

# Bachelor of Technology



## C2U Engineering Success Project

Alan Murray, Executive Director  
Lindsay Bolan, Business Manager

# C2U Success Project



- October 23, 2013
- Over 100 attendees from 15 colleges & 12 universities
- Funded by a Credit Transfer Institutional Grant

# Early B.Tech. Program History

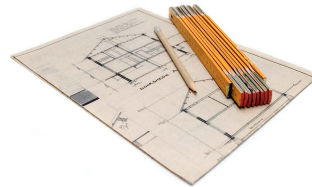


- Established in 1997
- Block transfer program for Mechanical Engineering Technology Mohawk grads to Manufacturing Engineering Technology B.Tech. degree
- Based at Mohawk College
- 17 required courses
- Students with equivalent backgrounds from other institutions considered on case by case basis
- Courses offered year round (3 terms per year)
- Held in evening (M-F) and on Saturdays during the day to accommodate the working professional

# Program Expansion



**Manufacturing  
Engineering  
Technology  
(1997)**



**Civil Engineering  
Infrastructure  
Technology  
(2006)**



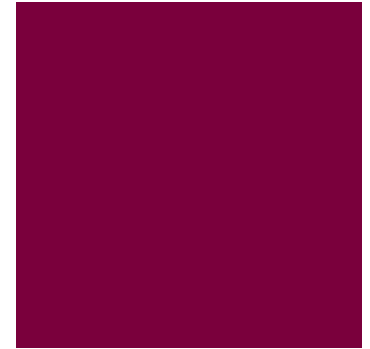
**Computing and  
Information  
Technology  
(2006)**



**Energy  
Engineering  
Technologies  
(2008)**

# Program Expansion (cont'd)

- Degree requirements changed from 17 to 24 courses (17 technical + 7 management)
- Mandatory 8 month co-op
- Moved from bilateral partnership to multilateral articulation agreements (2006 – 2011)
- 2011 – Present, no longer working with articulation agreements
- Began hosting classes at McMaster and in 2009, moved to the brand new Engineering Technology Building



# Program Expansion (cont'd)

- In 2008, a combined degree/diploma program (direct entry from high school) was also created. This 4.5 year program includes streams in:
  - Automotive and Vehicle Technology
  - Biotechnology
  - Process Automation Technology
- Students are based at McMaster, but often attend Mohawk for labs during years 2 - 4
- Now consistently at capacity for first year intake (240)
- This day time, full time program is the fastest growing program at McMaster!
- Graduate with 4 year degree + 3 year advanced diploma + 12 months of work experience



