney Canada
Date of review visit:	September 30 – October 1, 2015
Date reported to AP&P:	March 30, 2016

Unless otherwise noted, all bulleted comments apply to all programs reviewed.

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

- Excellent institute, with outstanding students and professors and strong leadership and administrative support staff
- Programs are effective and well-balanced

- Significant number of recent hires and expansion of the faculty complement
- Excellent record of publications; major increases since the last review
- Significant research strengths in multiple areas
- Extensive industry involvement

3 Opportunities for Program Enhancement

The reviewers recommended that the following be considered:

- Enriching the MEng program to better reflect graduates' career objectives
- Supporting consistent admission and qualifying exam processes for the PhD program
- Improving recruitment of graduate students, including women and international students
- Addressing PhD students' time-to-completion
- Finding the balance between fundamental and high-risk research versus industry-driven research
- Upgrading and staffing UTIAS's unique facilities to support ongoing research activities

4 Implementation Plan

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

- Immediate Term (6 months)
 - Supporting consistent admission and qualifying exam processes for the PhD program
 - The Institute will examine best practices in peer departments at the University of Toronto and in Canada and the U.S. Based on the outcome of this examination, UTIAS will evaluate how best to proceed.
 - Improving recruitment of graduate students, including women and international students
 - The Institute will provide funds to ensure that all well-qualified female applicants receive consideration of an offer of admission.
 - The Institute will increase its participation in organizations that promote women in science and engineering.
 - Addressing PhD students' time-to-completion
 - The Institute will request that students turn in a draft thesis after four years rather than the current 4.5 years, and require more frequent one-page reports that summarize progress relative to the planned schedule.
 - Upgrading and staffing UTIAS's unique facilities to support ongoing research activities
 - The Institute has hired an engineering technologist with duties primarily related to the experimental facilities associated with its undergraduate courses. This person will also provide support for research facilities.
- Medium Term (1-2 years)
 - Improving recruitment of graduate students, including women and international students
 - The Institute will enhance its website and social media presence to increase visibility.
 - Enriching the MEng program to better reflect graduates' career objectives

- The Institute will look for suitable and willing instructors among its local industry partners, with a view to having a first course in place in 1-2 years and a number of such courses in place in 3-5 years.
- Upgrading and staffing UTIAS's unique facilities to support ongoing research activities
 - The Institute's flight simulator will undergo a major upgrade in 2016.
- Longer Term (3-5 years)
 - Improving recruitment of graduate students, including women and international students
 - The Institute will continue to emphasize team grants, such as NSERC CREATE grants, and will increasingly look to international companies and agencies for research support.
 - Finding the balance between fundamental and high-risk research versus industry-driven research
 - The Institute will increasingly turn to international organizations willing to support fundamental and high-risk research and will take advantage of all domestic opportunities for fundamental research.

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

5 Executive Summary

The reviewers identified the programs' strengths as their outstanding students and professors, and strong leadership and administrative support staff; the significant number of recent hires and expansion of the faculty complement; the excellent record of publications, representing major increases since the last review; the significant research strengths in multiple areas; and extensive industry involvement. The reviewers recommended that the following issues be addressed: enriching the MEng program to better reflect graduates' career objectives; supporting consistent admission and qualifying exam processes for the PhD program; improving recruitment of graduate students, including women and international students; addressing PhD students' time-to-completion; finding the balance between fundamental and high-risk research versus industry-driven research; and upgrading and staffing UTIAS's unique facilities to support ongoing research activities. The Institute will examine best practices for admissions and qualifying exams for PhD programs at peer departments at the University of Toronto and in Canada and the U.S. Based on the outcome of this examination, UTIAS will evaluate how best to proceed. The Institute will enhance its website and social media presence to increase visibility; provide funds to ensure that all well-qualified female applicants receive offers of admission; and increase its participation in organizations that promote women in science and engineering. The Institute will increasingly turn to international organizations willing to support fundamental and high-risk research and will take advantage of all domestic opportunities for fundamental research. The Institute will look for suitable and willing instructors among its local industry partners to enrich the MEng program. The Committee on Academic Policy and Programs (AP&P) concluded that the Decanal response adequately addressed the review recommendations.