

Program	Civil Engineering Technician (421) Civil Engineering Technology (534)
Ministry of Training, Colleges, Universities Vocational Standard	51003 -- Ontario College Diploma - Technician 61003 -- Ontario College Advanced Diploma -- Technology
Dean	Tony Thoma
Associate Dean	Chris Blackwood
Program Review Membership	Program Faculty: Peter Olynyk, Kirk Smeaton, Kevin Haluik, Ted Wertz, Mike Keating Curriculum Design Specialist: Lisa Pegg Institutional Research: Carmelinda DelConte
Program of Studies	2011/2012 11-A
Final Analysis Session	October 27, 2011
Date of Interim Status Report	2014/2015 Academic Year
Date of Next Program Review	2016/2017 Academic Year
Date Submitted to VPA Office	October 2012

This report represents the findings of Program Review for the Civil Engineering program cluster in the Faculty of Engineering Technology. The review was performed during the period October 2010-December 2011.

This report has been prepared, reviewed, and accepted by all parties to the review, including program faculty, Curriculum Design, Institutional Research, Dean/Associate Dean in the school of Interdisciplinary Studies, and the Vice President Academic. The signatures of the representative parties demonstrate their acceptance of the content of this report and a commitment to prepare an interim status report in Fall 2014.

For the Program (Dean or Associate Dean):

Chris Blackwood
Signature

October 2012
Date

For the Vice President Academic:

Signature

Date

Summary: Highlights

Civil Engineering Technician students will acquire CAD, plan reading and visualization skills needed to create plans for today's modern infrastructure. Students will explore building and construction materials, project scheduling and estimating while developing construction surveying, materials testing, inspection, municipal services and geotechnical skills.

In addition to developing entry-level skills, students in the Civil Engineering Technology Advanced Diploma will acquire CAD, plan reading and visualization skills, and advanced level courses in structural design, geotechnical services and design, municipal services design and construction, construction law and management, highway design and surveying.

Affiliations include the Ontario Association of Certified Engineering Technicians and Technologists (OACETT), Transportation Association of Canada (TAC) and the Ontario Good Roads Association (OGRA).

Pathways for graduates of the Advanced Diploma include the Bachelor of Technology Degree at McMaster (Accessed via web March 2012 <http://www.mohawkcollege.ca/engineering-technology-programs/bachelor-technology-partnership-degree-completion.html>); and the B.Eng. at Lakehead University, Thunder Bay, Ontario.

This is the first formal review of the Civil Engineering program cluster following the established program review process. The focus of the program review is to update the curriculum mapping matrix and analyze of various metrics from an environmental scan to develop actions to maintain and/or enhance curriculum and program quality.

Evidence from program review for the Civil Engineering program cluster indicates that:

Phase 1-Curriculum: The Civil Engineering program cluster meets all requirements outlined in the MTCU Framework for Programs of Instruction. Courses in the Program of Studies (POS) for both technician and technology contribute to the program learning outcomes (MTCU code 51003 and 61003). The Civil Engineering program cluster meets the General Education requirements and general program timelines based on 11/12 A POS. Action plans for quality improvements include aggregating several vocational standards to improve the accuracy of the mapping.

Phase 2-Environmental Scan: There are approximately 12 Civil Engineering programs in the CAAT. Applicant and registrant trends (2010 and 2011) have remained stable with applicants more likely choosing the Advanced Diploma over the Diploma. 60% of applicants chose the Mohawk programs as first or second choice which is lower than comparator programs at other colleges. There is interest in the program from the Conestoga, Niagara, Fanshawe and Sheridan catchments, however, these applicants are not likely to convert. The Civil Engineering program cluster is more likely to attract and convert applicants from the Mohawk catchment; And, overall the program is not losing students to other catchments. The Civil Engineering program cluster is ranked highest in Student Satisfaction scores for Key Performance Indicators (KPI) when compared to other colleges with the same program. Action plans for quality improvements include monitoring of the CAAT in regard to program growth. analysis.

Phase 3-Program Quality and Strategic Initiatives: Based on a self-assessment, most courses in the Civil Engineering Program cluster have learning plans, all courses indicate a required PLAR, and the program area has a plan for meeting the blended learning requirements for 2013.

Summary: Overall Findings by Program Review Component

Phase	Component	Met	Partially Met	Not Met	Evidence
Curriculum	Course Outlines	X			-Course Outline Review -Programs meet requirements outlined in course outline policy.
	Curriculum Mapping Matrix	X			-Programs meet requirements outlined in program review and program quality policy in keeping with MTCU framework for programs of instruction.
	MTCU Framework for Programs of Instruction	X			-Meets general education and timelines components of MTCU framework for programs of instruction.
	Program Advisory Committee	X			See Appendix A
Environmental Scan	Key Performance Indicators	X			-The technician program has the highest has Student Satisfaction scores for the MTCU. -The technology program has Student Satisfaction scores similar to the MTCU.
	Program Performance Indicators		X		-Program cluster has maximum PPI scores for gross contribution and lower PPI scores for program quality and graduation rate
	Applicant/ Enrolment	X			-Applicant/Enrolment data stable over several years.
	Student Success				-deferred to 5-Year Action

					Plan
Program Quality and Strategic Priorities	Quality--Curriculum Content	X			-several courses contribute to program quality and follow best practices in curriculum development
	Quality--Flexible Delivery	X			-several courses offer flexible learning opportunities for students.
	Quality--Flexible Operationally	NA			
	Quality--Experiential Learning	X			-applied learning -co-op opportunities
	Innovation--Applied Research	X			-several courses contribute to development of applied research skills
	Innovation--Entre/ Intrapreneurship	X			-several courses contribute to development of entrepreneurial skills
	Sustainability--Curriculum	X			-several courses contribute to content related to sustainability
	Sustainability--Practices	X			-sustainable practices are evident in many courses (modelled)
	PLAR	X			-all courses indicate a PLAR requirement
	Learning Plans		X		-most courses have a learning plan
	eLearn	X			-program has a plan for meeting blended-learning requirement by 2013
	Student Feedback about Progress	NA			

Summary: Commendations, Affirmations and Recommendations

Commendations

There are a number of areas that the Civil Engineering program cluster demonstrates best practices and leadership in regard to program quality. They are:

- Student exposure to comprehensive experiential learning opportunities through:
 - capstone technical project
 - Civil 3D software and advanced surveying techniques
 - Bridge Building Competition implemented through Applied Mechanics and Structural Design courses includes participants from other college programs and high school students.
- The program adopted a semester rotation to allow students wishing to fast-track their program of studies, to access the degree completion program at Lakehead University one year earlier than normal.
- Very high coop work term placement rate.

Affirmations

Affirmations are declarations, which may/may not have evidence as a result of program review, that the program faculty identify are areas required to support program quality improvements. The areas identified include:

- Program curriculum continues to be consistently reviewed by an active PAC
- Program requires dedicated lab space with adequate computer hardware and software support. (eg. AutoCAD, 3D Civil, GIS design software requires significant computer memory and computational speed.).
- Surveying technology and materials testing technology is rapidly advancing. The department should pursue opportunities to purchase/refresh laboratory equipment.
- Can there be more hours in the POS to expand the structural design course offerings?
- Can the 1st year cluster course offerings be modified, but not impact on the flexibility in program choice that this structure offers students.

Recommendations

Analysis of various data sources from program review identified some action items area that will assist in maintaining the quality and student satisfaction of the program. They are:

1. Curriculum Currency and Renewal
 - Generate an aggregate set of vocational standards to include sustainability and to address the dispersion within the current standards.
 - Update Curriculum Mapping Matrix based on Mohawk College defined vocational standards for the Civil Engineering Program cluster
 - Include courses currently not mapped and new courses
2. Environmental Scan
 - Use available sources (Curriculum Mapping Matrix, Key Performance Indicators, Strategic Enrolment Planning data) to monitor program quality on an annual basis.
 - Monitor trends in CAAT for the Civil Engineering program cluster
3. Program Quality and Strategic Priorities
 - Investigate a standard learning plan for program

Resources

Program Review Phases	Source	File Name	Date Completed/ Accessed	Used (Y/N)
Phase 1: Curriculum	Course Outline Review	421 534 Course Outline Review.xls	October 2010	Y
	Curriculum Mapping Matrix (CMM)	421 Curriculum Mapping Matrix.xls 534 Curriculum Mapping Matrix.xls	July 2011	Y
	Competitive Curriculum Analysis (CCA)	421 534 Competitive Curriculum Analysis.xls	October 2011	Y
	Program of Studies (POS)	11 A POS 421.pdf 11 A POS 534.pdf	July 2011	Y
	Vocational Standards (VS)/ Program Description	421 VS MTCU 51003.pdf 534 VS MTCU 61003.pdf	Published 2004	Y
	Focus Group Notes	421 534 Focus Group Notes.doc	October 2011	N
	PAC Minutes	See Appendix A		
	Credentials Framework (OCD and OCAD)	421 Credentials Framework 534 Credentials Framework	October 2011	Y
	POS Trend Analysis	Not Applicable		N
	Program System Matrix	Not Applicable		N
	Pathways Graphic	Pathways and Partnerships	October 2011	Y
	Other (e.g.	Not Applicable		N

	accreditation letters etc.)			
Phase 2: Environmental Scan	Program Performance Indicators	421 534 PPI.pdf	2009-2010 Fiscal Year	Y
	Key Performance Indicators	421 534 KPI.xls	2010-2011	Y
	Surveys	Not Applicable		N
	Competitive Program Profile	421 534 Competitive Program Profile.xls	2010-2011	Y
	Student Success and Retention			N
	Labour Market Demand	http://www23.hrsdc.gc.ca/occupationssummarydetail.jsp?&tid=40 421 534 Ontario Labour Market.pdf	July 2011	Y
	Program Job Search			N
	Applicant vs. Registrant analysis	421 534 Competitive Program Profile.xls	2010-2011	Y
	Student Entrance survey			N
	Employment Profile	421 534 Competitive Program Profile.xls	2010-2011	Y
	Employment Outlook	http://www23.hrsdc.gc.ca/occupationssummarydetail.jsp?&tid=40	July 2011	Y
	OSAP Default Rates			N
	Assessment for Success			N
	Other			N

