



CANADIAN ENGINEERS FOR TOMORROW:
Trends in Engineering Enrolment and
Degrees Awarded 2007-2011

The road to a

P.ENG.*

begins with the right education

Canadian Engineers for Tomorrow: Trends in Engineering Enrolment and Degrees Awarded is produced and published by Engineers Canada.

With the objective of monitoring the availability of engineering resources, Engineers Canada has collected national data on enrolment and degrees awarded since the 1970s, and has published the research findings through various documents, technical reports and research papers.

Canadian Engineers for Tomorrow: Trends in Engineering Enrolment and Degrees Awarded contains data collected from universities on accredited engineering programs across Canada, as well as analysis and interpretation of this data.

Engineers Canada strives to ensure accuracy and consistency of all information presented. However, due to variations in survey methodology, interpretation and student classifications at universities across the country, the volunteers and staff of Engineers Canada cannot guarantee the accuracy of data provided by the universities.

The reader is advised that the information presented herein, including the analyses and assessments of the data, does not represent an endorsement by Engineers Canada of any particular university, or the likelihood of a person obtaining employment in any particular engineering discipline.

Students of engineering are reminded that the accumulation of skills within a particular field of engineering, along with strong communications, organizational, and leadership abilities are essential to a progressive career in engineering.

Canadian Engineers for Tomorrow:

Trends in Engineering Enrolment and Degrees Awarded 2007-2011

Engineers Canada is the national organization of the 12 provincial and territorial associations that regulate the profession of engineering in Canada and license the country's more than 250,000 members of the engineering profession.

Established in 1936, Engineers Canada serves the associations, which are its constituent and sole members, through the delivery of national programs that ensure the highest standards of engineering education, professional qualifications and ethical conduct. Engineers Canada is the voice of its constituent members in national and international affairs, and promotes greater understanding of the nature, role and contribution of engineering to society.

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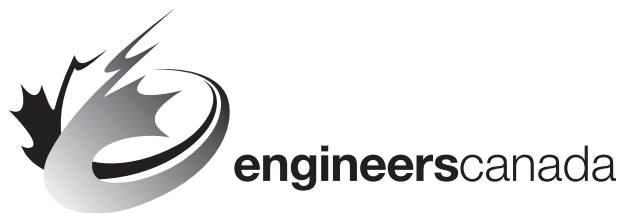
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Canadian Engineers for Tomorrow:

Trends in Engineering Enrolment
and Degrees Awarded 2007-2011



Prepared by: Prism Economics and Analysis
Dec 2012

Message from the Chief Executive Officer

Engineers Canada is pleased to publish its summary of trends in engineering education in Canada. This report includes results for all academic terms from the calendar years 2007 through 2011.

Engineering institutions continue to report strong growth in the number of students pursuing an engineering education. Total undergraduate enrolment in accredited programs rose to 66,057; a 4.6 percent increase from the previous year. Postgraduate enrolment for both master's and doctoral students also reached a peak of 21,987 in 2011, increasing 4.3 percent from 2010.

Canadian programs are a popular choice for international engineering students. At the undergraduate level, the number of visa students rose 64 percent since 2007, accounting for 13.2 percent of total undergraduate enrolment. The number of visa post-graduate students has also grown by an astounding 54.5 percent since 2007, accounting for over one-third of graduate student enrolment in 2011.

In 2011, female and male undergraduate enrolments grew by 4.4 percent and 4.6 percent respectively. The proportion of women enrolled in undergraduate engineering programs remained at 17.7 percent in 2011.

It is encouraging to report that the number of undergraduate degrees awarded continued to grow with 11,703 degrees awarded in 2011, a moderate increase of 2.2 percent from the previous year.

Finally, this report examines the globalization and internationalization of engineering education in the faculty, undergraduate and graduate student population. The 39 participating institutions revealed that two-thirds of undergraduate faculties and more than half of graduate faculties have formal arrangements with engineering faculties outside of Canada. Countries with the largest cross collaboration connections include France, China, Germany and Mexico. Programs in Quebec are national leaders.

Altogether, the report highlights 2011 as a stable year.



Marie Carter, FEC, P.Eng.

