

Key Research Findings

This analysis was based on the pre-determined criteria listed below:

Section	Description	Measures
Student Demand	<p>Includes an assessment of OCAS (2007 - 2011) enrolment data at other colleges in terms of mean growth rate with a specific focus on Fleming's direct competitors where appropriate (Georgian, Sheridan, Seneca and Durham)</p> <p>Trends in certificate, diploma, degree, apprenticeship and continuing education (where available).</p> <p>Click Below to Access Full Source Document: Fall Enrollment Trend</p>	<ul style="list-style-type: none"> ● Strong = Fleming enrolment growth is outpacing system and is equal to or greater than 3% ● Moderate = Fleming enrolment growth is equivalent to system demand and is between 1.0 to 2.9% ● Weak = Fleming enrolment growth is less than the system demand and is less than 1%
Labour Market	<p>Includes projected employment rate growth based on a consolidation of various Ontario, Canadian, and US sources including HRSDC, Sector Council Reports US Bureau of Labour Statistics, and the MTCU Employment Profile.</p>	<ul style="list-style-type: none"> ● Strong = Between 5-6 positive labour market indicators ● Moderate = Between 3-5 positive labour market indicators ● Weak = Between 1-2 or no positive labour market indicators
Competitive Analysis	<p>Includes the number of actual colleges offering the program as well as the ratio of applications to acceptances at Fleming compared to other colleges and specific comment about Fleming's direct competitors where appropriate (Georgian, Sheridan, Seneca and Durham)</p> <p>Click Below to Access Full Source Document: Fall Conversion Report</p>	<ul style="list-style-type: none"> ● Strong = Fleming conversion ratio is greater than 2 below the system ● Moderate = Fleming conversion ratio is 1 above, below or equal to the system ● Weak = Fleming conversion ratio is greater than 2 above than the system
Financial Analysis	<p>Includes a review of Contribution to Overhead (CTO) for existing programs (2010-11)</p> <p>Click Below to Access Full Source Document: Costing Analysis</p>	<ul style="list-style-type: none"> ● Strong = CTO is greater than 35% ● Moderate = CTO is between 30 - 34% ● Weak = CTO is between 20 – 30% <p>No Contribution = 19% or less</p>

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Key Performance Indicators	<p>Includes KPI trends from the Key Performance Indicator Summary 5 Year Historical Overview KPI Data from Reporting Years 2008-2012.</p> <p>Click Below to Access Full Source Document: Key Performance Indicators</p>	<ul style="list-style-type: none">● Strong = Above system average in 6-7 indicators● Moderate = Above system average in 3-5 indicators● Weak = Above system average in 0-2 indicators.
Resource Analysis	<p>Requires school level assessment regarding space, technology, capital equipment and human resources. Recommendations from recent Program Review Reports included here</p>	

Key Research Findings

Geomatics Technician (50310)

Student Demand¹

• **WEAK**

The following information consists of OCAS yearly student fall registration data as well as a mean growth rate and average student registration for each program under these categories:

Diploma

- Fleming is the only college to offer this program
- Fleming has had an irregular growth rate, the mean growth rate is negative **(-5%)** and a good average registration over the past five years with **24 students**

Diploma

Program: 50310 - GEOMATICS TECHNICIAN														
	2007 2008 % Change (07-08)			2008 2009 % Change (08-09)			2009 2010 % Change (09-10)			2010 2011 % Change (10-11)			% Mean Growth Rate (07-11)	5 Year Average Reg. Students
FLEMING	24	23	-4	23	27	17	27	29	7	29	17	-41	-5	24
Total	24	23	-4	23	27	17	27	29	7	29	17	-41		

Key Research Findings

Labour Market

• **STRONG**

Employment Ontario

Not Available

HRSDC²

Mapping and Related Technologists and Technicians (NOC – 2255)

- Job Openings (2011/2020): **20,575**
- Job Seekers(2011/2020): **25,962**
- Post-Secondary Education Graduates: **28,845 (111%)**
- “Based on projections and considering that labour supply and demand in this occupation were balanced over the 2008-2010 period, it is expected that the number of job seekers will remain sufficient to fill the job openings over the 2011-2020 period. The majority of job openings will arise from retirements, despite a retirement rate slightly below the average for all occupations. Workers in this occupation are generally younger than those in other occupations. Expansion demand will continue to grow at the rate of economic activity. In spite of a slowdown in growth, the construction sector will continue to create several jobs in this occupation. However, the difficulties that persist in the manufacturing sector will continue to slow down growth, particularly for industrial designers. With regard to labour supply, the majority of job seekers will come from the school system.”