Phase 3: Quality Processes	Program Quality	421 534 Program Quality.xls	July 2011	Y
	Strategic Activities	421 534 Strategic Activities.xls	July 2011	Y
	Re-Thinking Assessment	Various Courses	October 2010	Y
	Program Level Assessment Mapping	Not Applicable		N
Supporting Policies	Course Outline Policy		Accessed Winter 2012 via: http://www.mohawkcollege.ca/about/policies/CorpSect5.html	Y
	Program Review Policy		See Course Outline Policy	Y
	Program Quality Policy		See Course Outline Policy	Y
	Program Advisory Committee		See Course Outline Policy	Y
	Prior Learning and Recognition			N
	General Education			Y
	Program of Studies			Y
	Academic Scheduling			N
Supporting MTCU Framework documents	Framework for Programs of Instruction		Accessed Winter 2012 via: http://www.accc.ca/ftp/es-ce/MTCUCollegeFrame	Y

			work.pdf	
	Essential Employability Skills		See Framework for Programs of Instruction	Y
	General Education		See Framework for Programs of Instruction	Y
	Credentials Framework		See Framework for Programs of Instruction	Y

Curriculum: Summary

Overview

Phase 1 of program review is designed to develop and analyze a Curriculum Mapping Matrix which links course learning outcomes to program learning outcomes, essential employability skills and external standards (where applicable). Curriculum mapping is a ministry requirement and provides evidence of curriculum compliance to the program learning outcomes. Through focus groups, external stakeholders such as employers, graduates of the program and current students are also involved in this phase of program review.

Highlights

- Almost all course outlines for the Civil Engineering program cluster (Civil) are available in the course outline application (CORE)
- A comprehensive curriculum mapping matrix for each program provides evidence that the curriculum and content meets or exceeds expectations for development of graduate skills.

Background

- Phase 1 of Program Review for Civil was completed by the program team through participation in the Fall 2010 program review workshops. Results from the analysis are included in this report with opportunities for input by the program area.

Data Sources

- Competitive analysis overview sourced from college and program websites
 - Curriculum mapping matrix (CMM)
 - POS Version 11-A
 - Program Learning Outcomes (MTCU)
 - Essential Employability Skills (MTCU)
 - External Standards (CTAB)
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- Note: Up-to-date course activity and course failure information was not available for analysis due to Mohawk staff illness.

Curriculum: Mapping Analysis

Overview

A Curriculum Mapping Matrix (CMM) is developed based on links between course learning outcomes and program learning outcomes, essential employability skills and external standards (where applicable). The CMM provides program areas with data in order to make decisions about curriculum, scaffolding/ laddering and breadth, depth and complexity of student experience with the curriculum.

The following analysis for Civil Engineering program cluster is based on a complete curriculum mapping matrix.

Civil Engineering Technology

Course Learning Outcome Links to Program Learning Outcomes

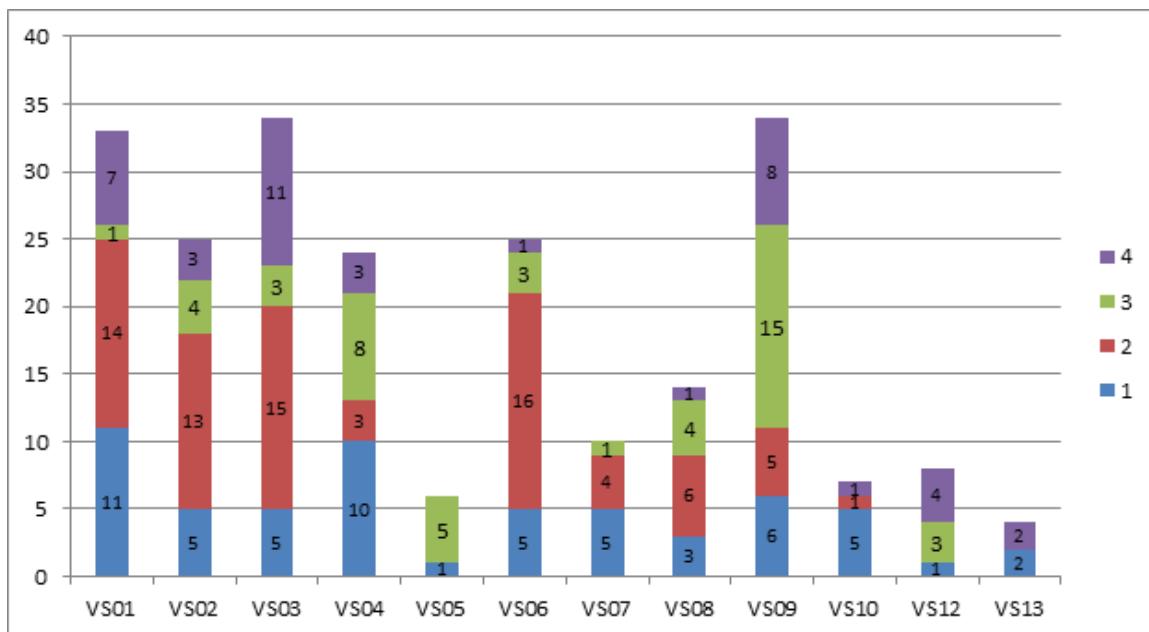
Breadth of Learning Summary

- An analysis of the CMM shows students are exposed to all vocational standards for Civil Engineering Technician and Civil Engineering Technology.

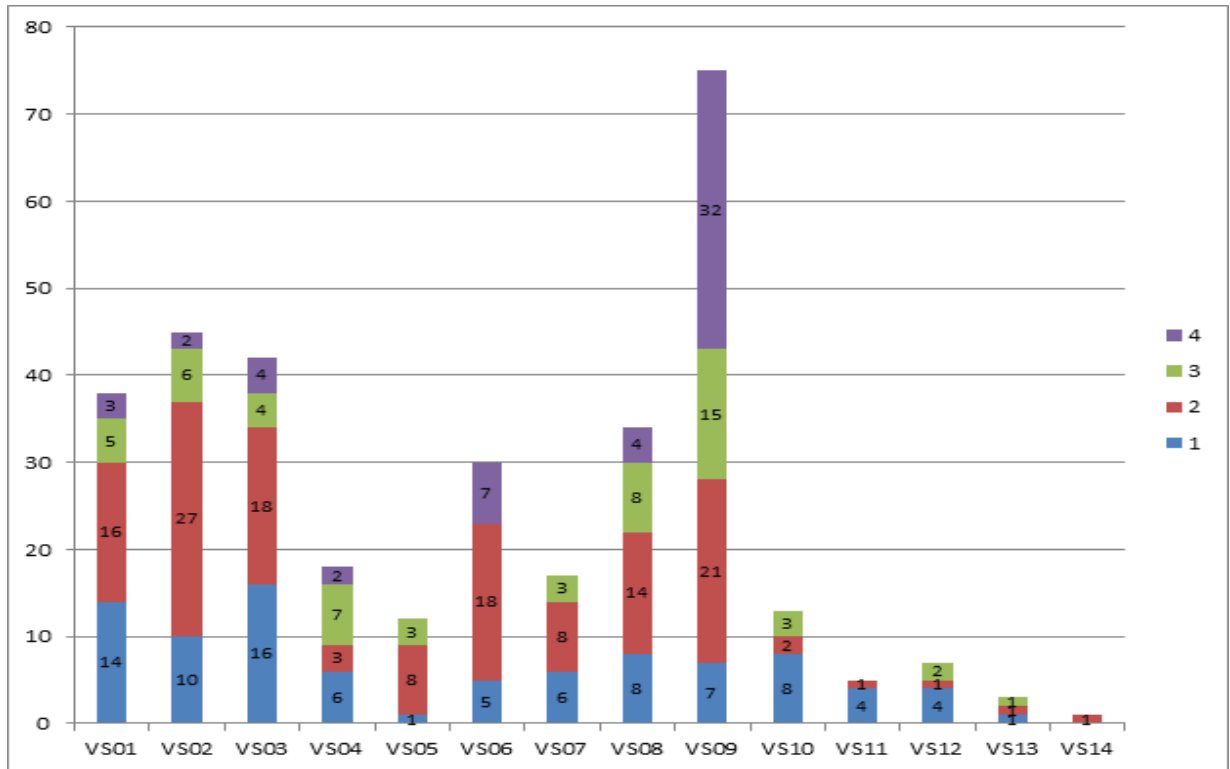
Vocational Standards

- Technician:
 - 6/14 VS have an adequate number of CLO links (ranging from approximately 20 to more than 30) from a broad range of courses in the program of studies
 - 7/14 VS require consideration for additional course content; new course development; Or, consider consolidation of discrete VS codes into a Mohawk specific program learning outcome.
- Technology:
 - 7/14 VS have an adequate number of CLO links (ranging from approximately 20 to more than 30) from a broad range of courses in the program of studies
 - VS09 appears to have a significant number of links which may be attributed to the focus of the program (?)
 - 7/14 VS require consideration for additional course content; new course development; Or, consider consolidation of discrete VS codes into a Mohawk specific program learning outcome.
- External Standards:** Not Applicable

