



## **FINAL ASSESSMENT REPORT ON THE 2010-11 PROGRAM REVIEWS**

Under UOIT's Quality Assurance Framework, all degree programs are subject to a comprehensive review every eight years to ensure that they continue to meet provincial quality assurance requirements and to support their ongoing rigour and coherence. Program reviews involve several stages, including:

1. A comprehensive and analytical self-study brief developed by the members of the program under review
2. A site visit by academic experts who are external to and at arm's length from the program who prepare a report and recommendations on ways that it may be improved based on a review of the program's self-study and supporting material, and a two day site visit involving discussions with faculty, staff and students and a tour of the facilities
3. Development of a plan for improvement by the program and proposed timelines for implementation.

On the completion of the program, the self-study brief together with the reviewers' report and the assessment team's response are reviewed by the appropriate standing committee of Academic Council and its outcomes are subsequently reported to Academic Council and ultimately the Board of Governors.

In 2010-11, program reviews were conducted for the following degree programs:

- Bachelor of Education
- Bachelor of Science in Applied and Industrial Mathematics
- Bachelor of Science in Forensic Science

This is the first program review for all three programs and the internal assessment teams are to be commended for undertaking this assignment in addition to an already challenging workload and within very tight timelines. The following pages provide a summary of the outcomes and action plans resulting from the reviews, identifying the strengths of the programs as well as the opportunities for program improvement and enhancement. A report from each program outlining the progress that has been made in implementing the recommendations will also be put forward in eighteen months' time.

Looking forward to 2011-12, the following programs will be subject to review under the Quality Assurance Framework:

- Bachelor of Science in Physical Science & Bachelor of Science (General)
- Bachelor of Engineering in Automotive Engineering
- Bachelor of Engineering in Electrical Engineering
- Bachelor of Engineering in Software Engineering

## I. BACHELOR OF EDUCATION

Dean: Jim Greenlaw

Internal Review Team Chair: Lorayne Robertson

External Reviewers: Pat Rogers, University of Windsor  
Samson Nashon, University of British Columbia

Site Visit: March 1-2, 2011

The program review for the Bachelor of Education encompassed the Intermediate/Senior (I/S) Consecutive program, the Intermediate/Senior (I/S) Concurrent program and the Primary/Junior (P/J) Consecutive program. In addition to undertaking the program review in 2010-11, the Bachelor of Education program also fulfilled accreditation requirements established by the Ontario College of Teachers (OCT). The accreditation is for seven years.

Overall, the external reviewers were impressed with the programs, commenting that “the focus on technology makes the UOIT teacher education program a leader in the province of Ontario, in Canada and internationally.” As well as one that is preparing teachers of the 21<sup>st</sup> century. While the reviewers note that the Faculty is relatively young, having only been established within the last decade, the faculty cvs are rich in external funding, refereed publications, conference presentations and professional engagement thus ensuring the Faculty’s ability to contribute to the highest quality research.

Likewise, the reviewers were impressed by the high quality of teacher candidates who are admitted into the program following a very rigorous vetting process. The reviewers were very satisfied with the alignment of the curriculum with UOIT’s quality assurance criteria, the Ontario curriculum expectations and the OCT Standards of Practice. They were also impressed with the physical resources and location of the program in downtown Oshawa.

Due to the challenge of provincial cuts to spaces in faculties and schools of education in Ontario, the main recommendations of the reviewers revolved around growing and nurturing graduate programs and continuing education. To achieve this, they focused on further strengthening the research culture through increased funding for conference travel and seed funding for research projects as well as building more capacity in future to grow the graduate program, which the Faculty hopes to be in a position to put forward by 2013.

The reviewers also made a number of suggestions for improving the program and examining options for the future development, which have been taken under advisement by the Faculty. These suggestions include: finding new ways to maximize the use of technology in the administration of the practicum experience, moving toward greater use of mobile technologies, highlighting more explicitly the Faculty’s commitment to social justice and diversity in the curriculum and admissions, and revising and consolidating a number of foundational and elective courses.

A timeline of proposed actions to address the suggestions in the external reviewers report is outlined below:

Action Required	Timeline
Extending the Faculty’s leadership in technology driven curricula	July 2012

Explore possible funding options for seeding new research projects among more experienced faculty	July 2012
Maximize use of technology in practicum supervision	March 2012
Build capacity to extend the graduate program	September 2013
Examine admissions strategies and curricula	March 2012
Move toward greater use of mobile technologies	July 2012
Revisit Faculty's vision and mission statements	May 2012

## II. BACHELOR OF SCIENCE IN APPLIED AND INDUSTRIAL MATHEMATICS

**Dean: William Smith**

**Internal Review Team Chair: Dhavide Aruliah**

**External Reviewers:** **Sivabal Sivaloganathan, University of Waterloo**  
**David Jeffrey, University of Western Ontario**

**Site Visit: December 6-7, 2010**

The Bachelor of Science in Applied and Industrial Mathematics (AIM) was designed with a specific focus on developing knowledge of mathematics and its relevance in modern applications. This focus distinguishes UOIT's program from most mathematics programs across Canada that give more weight to pure mathematics courses in their curricula.