US Bureau of Labour

Surveying and Mapping Technicians (SOC – 17-3031)³

- Employment Growth (2010/2020):
 - **56,900 (2010) to 66,000(2020) Increase 16%**
- “Employment of surveying and mapping technicians is expected to grow 16 percent from 2010 to 2020, about as fast as the average for all occupations. Recent advancements in mapping technology have led to new uses for maps and a need for more of the data used to build maps. As a result, surveying and mapping technicians should have more work.”
- “The digital revolution in mapmaking has created a need to harmonize property maps made the traditional way, with maps based on data fed into a GIS. Owners of private property will need to hire surveyors and surveying technicians to gather data in the field.”

² "Technical Occupations In Architecture, Drafting, Surveying And Mapping (225)." *Human Resources and Skills Development Canada*. N.p., n.d. Web. 21 July 2012. <<http://www23.hrsdc.gc.ca/occupationsummarydetail.jsp?&tid=42>>.

³ Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Outlook Handbook, 2012-13 Edition*, Surveying and Mapping Technicians, on the Internet at <http://www.bls.gov/ooh/architecture-and-engineering/surveying-and-mapping-technicians.htm> (visited July 21, 2012).

Key Research Findings

- “Cities, towns, and counties are finding that the data gathered by surveying and mapping technicians are crucial in implementing systems integration, the process of putting onto one map all the information about wires, pipes, and other underground infrastructure. That way, a city, town, or county can upgrade the entire infrastructure a street at the same time, resulting in savings for the local government.”
- “The prevalence of smart phones and other mobile devices with Global Positioning System (GPS) technology has greatly increased the use of maps for finding businesses and other destinations. Surveying and mapping technicians will be needed to provide the data for these maps and to ensure that they are accurate.”

Cartographers and Photogrammetrists (SOC – 17-1021)⁴

- Employment Growth (2010/2020):
 - **13,800 (2010) to 16,900 (2020) Increase 22%**
- “Employment of cartographers and photogrammetrists is expected to grow 22 percent from 2010 to 2020, faster than the average for all occupations.”
- “Increasing use of maps for national security and local government planning will fuel most of the growth. Cartographers and photogrammetrists will be needed to ensure the reliability and accuracy of maps produced and updated.”
- “Cartographers are also being asked to incorporate into the maps they make the data gathered from social media and Internet technologies.”
- “In addition to openings from growth, job openings will arise from the need to replace workers who retire or leave the occupation. Many cartographers are approaching retirement age.”
- “Cartographers primarily will be needed to visualize spatial information and design the final presentation of information for clients.”
- “Photogrammetrists should have excellent opportunities, because of the limited number of college graduates receiving degrees in this field.”

⁴ Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Outlook Handbook, 2012-13 Edition*, Cartographers and Photogrammetrists, on the Internet at <http://www.bls.gov/ooh/architecture-and-engineering/cartographers-and-photogrammetrists.htm> (visited July 23, 2012).

Key Research Findings

Employment Profile⁵

In 2010-2011, **46.7%** of graduates were employed in a full time position which related to this program of study provincially

Civil					
Total Graduates:	1,754	Total Graduates in Survey:	1,241	Response Rate:	71.2%
<small>594 graduates were reported after the survey window had closed. While program information for these graduates has been included wherever possible, these graduates are not included in survey results, such as response rates.</small>					
Programs in Civil					
Programs	Duration	Total Grads	Total in Survey	Total in Labour Force	Colleges
Alternative (Sustainable) Energy Engineering Technology	3 Years	24	12	7	Lambton
Architecture – Project And Facility Management – Bachelor Of Applied Technology	4 Years	29	25	25	Conestoga
Building Construction Technician	2 Years	62	46	40	Algonquin, Canadore
Building Inspection Technician	2 Years	4	3	2	Northern
Civil Engineering Technician	2 Years	104	72	52	Cambrian, Loyalist, Mohawk, Sault, Seneca
Civil Engineering Technology	3 Years	448	332	267	Algonquin, Cambrian, Conestoga, Confederation, Fanshawe, Humber, La Cité, Loyalist, Mohawk, Northern, Seneca, St. Clair, St. Lawrence
Construction And Environment – Regulations And Compliance – Bachelor Of Applied Technology	4 Years	12	7	4	George Brown
Construction Craft Worker Foundations	1 Year	11	5	5	George Brown
Construction Engineering Technician	2 Years	262	177	118	Algonquin, Boreal, Fanshawe, George Brown, La Cité, Loyalist, Mohawk, Northern, Sault, St. Clair
Construction Engineering Technology	3 Years	248	168	143	Boreal, Conestoga, Fanshawe, George Brown, Niagara
Construction Management	Post Diploma	20	17	15	George Brown
Construction Science And Management – Bachelor Of Applied Technology	4 Years	31	21	19	George Brown
Construction Techniques	1 Year	137	105	53	Conestoga, Fanshawe, George Brown, Sault
Geographic Information System	Post Diploma	25	16	14	Algonquin
Geographic Information Systems	Post Diploma	8	7	7	Fanshawe
Geographic Information Systems – Cartographic Specialist	Post Diploma	60	42	34	Niagara, Sir Sandford Fleming
Geographic Information Systems Technician	2 Years	14	9	7	Fanshawe
Geomatics Technician	2 Years	20	15	12	Sir Sandford Fleming
Green Architecture	Post Diploma	17	9	9	Algonquin