# Current Enrolment (Fall 2013)



Combined  
Degree/Diploma Program

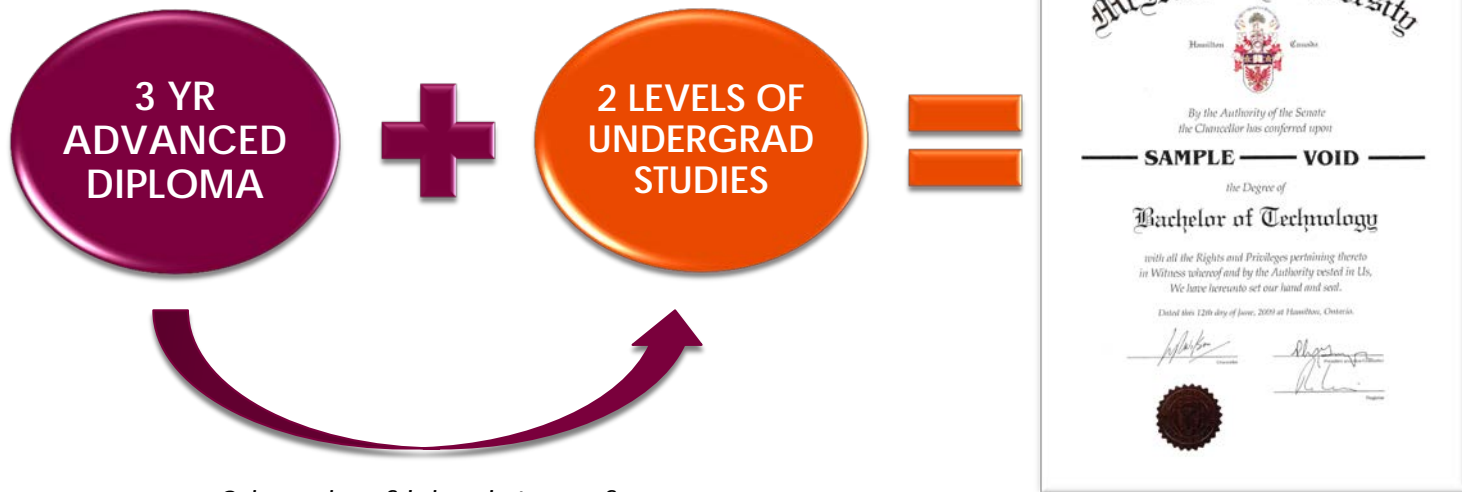
750

Degree Completion  
Program

450



# Degree Completion Program Model



*2 levels of block transfer automatically awarded. Students begin in level 3 of the program.*



# Sending Programs (>125 pathways in ON)

## ■ Civil

- Architectural Engineering Technology
- Civil Engineering Technology
- Construction Engineering Technology

## ■ Energy

- Electrical Engineering Technology
- Electro-Mechanical Engineering Technology
- Electronics Engineering Technology
- Energy Systems Technology
- Mechanical Engineering Technology

## ■ Computing

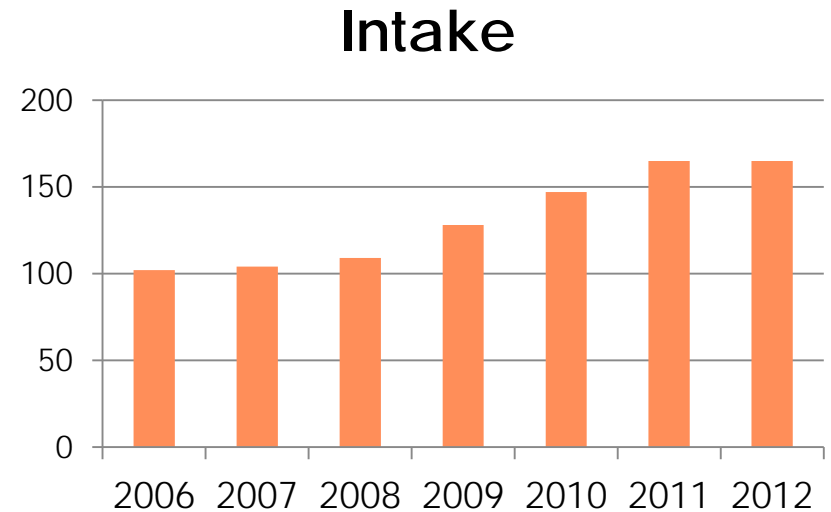
- Computer Systems Technology
- Computer Engineering Technology
- Computer Programmer/Analyst
- Electrical Engineering Technology (*new*)
- Electronics Engineering Technology (*new*)

## ■ Manufacturing

- Chemical Engineering Technology (*new*)
- Electro-Mechanical Engineering Technology
- Manufacturing Engineering Technology
- Mechanical Engineering Technology

# Degree Completion Program Growth

- 62% rise in intake from 2006 to 2012
- September 2013 was our highest ever intake in a single term (95)
  - 22% higher than previous Fall