Curriculum Mapping Matrix: Civil Engineering Technician Course Learning Outcome Links to Vocational Standards (10-11A POS)



Curriculum Mapping Matrix: Civil Engineering Technology Course Learning Outcome Links to Vocational Standards (10-11A POS)



Course Learning Outcome Links to Program Learning Outcomes

Depth and Complexity of Learning Summary

Vocational Standards

- There are a total of 224 CLO links to VS for the Technician program and 340 CLO links to VS for the Technology program.
- Technician:
 - Approximately 50% of total CLO links to VS are characterized as contributing to a significant (3) or very significant (4) degree to graduates' ability to demonstrate the outlined skill or ability
 - Overall levels of learning are scaffolded across semesters with most CLO links at a minor level in Semester 1 to most CLO links at a very significant level in Semester 4
 - Consider a review of curriculum ,assessment and/or instructional design for VSs linked at a very significant level in SEM1
- Technology:
 - Approximately 33% of total CLO links to VS are characterized as contributing to a significant (3) or very significant (4) degree to a graduates ability to demonstrate the skill or ability.

Characterization of Linking by Vocational Standard--Technician

Count of Course Learning Outcome	Column Labels				
Row Labels	1	2	3	4	Grand Total
VS01	11	15	1	6	33
VS02	5	13	4	3	25
VS03	5	16	3	10	34
VS04	10	3	8	3	24
VS05	1		5		6
VS06	5	17	3		25
VS07	5	4	1		10
VS08	3	6	4	1	14
VS09	7	7	12	8	34
VS10	5	1		1	7
VS12	2		2	4	8
VS13	2			2	4
Grand Total	61	82	43	38	224

Characterization of Linking by Vocational Standard--Technology

Count of Course Learning Outcome	Column Labels				
Row Labels	1	2	3	4	Grand Total
VS01	14	16	5	3	38
VS02	10	27	6	2	45
VS03	16	18	4	4	42
VS04	6	3	7	2	18
VS05	1	8	3		12
VS06	5	18		7	30
VS07	6	8	3		17
VS08	8	14	8	4	34

VS09	7	21	15	32	75
VS10	8	2	3		13
VS11	4	1			5
VS12	4	1	2		7
VS13	1	1	1		3
VS14		1			1
Grand Total	90	139	57	54	340

Course Learning Outcome Links to Program Learning Outcomes

Semester

- It appears as though course learning outcomes contribute to approximately 40% of all links at a minor level in Semester 1.
- It appears as though students are exposed to curriculum at a very significant level in preparation for graduation

of Course Learning Outcome Links to Program Learning Outcomes by Semester-- Technician

SEM	Minor (1)	Moderate (2)	Significant (3)	Very Significant (4)	Total
One	19	19	1	1	40
Two	13	28	17	6	64
Three	18	15	10	14	57
Four	11	20	15	17	63

of Course Learning Outcomes Links to Vocational Standards by Semester--Technology

SEM	Minor (1)	Moderate (2)	Significant (3)	Very Significant (4)	Total
One	18	15	7	5	45
Two	12	32	8	1	53
Three	11	16	12	13	52
Four	21	14	5	9	49
Five	16	28	12	10	66
Six	12	34	13	16	75

Course Learning Outcome Links to Program Learning Outcomes

Program Composition

- Technician:
 - There are 11 Foundational courses, 9 Specialized, 0 Integrational and 3 General Education (ENVREA204, COMM 10034 & Gen.Ed. Elective)
 - Total of 224 CLO links spread over 20 courses in 4 semesters
 - 53% of CLO are in Foundational courses, 47% in Specialized and 0% in Integrational
- Technology:
 - There are 16 Foundational courses, 11 Specialized, 3 Integrational, and 3 General Education (ENVREA204, COMM 10034 & Gen. Ed. Elective)
 - Total of 340 CLO in program spread over 30 courses in 6 semesters
 - 46% of CLO are in Foundational courses, 41% in Specialized, and 12% in Integrational

	% of CLO Links by Course Classification									
	Minor 1		Moderate 2		Significant 3		Very Sign. 4		Overall	
	421	534	421	534	421	534	421	534	421	534
Foundational	23	26	30	47	19	15	27	12	53	46
Specialized	30	31	39	34	23	18	8	16	47	41
Integrational	N.A.	13	N.A.	39	N.A.	19	N.A.	28	N.A.	12

Course Learning Outcomes Linked to Essential Employability Skills

Due to issues with the CORE database in regard to Essential Employability Skills, this section is not completed.

Course Learning Outcomes Linked to External Standards: Not Applicable

Compliance: Framework for Programs of Instruction

Compliance: Framework for Programs of Instruction – Civil Engineering Technician- Diploma		✓
Scope: Depth, Breadth and	• Meets all specific Vocational Outcomes as defined by	✓

Complexity	<ul style="list-style-type: none"> the provincial program standards Planning and implementation of alternative approaches to skill and knowledge application across a broad range of technical and/or administrative requirements showing substantial depth in some areas where judgement is required Applications involve personal responsibility, autonomy in performance, working in teams 	
Essential Employability Skills	<ul style="list-style-type: none"> Basic fundamental personal management and teamwork skills Depth of achievement consistent with EES outcomes (based on CMM 2005) 	✓
General Education	<ul style="list-style-type: none"> Exposure to at least ONE discipline outside field of study Access to 3-5 courses designed discretely from vocational standards 	✓
Typical Duration	<ul style="list-style-type: none"> Approximately, four semesters or 1200-1400 equivalent instructional hours <ul style="list-style-type: none"> POS as of Fall 2011 was 1174 POS hours for the Technician Program. 	✓

Compliance: Framework for Programs of Instruction – Civil Engineering Technology Advanced Diploma		✓
Scope: Depth, Breadth and Complexity	<ul style="list-style-type: none"> Meets all specific Vocational Outcomes as defined by the provincial program standards Analysis, Diagnosis, Design, planning, execution and evaluation across a broad range of functional and management functions which involve significant technical leadership or guidance functions Most weighting placed on depth versus breadth Applications involve personal responsibility, autonomy in performance, working in teams 	✓
Essential Employability Skills	<ul style="list-style-type: none"> Basic fundamental personal management and teamwork skills Depth of achievement consistent with EEs outcomes (based on CMM 2006) 	✓
General Education	<ul style="list-style-type: none"> Exposure to at least ONE discipline outside field of study Access to 3-5 courses designed discretely from vocational standards 	✓
Typical Duration	<ul style="list-style-type: none"> Approximately, six semesters or 1800-2100 equivalent instructional hours 	✓

	<ul style="list-style-type: none"> • POS as of Fall 2011 was 1790 	
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Curriculum: Focus Group

Civil Engineering Technician/Technology

[October, 24th 2011]

Program Review

Focus Group Observations & Recommendations

PARTICIPANTS:

Dave; Rocco; Mike; Irene; Paul; Jennifer; Stacey (Co-op); Erica; Jeff; Jennifer (2004 Graduate)

Knowledge

- CAD Design
 - Helped with school work
- Knowledge of surveying
 - More knowledgeable than most U students
- Math and Structural course from college was great going into Lakehead U
 - Great base of CAD, math, surveying
 - able to visualize surveying information
- Software available in municipal classes

Abilities

- Good at CAD
- Good at engineering skills (more specialized)
- Improvements in report writing are needed

Skills

- Computer skills are big
- Generic skills (computer) could use a lot of work
- Lack of project management
 - Co-ordination
- Lack of technological skills set
- Employers are relaying information that the students communication skills are lacking
 - Handwriting, writing emails (text, jargon)
 - Seems to be a language barrier
 - International
 - Mature students
 - Punctuality, work ethic, organization
- Compared to 20 years ago, students have the skills:

- CAD
- Profiles
- Grading
- Cross-sections, etc
- AutoCAD civil 3D
 - Professor can't guarantee but at least gives you the skills that you can build on in the work force

Attitudes

- Lots to invest in training
 - Companies can "mould" students and new grads into what they exactly need
- E-communication: NOT ACCEPTABLE
- Engineering and vocational and essential employability skills are very important
- Work ethic needs a boost
- Faculty are strict in the labs
 - No work: no marks
 - Applicable to work-related skills
- Figuring out that students cannot be taught soft skills – this is something they need to develop from within
- Larger trend of students going to Lakehead U
 - Degree transfers
- Satisfactory students of Mohawk College
- Looking for experience and initiative in particular fields

STRENGTHS

- Proof that co-op is a good thing
 - Shows a bit more sense of responsibility from returning co-op students
- Very satisfied with initiative from students, can really put "their head to the grindstone"
- Punctual
- Punctuality and work ethic
 - Co-op teaches that
- Classroom work re-gains interest when being involved in real work outside the classroom
 - No shortage of P.Eng people
 - Anyone who wants to make an impact on their career