⁵ "Employment Profile." Ontario. N.p., 2011. Web. 19 July 2012.
<http://www.tcu.gov.on.ca/pepg/audiences/colleges/serials/eprofile09-10/profile10.pdf>.

Key Research Findings

Civil

Programs in Civil (cont.)

Programs	Duration	Total Grads	Total in Survey	Total in Labour Force	Colleges
Masonry – Heritage And Traditional	2 Years	23	15	14	Algonquin, George Brown
Masonry Techniques	1 Year	5	2	1	Conestoga
Renovation Techniques	1 Year	159	115	97	Canadore, Georgian, Lambton, Loyalist, Niagara, Sir Sandford Fleming
Survey Technician	2 Years	6	5	3	Loyalist
Sustainable Building Design And Construction	1 Year	25	16	14	Sir Sandford Fleming

Summary of Survey Data

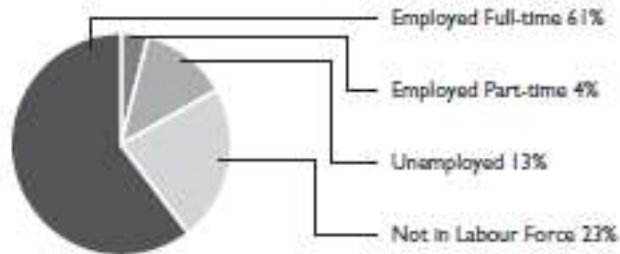
	Program Cluster	All Programs
Survey Population	1,241	50,622
Labour Force Participation	78%	74%
Employment Rate^a	84%	83%
Employed Part-time ^a	5%	18%
Employed Full-time ^a	79%	65%
Average Annual Earnings – Total	\$39,800	\$33,199
Average Annual Earnings – Female	\$38,213	\$31,897
Average Annual Earnings – Male	\$40,067	\$34,607
Graduate Satisfaction	78%	79%
Employer Satisfaction	91%	93%

a. As a percentage of graduates in the labour force.

Key Research Findings

Civil

Graduate Outcomes for Program Cluster (as a percentage of all respondents)



Top Five Industries of Employment

	#	%
Construction of Buildings	193	24.5%
Professional, Scientific and Technical Services	176	22.3%
Specialty Trade Contractors	113	14.3%
Heavy and Civil Engineering Construction	47	6.0%
Local, Municipal and Regional Public Administration	29	3.7%

Top Five Occupational Categories

	#	%
Construction Managers	80	10.1%
Civil Engineering Technologists and Technicians	72	9.1%
Carpenters	67	8.5%
Drafting Technologists and Technicians	42	5.3%
Construction Estimators	41	5.2%