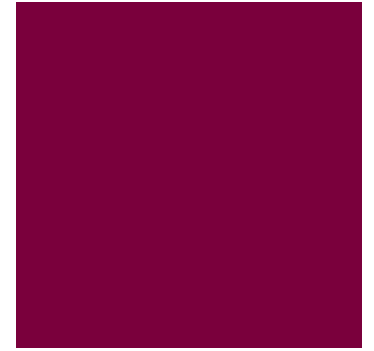


*Note: Each year includes three intakes (Fall, Winter, Spring)*

# Where do they come from?

	Civil	Computing	Energy	Manufacturing
1	Mohawk (34%)	Mohawk (56%)	Humber (30%)	Mohawk (20%)
2	George Brown (13%)	Sheridan (15%)	Sheridan (17%)	Sheridan (18%)
3	Seneca (12%)	George Brown (12%)	Mohawk (16%)	Georgian (15%)
4	Conestoga (10%)	Humber (3%)	Conestoga (7%)	Conestoga (14%)
5	Humber (9%)	Seneca (2.5%)	Centennial (5%)	Humber (8%)

# How to they get to B.Tech.?



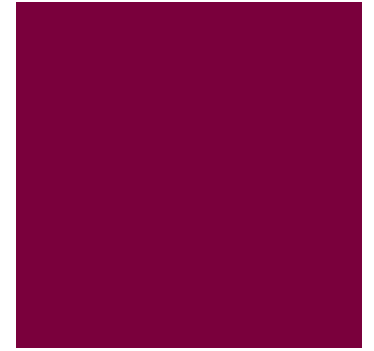
## 1. ON C → B.Tech.

- Most common - 72.5% (517)
- Student may or may not have ever planned on going to University

## 2. ON U → ON C → B.Tech.

- 9% of our students (64)
- Student aspired to achieve a degree since secondary school
- Note: 30% of students in this category followed a  
McMaster → Mohawk → McMaster route

# How to they get to B.Tech.?



## 3. INT'L C/U → ON C → B.Tech.

- 6% of our students (59)
- Student is looking to gain Canadian University credentials

## 4. INT'L C/U → B.Tech.

- Approximately 5% of our students (34)
- Student is looking to gain Canadian University credentials
- Students must complete evaluation by World Education Services to determine equivalency
- McMaster English Proficiency Requirements apply