CHALLENGES

- Can't teach a bit of everything and expect great skills in major specific job-related skills
- Future: need for expansion
 - Planning skills when it comes to implementing infrastructure
 - Skills are needed to plan the ultimate configuration
 - Not enough time spent on planning (Environmental Assessment)
- Understanding the technical skills rather than just designing – able to identify problems and specifications
- Some companies cannot train in order of client needs

- Inconvenient: 4 hour lectures for working students
- Subject matter that is very challenging but the goal is to be able to get the student to “get used” to the real world challenges (initiative shown by taking on these challenges)
- Civil 3D is company standard for some companies – this leads to problems associated with:
 - 50% uses “A”, 50% uses “B”
 - What do you teach?
 - What standards do you comply?
 - Legislation (affects the grads)
 - Recent green acts need to be enforced
 - Able to apply the legal/financial issues
- Companies are often “blindsided” with new acts (not knowing the regulations necessarily)

OPPORTUNITIES

- Financial classes: more important for municipalities – i.e. replacement pipes/roads: cost-benefit analysis - how to deal with the changes
 - Any businesses come down to the dollar value
 - Courses which might help – estimating, project management, financial math
 - No understanding of finance, budgeting, the concept to value-engineering, etc.
- Statistics vs. math of finance – this is something you can teach instead
- municipal programs
- CAD
- Municipal rehabilitation course
- Soft skills
- Employability skills to address
- Energy!
 - Wind turbines
 - Solar panels
 - New green energy initiatives
 - Many need to remove a few courses to order to incorporate into POS
 - All this comes back to EA (Environmental Assessment)
 - Survey and technical, structures, foundations
 - Companies expect it to continue for the future
 - Therefore! Keep the POS the same, however: adding a structural/environmental/remediation type course (in semester 5 or 6)
 - Benefit of this? It differs for companies
- No real lack of skill at this point – employers are willing to train
- All companies: technician/technologist/P.Eng –is more narrow than “pyramidal” structure
 - Seeing “credential” trends: OACETT
 - Seeing more technologists wanting to increase net worth by getting degree path
 - Need 8-9 years work experience to apply for (college time is not accepted)
- OACETT: Co-op is usually 1 year for 1 year is available

THREATS

- Design area: becomes more electronic

- Skills surrounding: software packages, modeling
- Definitely need computer skills
- But are lacking the soft skills, technical skills are great
- Difficult to follow up with work ethic

Other notes:

Graduate:

- 03
- Construction services Co-op
- Surveyor
- “Philips Engineering” – CAD work, design work
- Portion of class should be more focused with CAD
- Might need more finance classes
 - Long term planning, life cycle/finance analysis
 - Courses should be incorporated

Graduate:

- 91
- Co-op – excellent: what is expected
- AG Clark and Associates
- After grad – hired full time to run labs
 - Teaching: lack of computer skills
 - Students need to understand how to use the computer skills they are taught
 - Word excel, problems
 - Language is NOT adequate

Graduate pathway:

- Aug 04
- “AG Clark and Associates”
- After graduating – engineering work
- 1 yr after went to Lakehead U
- Came back to AG Clark and Associates
- Left to work in Vaughn
- Came back to AG and Ass.
- General workload consists of CAD and engineering

Observations:

Comparisons:

- Technician
 - Take engineers design and CAD it
 - Give to engineer to review – this fits within vocationals
 - All of this is electronic but needs to understand and have a feel for what you’re

doing – having a personal understanding

- Can really excel – technicians seen to take the easy two year exit and are eager to work, regret not taking the extra year
- Technicians don't compete well with technologists
 - Shown through communication/soft/technical skills
- Hands on
- Interpret design
- Drafting
- In co-op
- Technician has changed the most
 - Focus is more hands on
 - More CAD practice
 - Get reasonable feedback from co-ops: skills that were taught were required
 - Soft skills are frustrating – work ethic: huge lacking
- Technologist
 - More degrees of independence
 - More interested in pay check (it seems this way to employers)
 - Have more of a “feel” for design processes , able to produce plans
 -
- Ratio of hiring Technician: Technologist – was 1:1 – now 1:2
 - Some students come back to finish the technologist side
 - Mohawk is not a 2 +1 program
 - Technician program is a “safety net” – could be a lack of money/interest, etc – this can inhibit success

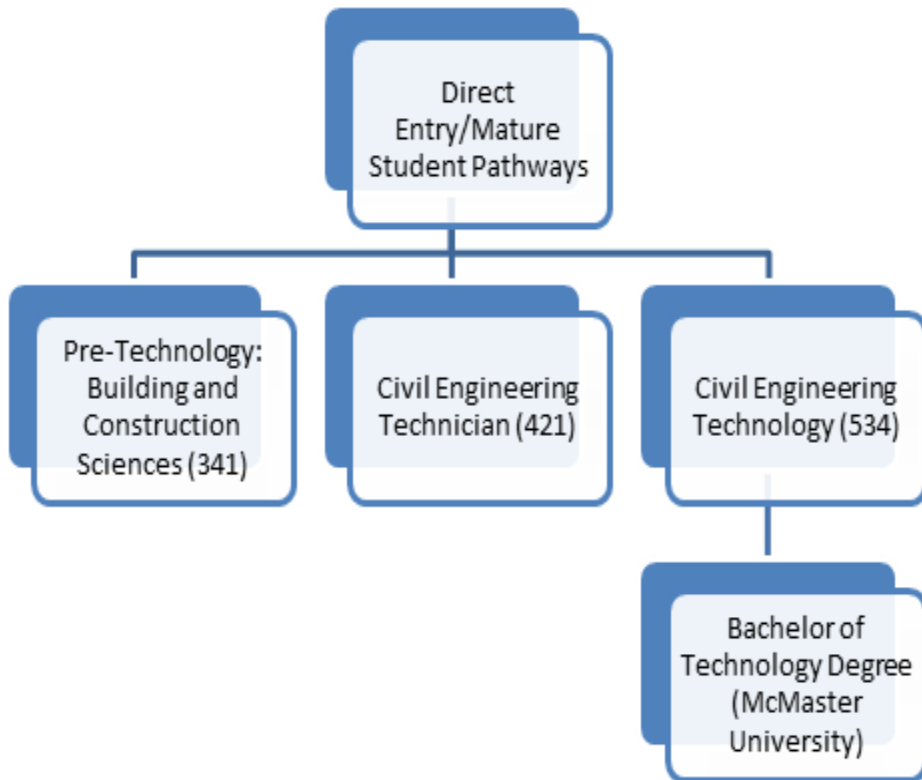
Recommendations:

Professional Development Opportunities in field:

- OGRA
- AWWA
- Scott and McKay
 - Courses not cheap, more expensive
- Should Mohawk be offering these types of courses in the program/at night/evening courses?

Curriculum: Pathways and Partnerships

Pathways: Fall 2012 Intake



Partnerships:

McMaster Mohawk B.Tech - Civil Engineering Infrastructure

Affiliations

Ontario Association of Certified Engineering Technicians and Technologists (OACETT).
Ontario Good Roads Association

Environmental Scan: Summary

Overview

Phase 2 of program review analyzes several data sources such as Key Performance Indicators, Program Performance Indicator, Competitive Curriculum Analysis, and data direct from the Ontario College Application System to complete an "environmental scan" of the program in comparison to other colleges with the same program, Mohawk College overall and other programs under the Associate Dean.

Highlights

- Mohawk's local competition for the technician program is Niagara College.
- George Brown College has a new advanced diploma program. Applicants are more likely to choose the advanced diploma than the diploma program.
- Applications and registrations have remained stable since 2008 with a significant increase in 2009 possibly due to Second Career.

Competitive Overview

- 9 colleges offer the Civil Engineering Technician Ontario College Diploma program (MTCU 51003) and

15 colleges offer the Civil Engineering Technology Ontario College Advanced Diploma program (MTCU 61003)

College	APS	APS Title	MTCU	MTCU Title	WT	FU	Duration	OccCI	TF	Lang	Start	Family
CAMB	1014	Civil Engineering Technician	51003	Civil Engineering Technician	1.20	2.30	S004	T04	2.00	E		1003
CANA	1188	Civil Engineering Technician	51003	Civil Engineering Technician	1.20	2.30	S004	T04	2.00	E	2011-09-01	1003
GEOR	1203	Civil Engineering Technician - Construction	51003	Civil Engineering Technician	1.20	2.30	S004	T04	2.00	E	2009-09-01	1003
HUMB	1016	Civil Engineering Technician	51003	Civil Engineering Technician	1.20	2.30		T04	2.00	E		1003
LOYT	1011	Civil Engineering Technician	51003	Civil Engineering Technician	1.20	2.30		T04	2.00	E		1003
MOHA	1014	Civil Engineering Technician	51003	Civil Engineering Technician	1.20	2.30		T04	2.00	E		1003
NIAG	1210	Civil	51003	Civil	1.20	2.30	S004	T04	2.00	E	2009-	1003

		Engineering Technician		Engineering Technician							09-01	
SAUL	1011	Civil Engineering Technician	51003	Civil Engineering Technician	1.20	2.30		T04	2.00	E		1003
SENE	1019	Civil Engineering Technician	51003	Civil Engineering Technician	1.20	2.30		T04	2.00	E		1003