INTERIM CHIEF EXECUTIVE OFFICER / CHIEF OPERATING OFFICER
ENGINEERS CANADA

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Acknowledgements

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Foreword

Each year, Engineers Canada gathers data on student enrolment and graduations from Canada's universities. This report analyzes trends in engineering student enrolment within accredited engineering programs across the nation.

Understanding these trends enables Engineers Canada and other members of the profession to:

- Compare patterns in the changing number of students who enroll in and graduate from the various engineering programs offered in the provinces;
- Assess the number of women and visa students who are pursuing engineering education; and
- Exchange pertinent information about similar and distinctly different trends across disciplines and institutions.

Highlights

The 2011 trends in enrolment and degrees awarded capture the following highlights:

- After robust growth in 2010, undergraduate and post graduate enrolment and graduations experienced moderate growth in 2011; master's degrees awarded rose 9.2 percent from the previous year and have risen 30.8 percent since 2007;
- Important variances in growth by program; civil engineering continues to outpace undergraduate enrolment in electrical engineering. Furthermore, enrolments in computer and industrial and manufacturing engineering increased after consecutive years of decline since 2007. For post-graduate enrolment, computer engineering is making a comeback in master's enrolment while civil engineering experienced a larger rise in doctoral enrolment in 2011;
- The proportion of women enrolled and graduations is holding steady with minimal growth from the previous year;
- The number of women enrolled in undergraduate engineering programs has reached a new record in 2011; and
- Enrolment of visa students continues to grow faster than for Canadian students; 2011 saw enrolment in Canadian full-time graduate students decline.

A special survey of 39 universities gathered answers to questions about the internationalization and globalization of engineering education. The survey reports that:

- More than two-thirds of undergraduate engineering faculties and more than half of graduate faculties have formal arrangements with engineering faculties outside of Canadian borders. The most popular countries for these arrangements are: France, China, Germany and Mexico. These countries were also the top destinations for the exchange of engineering faculty members;
- Although participation with foreign schools is prevalent, only six out of the 39 universities surveyed indicated they had formally mandated committees that introduce global aspects into engineering education;
- There are more foreign undergraduate engineering students completing their studies in Canada than Canadian students completing engineering studies abroad; and
- Currently, undergraduate faculties house more foreign exchange students (1,300) than graduate engineering faculties (80).

ENGINEERING*

Visions of things to come



Undergraduate Student Enrolment and Degrees Awarded

FOREWORD

In 2011, 49 universities reported their enrolment, staffing, program and graduation information.

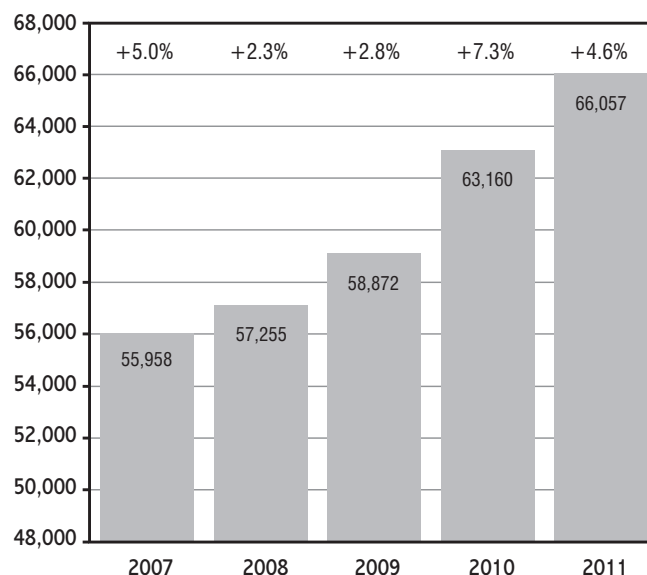
Enrolment in accredited undergraduate engineering programs across Canada reached 66,057 in 2011, an increase of 4.6 percent from 2010. The provinces with the largest proportion of enrolments continue to be (in descending order): Ontario, Quebec, Alberta and British Columbia. After strong back-to-back growth in 2009 and 2010, Ontario's enrolment rose 6 percent in 2011 to 28,185. British Columbia experienced a solid rebound in 2010 with a 33 percent year-over-year increase from 2009 and more moderate gains in 2011 with a 6 percent increase totalling 6,296. Nova Scotia also showed positive enrolment growth in 2010 and 2011 with year-over-year increases of 10 percent each year.