# Why B.Tech.?

## Motivation to enroll

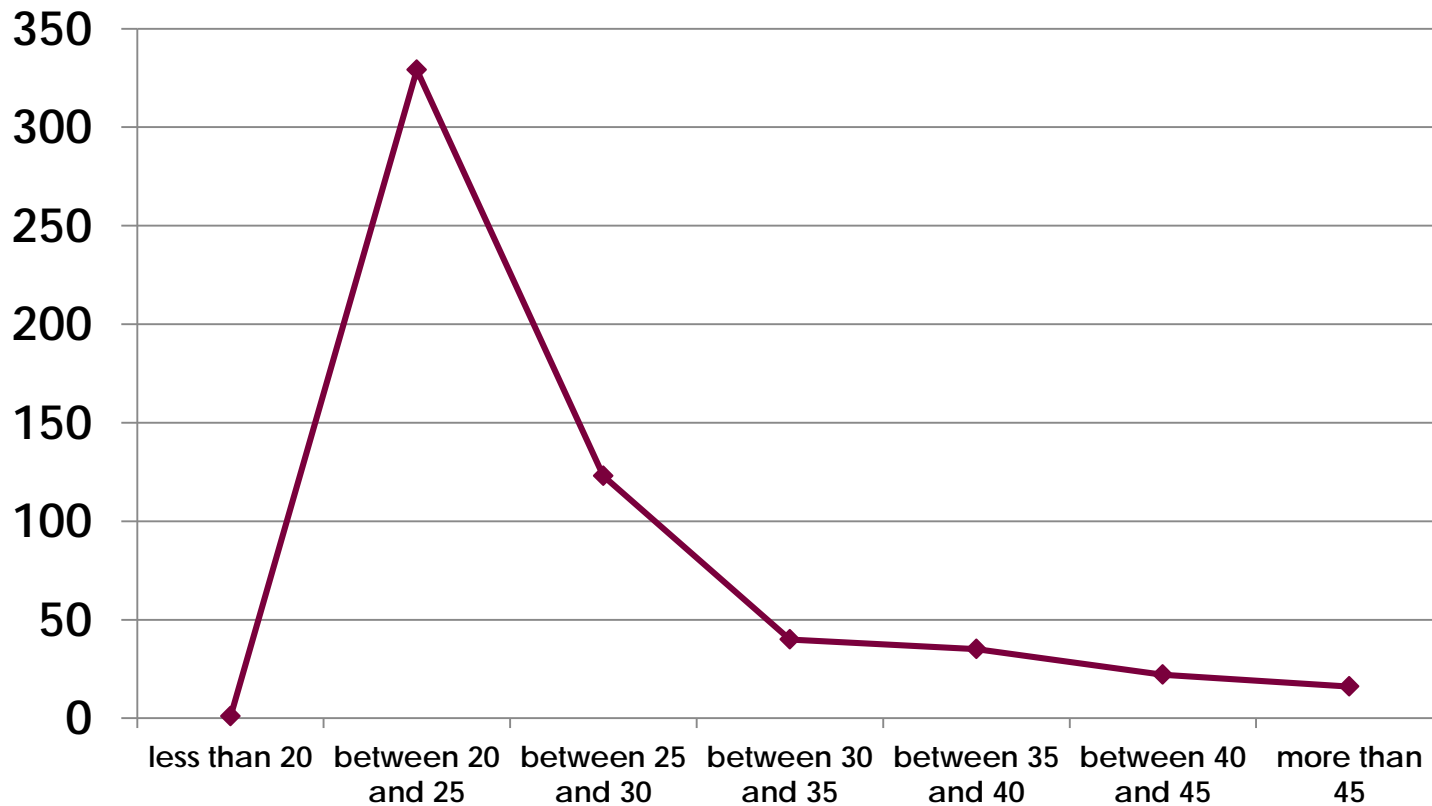
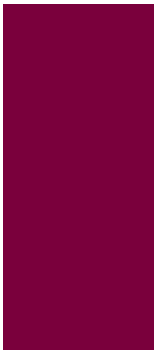
1. Career advancement
2. Acquire P.Eng. License
3. Upgrade technical skills
4. Earn higher salary
5. Pursue graduate studies