College	APS	APS Title	MTCU	MTCU Title	WT	FU	Duration	OccCI	TF	Lang	Start	Family
ALGO	1214	Civil Engineering Technology	61003	Civil Engineering Technology	1.20	3.40	S006	T04	3.00	E	1984-09-01	1003
CAMB	1015	Civil Engineering Technology	61003	Civil Engineering Technology	1.20	3.40		T04	3.00	E		1003
CONF	1014	Civil Engineering Technology	61003	Civil Engineering Technology	1.20	3.40		T04	3.00	E		1003
CONS	1009	Civil Engineering Technology	61003	Civil Engineering Technology	1.20	3.40	S006	T04	3.00	E		1003
CONS	1136	Civil Engineering Technology - Environmental	61003	Civil Engineering Technology	1.20	3.40	S006	T04	3.00	E	2001-09-01	1003
FANS	1126	Civil Engineering Technology	61003	Civil Engineering Technology	1.20	3.40	S006	T04	3.00	E	1986-04-01	1003
GEOR	1202	Civil Engineering Technology	61003	Civil Engineering Technology	1.20	3.40	S006	T04	3.00	E	2009-09-01	1003
GRBR	1263	Civil Engineering Technology	61003	Civil Engineering Technology	1.20	3.40	S006	T04	3.00	E	2010-01-01	1003
HUMB	1018	Civil Engineering Technology	61003	Civil Engineering Technology	1.20	3.40		T04	3.00	E		1003
LACI	1062	Civil Engineering Technology - Construction	61003	Civil Engineering Technology	1.20	3.40	S006	T04	3.00	F	1990-09-01	1003
LOYT	1039	Civil Engineering Technology	61003	Civil Engineering Technology	1.20	3.40		T04	3.00	E		1003
MOHA	1015	Civil Engineering Technology	61003	Civil Engineering Technology	1.20	3.40		T04	3.00	E		1003
MOHA	1055	Transportation Engineering	61003	Civil Engineering	1.20	3.40	S006	T04	3.00	E		1003

		Technology		Technology								
NORT	1018	Civil Engineering Technology	61003	Civil Engineering Technology	1.20	3.40	S006	T04	3.00	E	1977-12-29	1003
SENE	1020	Civil Engineering Technology	61003	Civil Engineering Technology	1.20	3.40		T04	3.00	E		1003
SLAW	1065	Civil Engineering Technology	61003	Civil Engineering Technology	1.20	3.40	S006	T04	3.00	E		1003
STCL	1012	Civil Engineering Technology	61003	Civil Engineering Technology	1.20	3.40		T04	3.00	E		1003

Source: 2012-03-09 APS-MTCU Table

Environmental Scan: Applicant, Enrollment, Catchment, Conversion

Overview

OCAS data, market demand data and labour market trends are used to analyze and compare the Civil Engineering programs to comparator programs in the college system.

Student Profile for Civil Engineering Technician

Background Information

→Civil Engineering Technician diploma programs in Ontario are mapped to MTCU code 51003.

→None of the programs are over-subscribed programs. In order to have oversubscribed status, a program usually has more qualified applicants than there are seats available.

→Civil Eng Technician programs are not high demand tuition programs which means students pay basic average tuition of \$2400 per year.

→For Fall 2011, there are 8 colleges offering 9 Civil Eng Technician programs. In Fall 2008, there were 5 colleges offering 5 programs.

→Canadore's program is new to Fall 2011 application process.

4 Year Trend Applications & Registrations Analysis

Fall 2011 Term (Fall 2011 applicant data as of October 21, 2011)

Year/Year (2011/2010) Market Indicators	Enrolment Stages					
		Applications	Offer	Confirmations	Registrations	Enrolment
	MTCU 51003	1,120 ↑ 7%	n/a	269 ↑ 8%	n/a	n/a
Mohawk Prg 534	163 ↓ -7%	129 ↑ 21%	16 ↓ -53%	n/a	n/a	

➤ Total applications are up 7% from Fall 2010 and 76% from Fall 2008.

➤ Seneca (17%), Cambrian (16%) followed by a 3rd place tie Niagara and Mohawk (14%) have the highest market share of total applicants applying in Fall 2011.

Trending Analysis

➤ Fall 2010 applications are up 64% from Fall 2008 and down 6% from Fall 2009. Total applications for Fall 2010 were 1,045.

➤ Fall 2010 registrations are also up 94% from Fall 2008 registrations and down 14% from Fall 2009. Total registrations for Fall 2010 were 225.

➤ Fall 2010 applications for Mohawk were unchanged from previous year with 175 applications and registrations were slightly up to 27 registrations.

Fall 2010 Conversion Rate Analysis

➤ Mohawk with a conversion rate of 15% in Fall 2010 is tied with Georgian with the lowest rate.

	Civil Engineering Technician Profile		MTCU 51003 Profile		All Mohawk College Programs	
	Applications	Registrations	Applications	Registrations	Applications	Registrations
Applicant Type	Two-thirds are non-direct applications (Note: 60% for Fall 2011 applications)	3 in 4 are non-direct registrations	59% are non-direct applicants (Note: no change for Fall 2011 applications)	65% are non-direct registrants	50/50 split	non-direct registrants
Gender	predominantly males	predominantly males	predominantly males	predominantly males	50/50 split	male
Program Choice	35% as 2nd choice followed by 25% as 1st choice	n/a	32% as 1st choice followed by 23% as 2nd choice	n/a	heavier skew on 1st choice; 2nd and 3rd choices are second	n/a
Program Conversion Rate	15%		22%		21%	

Background Information

→Civil Engineering Technology advanced diploma programs in Ontario are mapped to MTCU code 61003.

→None of the programs are oversubscribed programs. In order to have oversubscribed status, a program usually has more qualified applicants than there are seats available.

→Civil Eng Technology programs are not high demand tuition programs which means students pay basic average tuition of \$2400 per year.

→For Fall 2011, there are 12 colleges offering 15 Civil Eng Technology programs. In Fall 2008, there were 10 colleges offering 12 programs.

→There are no new programs introduced in Fall 2011 however in Fall 2010 Algonquin introduced a new program, INTERNATIONALLY-TRAINED CIVIL ENGINEERING TECHNOLOGY. This program had 56 applications however it appears the program did not run as there no registrations reported.

4 Year Trend Applications & Registrations Analysis

Fall 2011 Term (Fall 2011 application data as of October 21, 2011)

Year/Year (2011/2010) Market Indicators	Enrolment Stages					
		Applications	Offer	Confirmations	Registrations	Enrolment
	MTCU 61003	3,604 ↑ 7%	n/a	839 ↑ 11%	n/a	n/a
Mohawk Prg 534	534 ↑ 0%	314 ↑ 9%	107 ↑ 15%	n/a	n/a	

➤ Total applications for the MTCU are up 7% (246 applications) from Fall 2010 and 45% (1113 applications) from Fall 2008.

➤ Humber (14.5%), George Brown (13.5%) followed by 3rd place Fanshawe (12.1%) have the highest market share of total applications applying in Fall 2011.

➤ Mohawk is positioned 5th with 10.5% market share of total applications applying in Fall 2011.

Trending Analysis

➤ Fall 2010 applications for the MTCU are up 35% from Fall 2008 and up 10% from Fall 2009. Total applications for Fall 2010 were 3,358.

➤ Fall 2010 registrations for the MTCU are also up 26% from Fall 2008 registrations and up 4% from Fall 2009. Total registrations for Fall 2010 were 734.

➤ Fall 2010 applications for Mohawk dropped 2% from previous year with 379 applications and registrations dropped 18% to 88 registrations.

Fall 2010 Conversion Rate Analysis

➤ Mohawk with a conversion rate of 23% in Fall 2010.

	Civil Engineering Technician Profile		MTCU 51003 Profile		All Mohawk College Programs	
	Applications	Registrations	Applications	Registrations	Applications	Registrations
Applicant Type	Even split of direct and non-direct applications. (Note: same trend for Fall 2011 applications)	57% are non-direct registrations	59% are non-direct applicants (Note: no change for Fall 2011 applications)	65% are non-direct registrants	50/50 split	non-direct registrants
Gender	predominantly males	predominantly males	predominantly males	predominantly males	50/50 split	male
Program Choice	35% as 1st choice followed by 25% as 2nd choice (Note: same trend for Fall 2011 applications)	n/a	31% as 1st choice followed by 24% as 2nd choice	n/a	heavier skew on 1st choice; 2nd and 3rd choices are second	n/a
Program Conversion Rate	23% (This is 4 percentage points lower than previous year)		22% (This 2 percentage points lower than previous year)		21%	

MTCU Employment Profile of College Graduates Six months After Graduation

Profile of MTCU 51003

Profile of MTCU 61003

Summary of Graduate Employment Survey

Summary of Graduate Employment Survey

	2007-2008		2008-2009		Growth/Decline	
	#	%	#	%	#	%
# of Colleges	5		5		0	
Total Graduates	87		102		15	17.2%
Total in Survey	61		63		2	3.3%
Response Rate	70.1%		61.8%			
Total in Labour Force	33		39		6	18.2%

	2007-2008		2008-2009		Growth/Decline	
	#	%	#	%	#	%
# of Colleges	13		13		0	
Total Graduates	391		347		-44	-11.3%
Total in Survey	270		236		-34	-12.6%
Response Rate	69.1%		68.0%			
Total in Labour Force	228		188		-40	-17.5%