Key Research Findings



Summary of Graduate Outcomes by Program

	Full-time Employed, Program Related		Full-time Employed, Program Unrelated		Part-time Employed, Program Related		Part-time Employed, Program Unrelated		Unemployed		Not in Labour Force	
	#	%	#	%	#	%	#	%	#	%	#	%
Alternative (Sustainable) Energy Engineering Technology	4	33.3	—	—	—	—	1	8.3	2	16.7	5	41.7
Architecture – Project And Facility Management – Bachelor Of Applied Technology	20	80.0	—	—	—	—	—	—	5	20.0	—	—
Building Construction Technician	24	52.2	8	17.4	1	2.2	—	—	7	15.2	6	13.0
Civil Engineering Technician	33	45.8	9	12.5	—	—	3	4.2	7	9.7	20	27.8
Civil Engineering Technology	195	58.7	25	7.5	2	0.6	4	1.2	41	12.3	65	19.6
Construction Craft Worker Foundations	1	20.0	1	20.0	—	—	1	20.0	2	40.0	—	—
Construction Engineering Technician	77	43.5	21	11.9	2	1.1	3	1.7	15	8.5	59	33.3
Construction Engineering Technology	106	63.1	15	8.9	1	0.6	3	1.8	18	10.7	25	14.9
Construction Management	7	41.2	1	5.9	—	—	1	5.9	6	35.3	2	11.8
Construction Science And Management – Bachelor Of Applied Technology	16	76.2	2	9.5	—	—	—	—	1	4.8	2	9.5
Construction Techniques	30	28.6	14	13.3	—	—	1	1.0	8	7.6	52	49.5
Geographic Information System	8	50.0	1	6.3	1	6.3	2	12.5	2	12.5	2	12.5
Geographic Information Systems	1	14.3	3	42.9	—	—	1	14.3	2	28.6	—	—
Geographic Information Systems – Cartographic Specialist	22	52.4	2	4.8	—	—	1	2.4	9	21.4	8	19.0
Geographic Information Systems Technician	6	66.7	1	11.1	—	—	—	—	—	—	2	22.2
Geomatics Technician	7	46.7	3	20.0	1	6.7	—	—	1	6.7	3	20.0
Green Architecture	3	33.3	4	44.4	—	—	—	—	2	22.2	—	—
Masonry – Heritage And Traditional	7	46.7	1	6.7	—	—	2	13.3	4	26.7	1	6.7
Renovation Techniques	49	42.6	19	16.5	4	3.5	8	7.0	17	14.8	18	15.7
Sustainable Building Design And Construction	7	43.8	—	—	—	—	2	12.5	5	31.3	2	12.5
All Programs In Cluster*	623	50.9	138	10.6	12	1.0	33	2.7	154	12.6	272	22.2

* Does not include 4 programs with fewer than 5 graduates in the labour force.

Key Research Findings

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Earnings of Full-time Employed Participants

Program	Average – Females	Average – Males	Median – Females	Median – Males	Average for Program	Median for Program
Alternative (Sustainable) Energy Engineering Technology	–	–	–	–	–	–
Architecture – Project And Facility Management – Bachelor Of Applied Technology	–	\$41,555	–	\$42,000	\$42,059	\$42,000
Building Construction Technician	–	\$29,180	–	\$28,679	\$29,163	\$28,679
Civil Engineering Technician	–	\$41,885	–	\$37,771	\$41,064	\$37,271
Civil Engineering Technology	\$40,903	\$43,119	\$40,857	\$41,714	\$42,899	\$41,714
Construction Craft Worker Foundations	–	–	–	–	–	–
Construction Engineering Technician	–	\$39,219	–	\$36,292	\$38,956	\$35,770
Construction Engineering Technology	\$36,618	\$43,000	\$36,271	\$41,149	\$42,536	\$40,679
Construction Management	–	\$58,464	–	\$60,000	\$58,464	\$60,000
Construction Science And Management – Bachelor Of Applied Technology	–	\$44,106	–	\$46,500	\$44,165	\$46,000
Construction Techniques	–	\$31,985	–	\$28,157	\$31,587	\$28,157
Geographic Information System	–	\$39,081	–	\$43,000	\$44,926	\$48,142
Geographic Information Systems	–	–	–	–	–	–
Geographic Information Systems – Cartographic Specialist	\$44,659	\$46,311	\$46,929	\$47,000	\$45,733	\$46,964
Geographic Information Systems Technician	–	\$35,960	–	\$31,286	\$34,967	\$31,286
Geomatics Technician	–	\$36,879	–	\$35,457	\$36,879	\$35,457
Green Architecture	–	\$48,041	–	\$45,000	\$45,867	\$43,000
Masonry – Heritage And Traditional	–	\$37,081	–	\$34,414	\$37,081	\$34,414
Renovation Techniques	\$28,072	\$30,790	\$25,029	\$29,600	\$30,560	\$29,200
Sustainable Building Design And Construction	–	–	–	–	\$33,295	\$31,286
All Programs in Cluster*	\$38,122	\$40,099	\$39,629	\$40,000	\$39,913	\$40,000

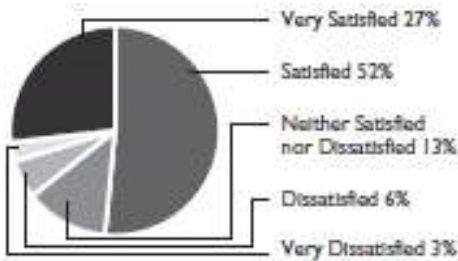
* Does not include 4 programs with fewer than 5 graduates in the labour force.