# Ernie – Video Clip (Age/Gap)



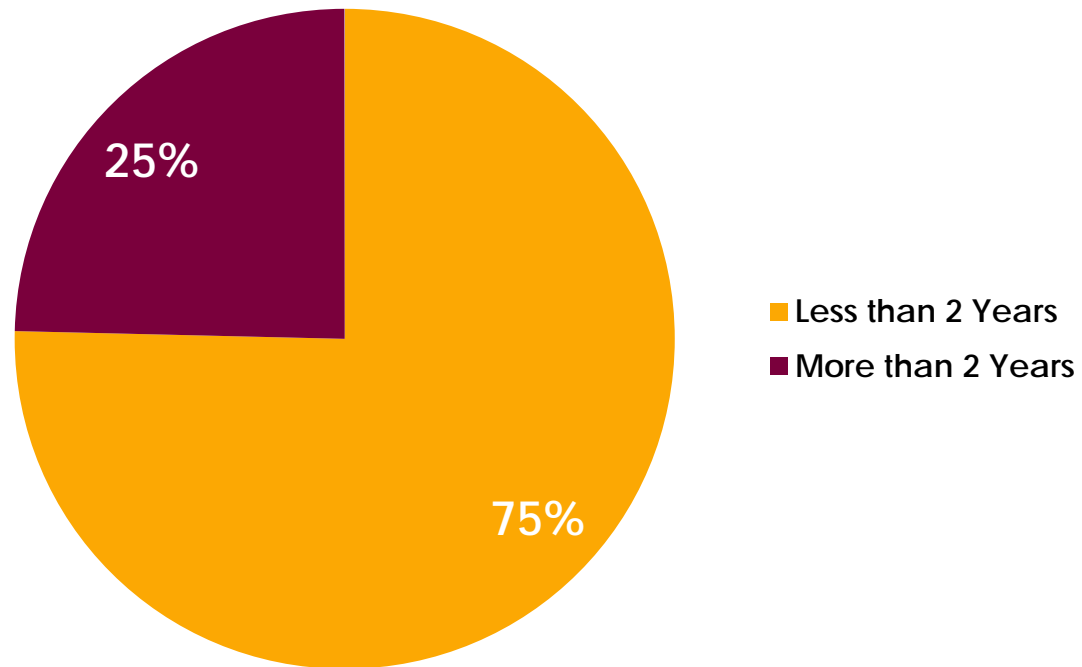
<https://vimeo.com/93030957>

# Student Demographics - AGE

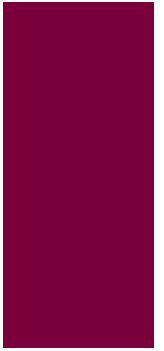




# Student Demographics - GAP



# Philip – Video Clip (Workload)



<https://vimeo.com/93030959>

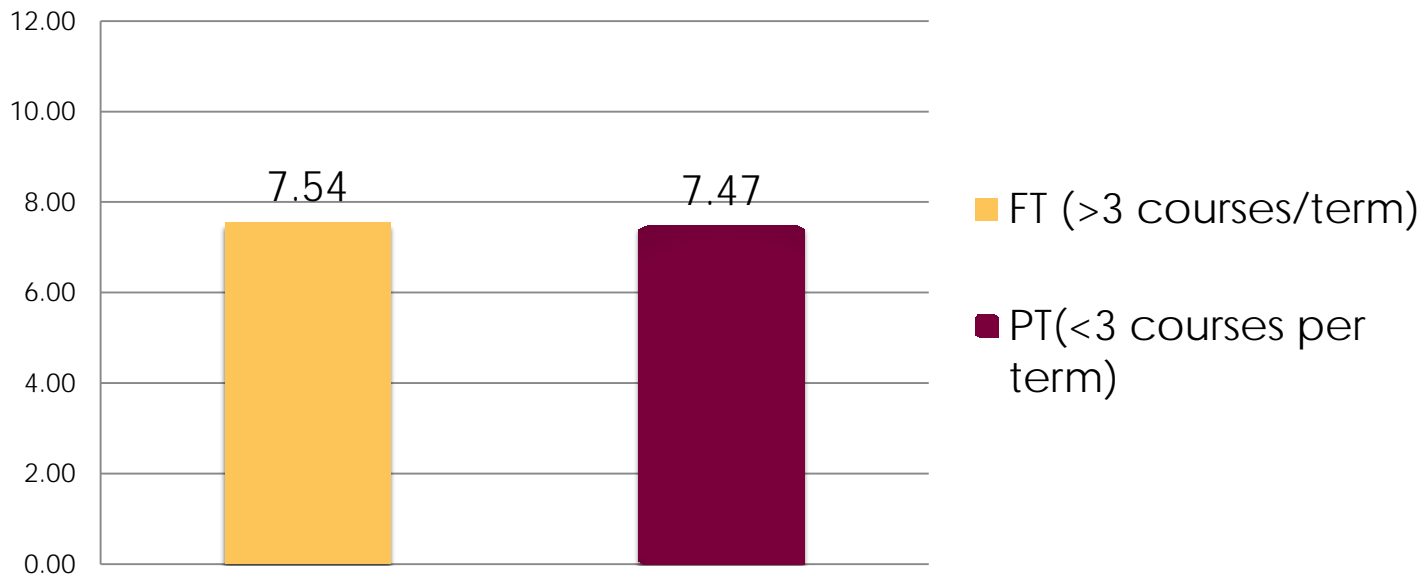
# Time to Completion

- The average course load per semester is **2.4**
  - We recommend 3 hours of our of class work for every hour of in-class study
- Factoring in semesters taken off, the average number of semesters to complete the program is **10.2**