Graduate Outcomes

Graduate Outcomes

	2007-2008		2008-2009		Growth/Decline	
	#	%	#	%	#	%
Full-time Employed, Program Related	22	36.1%	23	36.5%	1	4.5%
Full-time Employed, Program Unrelated	1	1.6%	6	9.5%	5	500.0%
Part-time Employed, Program Related	3	4.9%	1	1.6%	-2	-66.7%
Part-time Employed, Program Unrelated	2	3.3%	3	4.8%	1	50.0%
Unemployed	5	8.2%	6	9.5%	1	20.0%
Not in Labour Force	28	45.9%	24	38.1%	-4	-14.3%
	61	100.0%	63	100.0%		

	2007-2008		2008-2009		Growth/Decline	
	#	%	#	%	#	%
Full-time Employed, Program Related	191	70.7%	144	61.0%	-47	-24.6%
Full-time Employed, Program Unrelated	14	5.2%	11	4.7%	-3	-21.4%
Part-time Employed, Program Related	3	1.1%	3	1.3%	0	0.0%
Part-time Employed, Program Unrelated	4	1.5%	5	2.1%	1	25.0%
Unemployed	15	5.6%	25	10.6%	10	66.7%
Not in Labour Force	43	15.9%	48	20.3%	5	11.6%
	270	100.0%	236	100.0%		

Graduate Outcomes: Graduates in the Labour Force (Excludes Graduates Not in Labo **Graduate Outcomes: Graduates in the Labour Force (Excludes Gradua**

	2007-2008	2008-2009	Growth/Decline
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	2007-2008	2008-2009	Growth/Decline
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Labour Market Demand

Ontario Labour Market for Civil indicates the job market will be average.

Human Resources Skills Development Canada indicates the job market will be exceptional for Civil Engineering Technicians and Technologists.

Environmental Scan: Program Performance and Key Performance Indicators

Overview

Program Performance Indicators (PPI)s are used to analyze the program based on 5 key metrics (meeting enrollment, KPI graduation rate, program quality, gross financial contribution). A program score is calculated based on the 5 key metrics and compares the program to other programs in the college.

Key Performance Indicators (KPI) are an MTCU directive and the data is used to analyze the program based on student satisfaction, teaching and learning, facilities etc. KPIs also provide comparator data for other programs in the college, programs under the Associate Dean, all programs at Mohawk, and similar programs in the college system

2009/10 Program Performance Indicators

PPI for the Civil programs indicate that the program is meeting enrollment targets and gross financial contribution. The program quality score is approximately 50% of the maximum of 25 which indicates that the program should focus some action items on improving this score.

Technician

Meeting Enrolment Targets (Max 15)	KPI Graduation Rate (Max 20)	Program Quality (Max 25)	Gross Financial Contribution (Max 25)	Graduate Satisfaction (Max 15)	2009/10 Final Score (Max 100)
14.0	12.0	15.6	25	10.3	77.0

Technology

Meeting Enrolment Targets (Max 15)	KPI Graduation Rate (Max 20)	Program Quality (Max 25)	Gross Financial Contribution (Max 25)	Graduate Satisfaction (Max 15)	2009/10 Final Score (Max 100)
15.0	7.8	17.4	25.0	12.0	77.3

Mohawk Key Performance Indicators (KPIs)

Technician

Student Satisfaction (Satisfied/Very Satisfied)

2009 2010

Overall

77% 81%

14. OVERALL, your program is giving you knowledge and skills that will be useful in your future career. 81% 84%

26. The OVERALL quality of the learning experiences in this program. 68% 68%

Technology

Student Satisfaction (Satisfied/Very Satisfied)

2009 2010

Overall

66% 73%

14. OVERALL, your program is giving you knowledge and skills that will be useful in your future career. 83% 83%

26. The OVERALL quality of the learning experiences in this program. 67% 77%

Environmental Scan: Competitive Curriculum Analysis

Analysis of the Civil curriculum in comparison to other colleges with the same program indicate that:

- most curriculum is homogeneous with slight variations in content
- most programs are offered in a similar delivery--full-time day
- tuition ranges appear to be similar between colleges
- Niagara and Algonquin's programs are laptop programs
- All OCAD programs are co-op optional

-

Environmental Scan: Student Success and Retention

The data for this section of the report is not available due to an illness with a Mohawk Staff member.

Deferred to 5-Year Action Plan

Quality and Strategic Priorities: Summary

Overview

Phase 3 of program review is designed to ensure that programs are recognizing and incorporating best practices in teaching and learning such as learning plans, PLAR, eLearn into the program. These aspects of teaching and learning are reviewed during regular provincial audits through the Program Quality Assurance Process Audit (PQAPA) process.

Highlights

- Most courses in the Civil Engineering Program cluster have a learning plan
- All courses in the Civil Engineering Program cluster have identified PLAR requirements.
- The Civil Engineering Program cluster has a plan for meeting institutional blended-learning requirements by 2013.

Recommendations

- None

5 Year Program Quality Enhancement Action Plan

Objectives	Action Strategies	Timelines	Responsibility	Status
Short Term (within the next 18 months)				
Generate an aggregate set of vocational standards to include sustainability and to address the dispersion within the current standards.	Revise program learning outcomes/vocational standards based on faculty input Re-Map program (include courses not included in original mapping)	Fall 2013	Program Quality	Not Started
	Present results to Program Advisory Committee	Fall 2013 (December)	Associate Dean	Not Started
Transition to eLearn@Mohawk	Transition courses to eLearn and blended format based on college requirements	March 2013	Program/eLearn/Library Team	In Progress
Annual Program Review	Develop annual program review process to monitor curriculum and program quality enhancements (including environmental scan, learning plans)	Fall 2012-Ongoing	Program/AD/CD Team	Not Started
Medium Term (within the next 18-36 months)				
Annual Program Review	Adopt Annual Program Process to monitor curriculum and program quality enhancements	TBD	Program/AD/CD team	Not Started
	Integrate new or enhanced content	Summer 2012/13		Not Started
Long Term (within the next 36-60 months)				
Monitor short-term and long-term program quality enhancements and adjust as required	Utilize Annual Program Review process to monitor program quality enhancements.	To be determined pending outcome of medium term objectives Spring 2014 (tentative)		Not Started
	Submit interim program quality report to Program quality area			Not Started
	Plan and prepare for Comprehensive Program Review	Spring 2016		Not Started

Appendix A
Program Advisory Committee Minutes 2009
Program Advisory Committee Minutes 2010

MOHAWK COLLEGE OF APPLIED ARTS AND TECHNOLOGY
School of Engineering Technology
Civil and Construction Engineering Advisory Committee
Tuesday, June 2, 2009
Room: G111

MINUTES

Present

S. Spicer, Committee Chair, Multi-Area Developments Inc.
G. Aldworth, A.J. Clarke & Associates Ltd.
P. Christie, City of Brantford
G. Emery, Stantec Consulting
A. Mantecon, Vanderwesten, Rutherford, Mantecon
J. Sudac, Dufferin Construction Company
E. Waite, City of Hamilton
C. Blackwood, Associate Dean
S. Kocznr, Job Centre (Co-op)
K. Smeaton, Co-ordinator of Civil Engineering Technician and Technology
L. Wertz, Professor

Regrets

P. Anderson, Landtek Limited Consulting Engineers
D. Kumar, City of Burlington
D. Snaith, Construction Safety Association of Ontario

Recorder: Donna Ruhloff

1. Welcome and Introduction
Chair Spicer welcomed all members present and asked them to introduce themselves and state their affiliation.
2. Chair's Remarks
Chair Spicer welcomed Kirk Smeaton and Ted Wertz. Mr. Blackwood noted that Mr. Smeaton replaced Jack Gibb as co-ordinator of our Civil Engineering Technician and Technology programs. Jack Gibb retired although he is teaching via distance education to our post secondary and Continuing Education students. Mr. Wertz commenced his teaching position September 2008 and will be taking over most of Jack's teaching portfolio.
3. Approval of Minutes of Meeting – Tuesday, November 18, 2008
The minutes were accepted as presented.

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4. Co-op and Graduate Report

Mrs. Kocznur reported the following report:

Summer 2009 Work Term

- Total of 94 students
- 32 students completed 5th semester (on a 4 month work term)
- 62 students completed 4th semester (on a 8 month work term)
- 58 students employed as of May 29, 2009
- 33 employed for 8 months and 24 employed for 4 months
- 21 students still seeking employment for the summer
- 14 students not working due to fast-tracking, not being active in looking for co-op work or not eligible
- Salaries range from \$10.93 to \$20.06 per hour with the average of \$16.10 per hour

Mrs. Kocznur mentioned the decline in co-op opportunities this summer and stated that in the past we had 100% employment for students who wanted to work, with jobs left over.

Fall 2009 Work Term

- 33 of the 62 students have secured an 8 month work term
- 5 students are fast-tracking therefore not seeking for the fall work term
- Job postings have started for the fall work term
- Interviews will begin the week of June 15th
- So far, very few employers have expressed an interest in hiring for September

Student and Graduate Employment

A total of 170 companies posted full time, part time and summer jobs for Civil and Construction students between June 1, 2008 and May 29, 2009, for a total over 230 job opportunities.

5. Program Related Issues and Industry Trends

Environmental Option

Mr. Blackwood will consider offering an environmental option in Civil Engineering Technology, semester five if the trend continues of a double class. The students would select their option in semester 5 leaving one class section as is and the other section as environmental if there is a demand for this type of graduate. A brief discussion ensued and some possible topics to include were suggested:

- Water treatment and waste water treatment plant
- Groundwater and wells
- Erosion/sediment control on site
- Salt contamination
- Solid and hazardous waste management
- Recycling of glass, concrete, tires, plastics, etc.