Generally, the external reviewers were impressed by the unique nature of the program in developing expertise in modeling problems that arise in industry, medicine and other application areas, as well as the technological emphasis of the content and delivery of the program, describing it as "unmatched at rival institutions." They were also impressed by the "pedagogically sound decisions that have been made" as well as the active engagement in knowledge creation experienced by students in the program. They were note that the first and second year of the program map provides students with a solid science foundation, regardless of the program in which they are in. The external reviewers were also impressed with the calibre of the faculty teaching the students, remarking that "clearly those charged with teaching undergraduates at UOIT are excellent teachers, as we witnessed while sitting in on two undergraduate lectures."

One of the unique attributes of the AIM program is that many students who complete it do so through the Education BEd/BSc Concurrent program that grants students two bachelor degrees over five years. During the course of their first year in the core Science program, BEd/BSc students decide on their primary and secondary teachable subjects, which in turn determines their Science major, making it difficult to accurately track applicants into the program. This unique attribute also poses a challenge in the structure and teaching methods employed in the program as there are students who approach the subject matter from the perspective of preparing to teach at the high school level, and there are other students who are motivated by higher-level mathematical thinking and pursuing postgraduate studies. Indeed, in the short history of the program there have been graduates who have gone on to pursue graduate degrees at prestigious universities. Despite the challenges, the external reviewers commented

that the program should continue to admit students with various backgrounds and motivations into the program.

To address this challenge, the reviewers recommended that the lines of communication between the AIM program and the Bed Concurrent program be increased to assist in building quality into the programs for all students. While the Faculties agree that academic rigour is important for both groups, achieving this given the varied backgrounds of students will require a more robust plan. The external reviewers suggest that one way to bridge this gap is to have review modules available for students who require them. The Faculty will examine further streamlining the sharing of course material as well as further integrating the rich resources available through NOOL and the Academic Success.

The external reviewers also suggested that entrance interviews be part of the application process which have been taken under advisement and will be brought forward as curricular changes over the next few years.

A timeline of proposed actions to address the suggestions in the external reviewers report is outlined below:

<b>Action Required</b>	<b>Timeline</b>
Formalize AIM program Steering Committee	July 2011
Revise AIM courses & program map	September 2011
Plan AIM student orientation for 2012	December 2011
Examine admissions & recruitment strategies	March 2012
Stream-line sharing of course materials	September 2012
Increase core faculty in lower-level courses	December 2012
Plan AIM student orientation for 2013	December 2012

### **III. BACHELOR OF SCIENCE IN FORENSIC SCIENCE**

**Dean: William Smith**

**Internal Review Team Chair: Shari Forbes**

**External Reviewers: Doug Strongman, Saint Mary's University  
James Watterson, Laurentian University**

**Site Visit: December 8-9, 2010**

The Bachelor of Science in Forensic Science program, which first began accepting students in 2005, was developed through input from highly-qualified academic consultants from the United Kingdom and the US, and from forensic science practitioners in Ontario. The program is distinguished by a strong scientific foundation in biology and chemistry, with allied courses related to forensic aspects of identification, toxicology, psychology and law. The curriculum has been designed to develop key knowledge, skills and practical training that would prepare graduates for a range of employment opportunities outside

forensic science, including research, management or teaching in other areas of science in both the public and private sectors.

The external reviewers were generally impressed with the Forensic Science, recognizing the strong alignment of the program to UOIT's mission and mandate. In addition, they were impressed by the skills of the faculty and their strong relationships with external agencies, and the concomitant benefit this has for students in the program.

The external reviewers also identified some challenges within the program centering on issues relating to resources, space and communication. In response, the assessment team will work with the Dean of Science to produce a strategic plan for the program and explore options to provide for a more coordinated and systematic delivery of program related information within the program

The external reviewers also suggested that the program consider applying for accreditation, and since the time of the report, the program has submitted an application for accreditation to the Forensic Science Education Programs Accreditation Commission (FEPAC). A site visit by the accreditation body will be completed in September/October 2011 and the results of the accreditation application will be known in January 2012.

Some "minor tweaks" to the curriculum were also suggested by the reviewers to make the best use of the resources at hand, and these will be brought forward for review and approval in the coming months.

A timeline of proposed actions to address the suggestions in the external reviewers report is included below.

<b>Action Required</b>	<b>Timeline</b>
Submit FEPAC Accreditation application	March 1, 2011
Address Adjunct Faculty website profiles, office space, and computer allocation requirements	May-August, 2011
Prepare a strategic plan for the forensic science program with regard to faculty and student growth	August, 2011
Initiate regular meetings of faculty members, support staff, and teaching assistants to improve communication	September, 2011 (ongoing)
Revise program map to introduce new courses and change psychology courses to electives – requires consultation with UOIT Forensic Science Advisory Committee	September, 2011-May, 2012
Obtain approval to hire a permanent, full-time laboratory technician	April 1, 2012
Obtain approval to advertise core faculty appointment in forensic science to start July 1, 2013	July 1, 2012