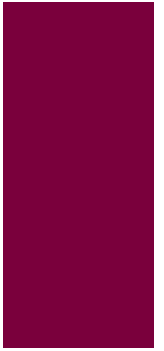
# Part-Time vs Full-Time



**GPA @ 1 YR**



# Matt – Video Clip (Math)

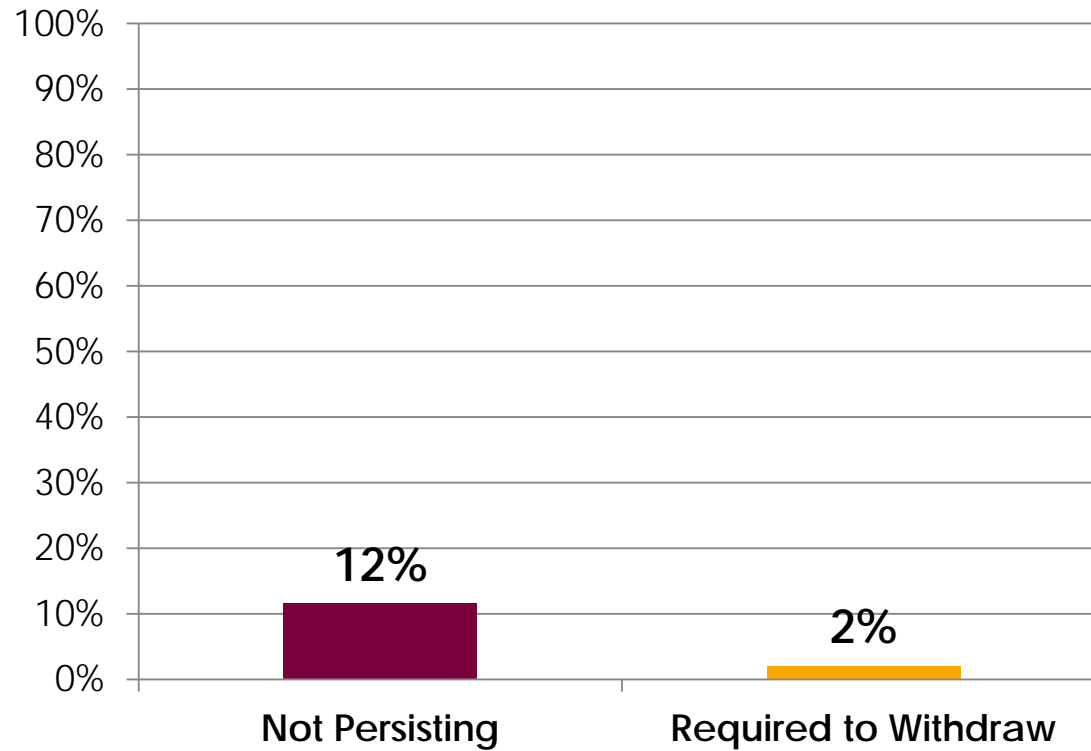


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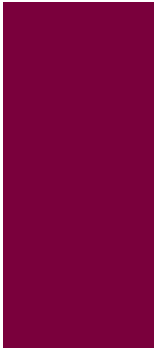
# Mathematics V

College Advanced Diploma Program	Mean Grade (12 pt GPA)
Architecture	6.04
Civil	7.29
Construction	5.52
Electrical	8.64
Electro-Mechanical	6.95
Electronics	9.38
Manufacturing	7.50
Mechanical	7.16