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6. Enrolment Report

Mr. Blackwood was pleased to report on enrolment for the Building and Construction Science programs. Currently we have 302 accepts for 280 seats this fall 2009 and 100 of those are Civil Engineering Technology

and 30 Civil Engineering Technician students. Mr. Blackwood said the pressure is on to add one more section (making a total of 8 sections).

Building Renovation – Fall 2009

Year 1 - currently at 34 accepts

Year 2 - expect 20 students

Construction Engineering Technician – Fall 2009

Year 1 – currently at 76 accepts

Year 2 –expect 35 students

Civil Engineering Technology – Fall 2009

Year 2 – semester 3 - expecting 60 students (double class)

Year 2 – semester 4 – 60 students on co-op

Year 3 – semester 5 – 33 students on co-op returning fall 2009 for final semester

Civil Engineering Technician – Fall 2009

Year 2 – expecting 25 to 30 students

Mr. Blackwood noted this year we had five fast tracking students heading to Lakehead University and several others considering the Bachelor of Technology – Civil Engineering Infrastructure.

7. New Business

Mr. Blackwood made the following announcements:

- The next meet the grad/meet the employer is scheduled on Wednesday, October 14, 2009. The last meet the grad we had over 250 students, 40 to 50 graduates and 20 to 25 employers creating a mini job fair.
- President Rob MacIsaac created his Senior Management Team with Cheryl Jensen, Vice President Academic; Rosemary Knechtel, Vice President Student Services; Ron Holgerson, Vice President Advancement and Public Affairs and the position Vice President Corporate Services to be filled.
- Mr. Smeaton noted there is no software for scheduling in the Construction Management course at this time. Mr. Sudac commented that MTO and Dufferin Construction use the Prima Vera software.

8. Next Meeting

The next meeting is scheduled on Tuesday, November 3, 2009.

9. Adjournment

The meeting adjourned at 9:10 a.m.

MOHAWK COLLEGE OF APPLIED ARTS AND TECHNOLOGY
School of Engineering Technology
Civil and Construction Engineering Advisory Committee
Tuesday, November 3, 2009
Room: G111

MINUTES

Present

P. Anderson, Acting Committee Chair, Landtek Limited Consulting Engineers
G. Aldworth, A.J. Clarke & Associates Ltd.
P. Christie, City of Brantford
G. Emery, Stantec Consulting
D. Snaith, Construction Safety Association of Ontario
J. Sudac, Dufferin Construction Company
E. Waite, City of Hamilton
C. Blackwood, Associate Dean
S. Kocznur, Job Centre (Co-op)

Regrets

D. Kumar, City of Burlington
S. Spicer, Committee Chair, Multi-Area Development Inc.

Recorder: Donna Ruhloff

1. Welcome and Introduction

Mr. Anderson agreed to Chair the meeting for Mr. Spicer. Mr. Anderson welcomed all members present.

2. Chair Remarks

Mr. Anderson noted he has no remarks at this time.

3. Approval of Minutes of Meeting – Tuesday, June 2, 2009

The minutes were accepted as presented.

4. Co-op and Graduate Report

Mrs. Kocznur presented the following report:

2009 General Co-op Hiring Observations

- The larger construction companies started out strong with posting their co-op jobs in January/February and as early as February/March these jobs were cancelled.
- Some companies that would hire several students were only hiring one student.
- Did not hear from some regular co-op employers.
- The City of Hamilton hired 15 Student Inspectors which helped the situation.
- Several companies were waiting for the government's infrastructure money to filter down into jobs which did not materialize into co-op hiring.

Page 2

Fall 2009 Work Term

- Forty-seven of the sixty-two students are currently working
- Five students are fast tracking and currently enrolled in semester six
- The fifteen remaining students were not seeking or not actively applying for co-op jobs

Student & Graduate Employment

Seventy-five companies posted full time, part time and summer jobs for Civil and Construction graduates between May 1, 2009 and October 30, 2009, for over ninety-two jobs opportunities. This is a decrease in job postings from the same time period in 2008.

5. Program Related Issues and Industry Trends

Mr. Blackwood thanked the members for their input at the last meeting with regards to creating an Environmental Option in the Civil Engineering Technology Program. Mr. Blackwood explained that he would create the Environmental Option similar to the way the Architectural Technology students select a Design or Construction Management Option commencing in their fifth semester.

Discussion ensued with the following comments/suggestions for course curriculum:

- environmental issues re: waste management, water supply and ground water quality
- the need for recycling of construction materials (concrete, steel, asphalt, timber,...)
- recycling of asphalt is especially important; also the need for applications to reuse asphalt that is ground off roadways.
- contaminated soil remediation
- wastewater management, water treatment, and stormwater management would remain part of the curriculum
- design and operation of land fill sites
- recycling of glass and other materials into asphalt and concrete

6. Enrolment Report

Mr. Blackwood announced this year's cluster started with 116 Civil Technology and Technician students.

Civil Engineering Technology – Fall 2009

Semester 3 – 75 to 80 students

Semester 5 – (returning winter 2010) – 60 to 65 students

Semester 6 – 36 students

Civil Engineering Technician – Fall 2009

Semester 3 – 31 students

Construction Engineering Technician – Fall 2009

Year 1 – 67 students

Year 2 – 34 students

Building Renovation Technician – Fall 2009

Year 1 – 58 students (Fall 2008 intake was 35 students)

Year 2 – 25 students

Mr. Blackwood mentioned the department has rented space on Millen Road to accommodate the Building Renovation Technician program's major project of framing and renovating a small structure. Last year the students participated in a Habitat for Humanity build in Georgetown.

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7. New Business

Meet the Grad/Meet the Employer Night

Mr. Blackwood was pleased to announce this year's Meet the Grad/Meet the Employer Night held on Wednesday, October 14, 2009 from 5:00 to 8:00 p.m. was a huge success with over 200 students, 30 grads and 25 employers attending. Mr. Blackwood extended an invitation to the members to attend the next Meet the Grad on Thursday, February 11, 2010.

Experimenting with Distance Education

Jack Gibb, retired professor is teaching AutoCAD 3D and GIS to the technology students via distance education. The technician students have not been as receptive to this mode of delivery. The course requires students to experience the on-line learning environment.

Mr. Blackwood expressed his thanks to A.J. Clarke for surveying and planting bars around the Alumni house. This will create a real-life application of surveying for our students.

8. Next Meeting

The next meeting is scheduled for Tuesday, June 1, 2010.

9. Adjournment

The meeting adjourned at 9:25 a.m.

MOHAWK COLLEGE OF APPLIED ARTS AND TECHNOLOGY
Faculty of Engineering Technology
Civil and Construction Engineering Advisory Committee
Tuesday, June 1, 2010
Room G111

MINUTES

Present

S. Spicer, Committee Chair, Multi-Area Development Inc.
G. Aldworth, A.J. Clarke & Associates Ltd.
D. Emery, Stantec Consulting
J. Sudac, Dufferin Construction Company
E. Waite, City of Hamilton
C. Blackwood, Associate Dean
S. Koczur, Job Centre (Co-op and Grad Placement)
K. Smeaton, Coordinator of Civil Engineering Technician and Technology
T. Thoma, Dean

Regrets

P. Anderson, Landtek Limited Consulting Engineers
P. Christie, City of Brantford
D. Kumar, City of Burlington
D. Snaith, Construction Safety Association of Ontario

Recorder: Donna Ruhloff

1. Welcome and Introduction

Chair Spicer welcomed all members present.

2. Chair's Remarks

Chair Spicer noted he has no remarks at this time.

3. Approval of Minutes of Meeting – Tuesday, November 3, 2009

Moved by Mr. Sudac, seconded by Mr. Emery to accept the minutes of the last meeting. **Carried.**

4. Co-op and Graduate Report

Mrs. Kocznur presented the co-op report:

Summer 2010 – 4th and 5th Semester/First and Third Work Term

- 131 students
- 29 withdrawn/not seeking
- 92 employed
- 10 not employed
- Average salary \$16.35 (high salary \$22.38 and low salary \$12.00)
- Employment success rate 90%

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Co-op and Graduate Report – Cont'd

Fall 2010 – 4th Semester/Second Work Term

- 72 students
- 12 withdrawn/not seeking
- 41 employed
- 19 not employed
- Job postings started May 25th
- Interviews start the week of June 14th

Mrs. Kocznur circulated a copy of the Civil Engineering Technology graduate job list of the 104 jobs posted from November 1, 2009 to May 31, 2010. Following the meeting Mrs. Kocznur submitted the stats for the Construction Technician job posting from November 1, 2009 to May 31, 2010 noting 53 jobs posted by the Job Centre.

5. Program Related Issues and Industry Trends

Mr. Blackwood noted it is time to submit proposals for new programs and raised the idea of a Surveying Engineering Technician program. In response to Mr. Spicer, Mr. Blackwood stated that the college would research the number of Civil Engineering Technician graduates working in the surveying field. Mr. Blackwood also mentioned that it takes two to three years to get approval and start the program. A brief discussion followed and the following comments/suggestions were noted:

- Definite shortage of Ontario Land Surveyors and also a shortage of younger surveyors.
- Most municipalities have their own survey crews.
- Survey layout moving to one man crews using robotic total stations.
- Consider offering a certificate program instead of a full two year technician program.
- Companies are training their own foreman to do the layout and grade surveyors.
- Offer a two year program plus one additional year for legal needs.
- Mr. Aldworth noted their company does a lot of legal surveying which requires a college education and training in G.P.S.; Total Station; Safety (OTM book 7 – traffic training); CAD, coordinate geometry; Civil 3D; geometric design; math and municipal services.