Key Research Findings

Civil

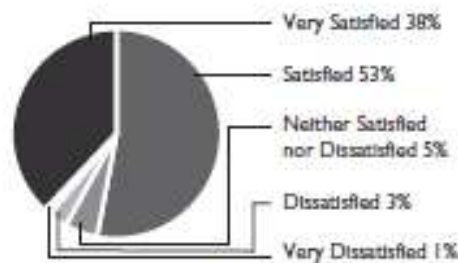
Program Cluster Satisfaction

Graduate Satisfaction with the usefulness of his/her college education in achieving his/her goals after graduation.*



* 1,187 graduates participated in this question.

Employer Satisfaction with employee overall college preparation for the type of work he/she was doing.*



* 203 employers participated in this survey.

Program Cluster Historical Data

	00-01 Grads	01-02 Grads	02-03 Grads	03-04 Grads	04-05 Grads	05-06 Grads	06-07 Grads	07-08 Grads	08-09 Grads	09-10 Grads
Percentage Employed	89.2%	87.8%	89.2%	89.7%	89.2%	91.9%	92.5%	92.0%	85.8%	83.8%
Percentage Employed Full-time	85.8%	84.1%	85.4%	86.5%	85.2%	88.3%	88.8%	87.3%	78.2%	78.9%
Percentage Employed Full-time Related Jobs	75.0%	71.5%	74.0%	72.7%	74.2%	75.3%	78.2%	76.9%	65.5%	65.1%
Average Annual Salary Full-time Related Jobs	\$33,600	\$33,675	\$35,107	\$37,379	\$36,165	\$37,915	\$38,792	\$40,824	\$40,676	\$41,303

Key Research Findings

Working in Canada⁶

Mapping and Related Technologists and Technicians (NOC – 2255)

- Ontario Rating: **Not Available**

- **Wage Range by Region:**

Location	Wage (\$/hr)		
	Low	Median	High
Ontario	13.94	23.08	38.46
Hamilton--Niagara Peninsula Region	17.00	22.00	38.46
Kingston - Pembroke Region	13.94	23.08	38.46
Kitchener--Waterloo--Barrie Region	13.00	24.04	41.58
London Region	13.94	23.08	38.46
Muskoka-Kawartha Region	13.94	23.08	38.46
Northeast Region	17.98	22.03	32.21
Northwest Region	N/A	N/A	N/A
Ottawa Region	13.94	23.08	38.46
Stratford--Bruce Peninsula Region	N/A	N/A	N/A
Toronto Region	13.00	22.12	38.97
Windsor-Sarnia Region	N/A	N/A	N/A

Competitive Analysis⁷

- **STRONG**

The following information consists of OCAS yearly fall application and registration data as well as a conversion ratio for each program under this category:

Diploma

- Fleming has experienced a fairly high conversion ratio of **3:1** throughout the past five years

Diploma

Program: 50310 - GEOMATICS TECHNICIAN												
	App. 2007	Reg. 2007	Conversion Ratio	App. 2008	Reg. 2008	Conversion Ratio	App. 2009	Reg. 2009	Conversion Ratio	App. 2010	Reg. 2010	Conversion Ratio
FLEMING	69	24	3:1	74	23	3:1	70	27	3:1	88	29	3:1
Total	69	24	3:1	74	23	3:1	70	27	3:1	88	29	3:1

⁶ "Mapping and Related Technologists and Technicians (NOC 2255)." *Working in Canada*. N.p., n.d. Web. 21 July 2012.
<<http://www.workingincanada.gc.ca/report-eng.do?area=8792&lang=eng&noc=2255&action=final@ionKeyword=Peterborough%2C+Ontario&s=1&source=0&titleKeyword=geographic+information+systems+%28GIS%29+technic>>.

⁷ Application data obtained from OCAS College Count Cube October 19, 2011 Registration data obtained from the Program Counts by Applicant Type Report (RPT0050P) in the OCAS Reporting and Analytics Cube December 7, 2011. Some programs/colleges may not be included because they were missing MCU codes in the OCAS dataset Prepared by Fleming Data Research (07-2012)

Key Research Findings

Financial Analysis

NO CONTRIBUTION

Source: Program Costing Analysis 2010/2011

- Contribution to Overhead: -25.0%
- Program Weight: 1.00
- Funding Unit: 2.00

Key Performance Indicators

• WEAK

Source: Key Performance Indicator Summary 5 Year Historical Overview KPI Data from Reporting Years 2008-2012

KPI1-Graduation Rate	+5% above system
KPI2-Working	-1% below system
KPI3-Working Related	+9% above system
KPI4-Grad. Satisfaction	-9% below system
KPI8-Student Satisfaction-Learning	-7% below system
KPI9-Student Satisfaction- Teachers	Even with system
KPI11-Grad. Satisfaction-Program	-8% below system

Resource Analysis

Equipment

Staffing

Space