# Student Success



# Ashley - Management



<https://vimeo.com/93030952>

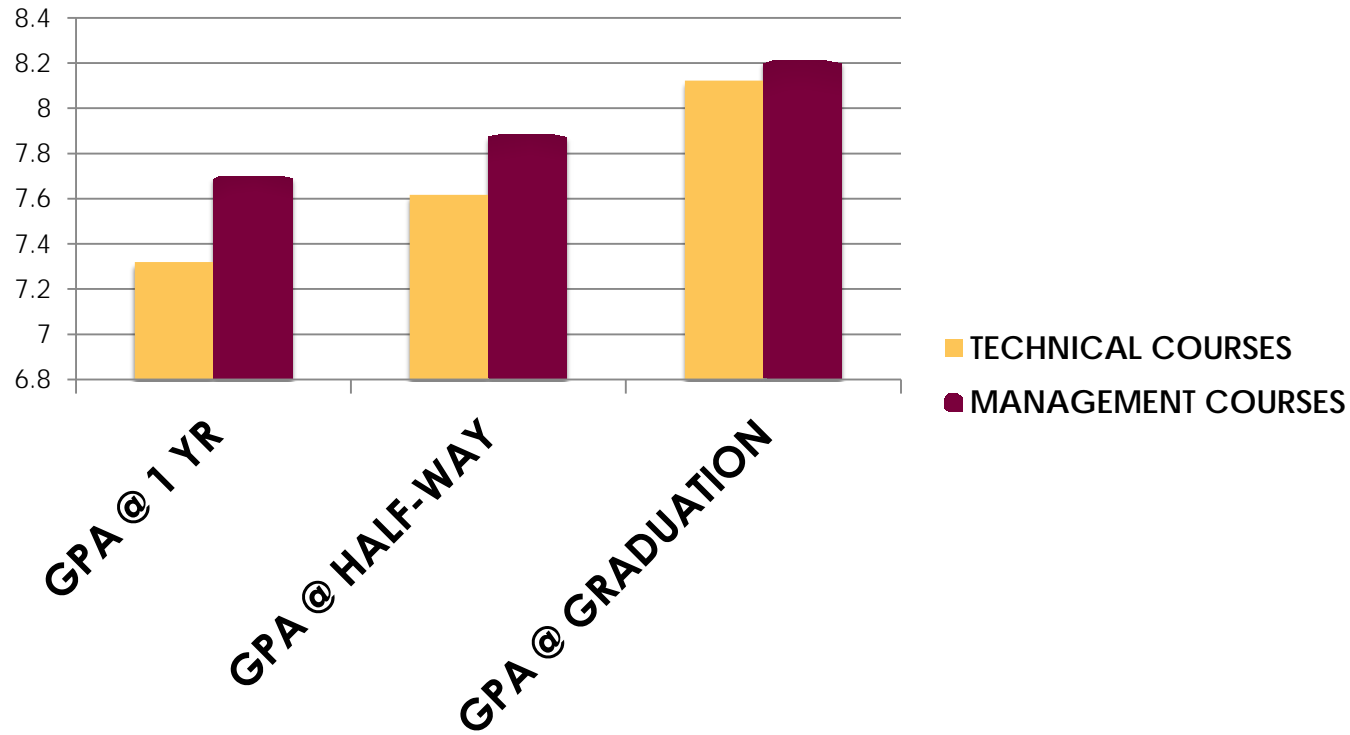
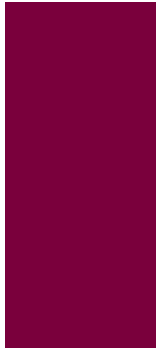


# Management Courses

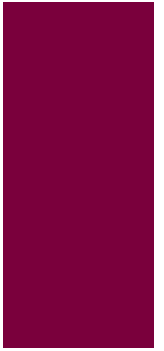
5 Mandatory	2 Optional*
<ul style="list-style-type: none"><li>▪ Engineering Economics</li><li>▪ Management Principles</li><li>▪ Entrepreneurship</li><li>▪ Project Management</li><li>▪ Financial Systems</li></ul>	<ul style="list-style-type: none"><li>▪ Strategic Planning</li><li>▪ Lean Thinking</li><li>▪ Contemporary Issues in Management</li><li>▪ Legal and Regulatory Issues</li><li>▪ Human Resources</li><li>▪ Creative and Analytical Thinking</li></ul>