Mr. Blackwood asked the members for their input with regards to the 2010 Construction season.

- Mr. Sudac mentioned that most major projects are coming to an end and construction is slowing down. The jobs are becoming very competitive.
- Ms. Waite noted the Pan Am games and the Rapid Transit will increase jobs.
- Mr. Emery mentioned the Kitchener and London area are seeing a growth in land development.

- Mr. Spicer indicated that development in the Hamilton area is down 40% due to development charges, the HST and the bank lending rate.

6. Enrolment Report

Mr. Blackwood presented the following enrolment numbers:

- Fall 2010 cluster there are 296 accepts for 280 seats and of the 296, 119 are Civil.

Construction Engineering Technician – Fall 2010

- Semester 1 – 58 accepts
- Semester 3 – Year 2 - 48 students
- 32 students finished semester 4 – Winter 2010

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Building Renovation Technician – Fall 2010

- Semester 1 – 57 accepts
- Semester 3 – Year 2 - 40 students
- 21 students finished semester 4 - Winter 2010 and this is the first class to graduate

Civil Engineering Technician – Fall 2010

- Semester 3 – Year 2 – 35 expected
- 40 students completed their final semester

Civil Engineering Technology – Fall 2010

- Semester 3 - expecting 70 to 65 students
- Semester 6 – approximately 55 students
- Winter 2011 – semester 5 – 69 students

7. New Business

Mr. Blackwood announced the next Meet the Grad/Meet the Employer night is scheduled for Wednesday, October 13, 2010. This event is held in the fall and winter semester where over 200 students, 30 to 40 grads and approximately 25 employers attend.

Ms. Waite announced that the Great Lakes, St. Lawrence, Atlantic (GLSLA) regional chapter of the North American Society for Trenchless Technology (NASTT) offers scholarships of \$2500.00 geared towards infrastructure. Ms. Waite will forward the information package to Mr. Blackwood and Mrs. Kocznur who will send it on to the co-op students.

8. Next Meeting

The next meeting is scheduled for Tuesday, November 2, 2010 in the MSA Boardroom G111.

9. Adjournment

The meeting adjourned at 9:20 a.m.

MOHAWK COLLEGE OF APPLIED ARTS AND TECHNOLOGY
Faculty of Engineering Technology
Civil and Construction Engineering Advisory Committee
Tuesday, November 2, 2010
Room G111

MINUTES

Present

S. Spicer, Committee Chair, Multi-Area Development Inc.
G. Aldworth, A.J. Clarke & Associates Ltd.
P. Christie, City of Brantford
D. Emery, Stantec Consulting
D. Snaith, Infrastructure Health & Safety Association
C. Blackwood, Associate Dean
S. Kocznur, Job Centre (Co-op and Grad Placement)
T. Thoma, Dean, Faculty of Engineering Technology

Regrets

P. Anderson, Landtek Limited Consulting Engineers
D. Kumar, City of Burlington
P. Olynyk, Coordinator
J. Sudac, Dufferin Construction Company
E. Waite, City of Hamilton

Recorder: Donna Ruhloff

10. Welcome and Introduction

Chair Spicer welcomed all members present and welcomed Mr. Thoma, Dean, Faculty of Engineering Technology.

11. Chair's Remarks

Mr. Spicer noted that this is the second meeting this year. Mr. Spicer recommended item 5 on the agenda be moved to the end to allow for a general discussion.

12. Approval of Minutes of Meeting – Tuesday, June 1, 2010

Approval of the minutes delayed until next meeting. Donna Ruhloff will redistribute the minutes of this meeting to the members.

13. Co-op and Graduate Report

Mrs. Kocznur presented the co-op report:
Fall 2010 – 4th Semester/Second Work Term

- 72 students
- 15 withdrawn/not seeking employment
- 57 actively seeking co-op work term(s)
- 57 employed
- Employment success rate 100%
- Average salary \$15.89 (high salary \$19.00 and low salary \$13.00)

4. Co-op and Graduate Report – Cont'd
Grad Postings – May 1 to October 31, 2010

Mrs. Kocznur circulated a copy of the Civil/Construction graduate job postings for the period of May 1 to October 31, 2010. Seventy-four companies posted 104 Civil Engineering jobs and forty-two companies posted 65 construction technician jobs.

Mrs. Kocznur mentioned employers are not aware of the hands-on training that the Construction Engineering Technicians receive. A brief discussion ensued with regards to the media used by various employers to post jobs and Mr. Emery said their company posts through Workopolis. Mr. Thoma also noted it is very expensive to run three day job advertisements in the newspaper.

14. Enrolment Report

Mr. Blackwood presented the following enrolment numbers:

- The cluster started with 280 first year students and 120 are designated Civil Engineering Technician and Technology.
- Construction Engineering Technicians – Year 1 – 60 students Year 2 – 41 students
- Building Renovation Technicians – Year 1 – 65 students Year 2 – 47 students

Mr. Blackwood mentioned the first graduating class took place April 2010 with 20 students graduating. Several grads have started their own business and have hired their class mates.

- Civil Engineering Technology – semester 3 – 77 students. Mr. Blackwood noted the high enrolment meant creating a double class. A number of students from McMaster transferred to semester three, creating a wait list. The maximum enrolment is 80. Mr. Blackwood also noted the ongoing challenge to obtain co-op opportunities and jobs for this double class.
- Civil Technology – semester 6 – 55 students. Six of these students are either fast tracking or Second Career. This group of students will graduate December 2010.
- Mr. Blackwood mentioned that our programs were wait-listed early May and he is currently working with 35 to 40 students that are taking a majority of the semester one courses through Continuing Education with the intention of joining the program in January 2011 for semester two.

15. Industry Trends

A general discussion took place with regards to:

Infrastructure Funding

- The Brantford area received no infrastructure money and the only major project is a 4-pad arena.
- There is a growing trend for water testing and waste water management skills.
- The college should investigate offering a certificate program in water testing as there is more of a demand from small communities and Native communities that require water testing.

- Mike Haslam, Plumbing Professor is seeing a huge influx of retraining in the back flow course.
- The City of Hamilton offers the co-op students the opportunity to get certified in the cross connector course. The course is one week and the cost is \$800.00.

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Infrastructure Funding – Cont'd

- Most of the infrastructure money from the Federal Level will run out in March 2011 while some projects are still underway. This may cause the economic recovery to stall.
- A major project in Windsor with the extension of the 401 Highway will create jobs
- A billion dollar project will start in 2011 on the site of West 5th and Fennell – St. Joseph's Hospital.

Local ICI and Housing Sector

- Housing in the Hamilton area is down. Before July 1st there was a rush to beat the new development fee of \$7000.00 and since then very few permits have been generated.
- The final number of housing starts is approximately 1500 to 1600 and the capacity is 3500.
- Commercial and industrial building way down with the exception of Canada Bread in Glanbrook and St. Joseph's Hospital.
- There is a surge in wind and solar power, resource mining and heavy industry work.

2011 Construction Season

- The construction season will be busy finishing up the projects that came from the stimulus funding.
- The Provincial election could produce more funding.
- The HST windfall could also stimulate spending and infrastructure dollars.

16. New Business

Technology/Technician Program Review

Mr. Blackwood mentioned that the Civil Technology/Technician programs are up for review and he needs to create a focus group to review the curriculum. This focus group will meet for an evening dinner meeting consisting of students, graduates and community members. The group will review the existing Program of Studies and the Learning Outcomes. Mr. Blackwood asked for volunteers.

New Program Coordinator

Mr. Peter Olynyk has been appointed coordinator of the Civil Engineering Technology and Technician Programs. Mr. Blackwood said Peter is a true leader and is responsible for the P-Stick Competition and Meet the Grad/Meet the Employer.

Mr. Blackwood also noted that he recently posted for a full time faculty member to replace Kirk Smeaton who retired August 2010. The position is mainly to teach Construction Materials and Geotechnical courses.

Meet the Grad/Meet the Employer

Mr. Blackwood reported another successful Meet the Grad/Meet the Employer with over 275 students attending. This is the first time the event was held in the Arnie due to the major renovations of the North Cafeteria. The next event is scheduled for Tuesday, February 1, 2011.

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Plans for 2nd Semester Sustainability Course

Mr. Blackwood announced that Dorota Goede, Architectural faculty member is currently on a sabbatical to develop a Sustainable Course for the semester two cluster. The Sustainable Course will replace the Drafting 2 course which is 3 hours/week. The two hour Sustainable Course will allow one additional hour to be added to the CAD B course. This course will give students the opportunity to write an entry level test for certification to the Green Building Council.

Mr. Blackwood also wanted to recognize A.J. Clarke and Associates for creating an official surveying site around the Alumni House. The college accounting department insisted on making it official and the college would pay the full cost. A.J. Clarke donated half the value back to the department and Mr. Blackwood arranged with the Development Office to create a student award/bursary. The government matches the funds donated by A.J. Clarke.

17. Next Meeting

The next meeting is scheduled for Tuesday, May 31, 2010.

18. Adjournment

The meeting adjourned at 9:30 a.m.