*\*Sustainability course under development.*

# Management Courses



Asmaa – Grad School



<https://vimeo.com/93030953>

# Post-B.Tech. Pathways



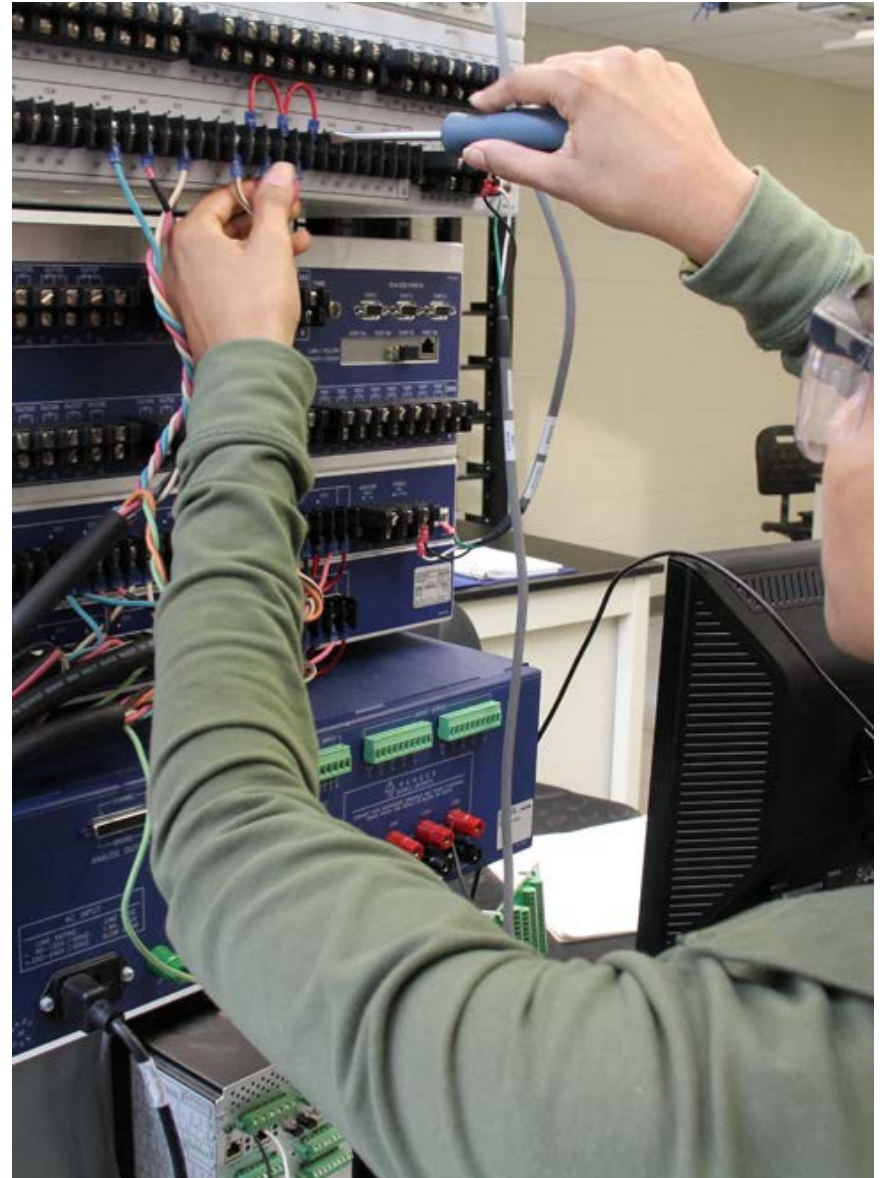
Graduate Accomplishments	
Number of P.Eng. to date	46
Number of E.I.T. to date	11
Best annual P.Eng. exam performance (V. G. Smith Award)	2
Best annual Engineering paper in Ontario (S. E. Wolfe Award)	2
Number of students who have gone on to graduate studies	+50

# Graduate Studies



# Lessons Learned

- Important to give students a voice when looking at success factors
- Diverse student body with many feeder programs = difficult to find large enough sample sizes for study
- Post-secondary community is eager to learn & collaborate



# Thank You!

[murraal@mcmaster.ca](mailto:murraal@mcmaster.ca)

[lbolan@mcmaster.ca](mailto:lbolan@mcmaster.ca)