Mechanical engineering continued to attract the largest share of undergraduate enrolment, followed by civil and electrical engineering. Enrolment in civil engineering, which has shown exceptional gains since 2006, exceeded electrical again in 2011. Enrolments in computer and industrial and manufacturing engineering saw stronger results; reversing declines since 2007. The positive enrolment numbers grew by 5 and 6 percent, respectively.

UNDERGRADUATE STUDENT ENROLMENT

The 7 percent gain in full time equivalent (FTE) enrolment experienced in 2010 continues to represent the largest increase in the last five years. Between 2007 and 2011, total undergraduate enrolment increased by 24 percent. Chart 1.1 below showcases the enrolment figures and annual percent changes from 2007 onward¹. Appendix A contains more detailed data tabulations that correspond to each chart in the report. See, for example, Table U.1.1 for the national undergraduate details in Appendix A.

CHART 1.1 – UNDERGRADUATE ENROLMENT (ACCREDITED PROGRAMS ONLY) (FTE)

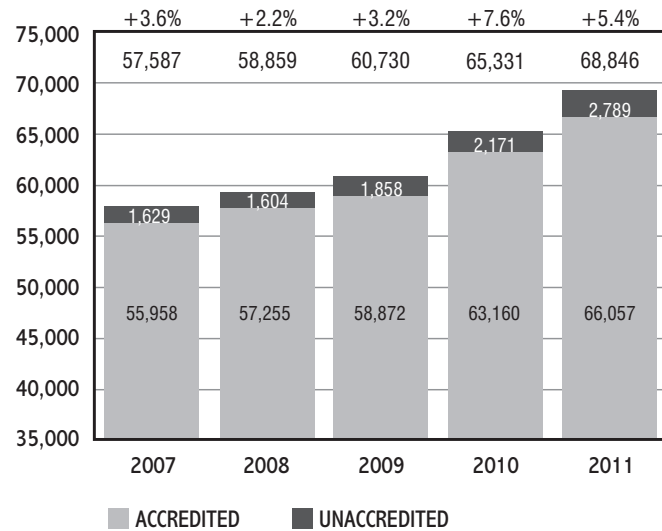


¹ Due to rounding, figures in the charts may not exactly add to totals shown.

Chart 1.2 adds enrolment in yet-to-be accredited programs to the totals. These unaccredited enrolments fluctuate between 1600 and 2700 each year and do not have a big impact on the totals or trends.

These yet-to-be accredited programs include new engineering faculties, expansion of existing schools into other traditional disciplines, and development of more specialized undergraduate programs at existing schools, such as mechanics, energy systems, and biomedical engineering. As can be seen in Chart 1.2, when enrolment in yet-to-be accredited programs is combined with that of accredited programs, the total number of engineering undergraduate students reported across Canada is 68,846, up 5.4 percent from the previous year.

CHART 1.2 – UNDERGRADUATE ENROLMENT (ALL PROGRAMS) (FTE)

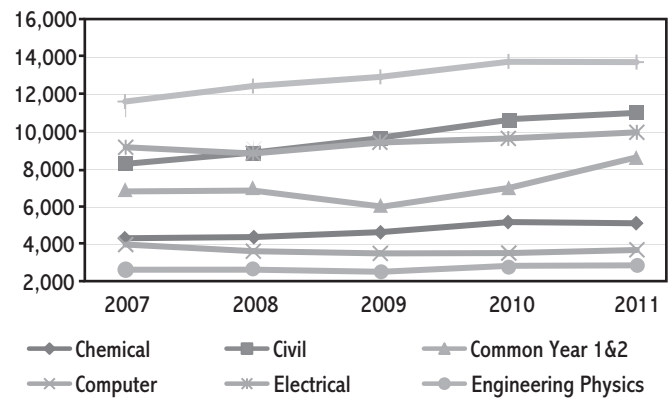


UNDERGRADUATE STUDENT ENROLMENT BY PROGRAM²

Mechanical engineering continues to lead in undergraduate enrolments, with 13,628 FTEs reported in 2011 (see Table U.1.1), a slight drop (-0.25 percent) from the previous year's enrolment number of 13,662. The program with the second largest enrolment is civil engineering, which has shown the strongest gains since 2006 relative to the other programs. There were 10,987 FTEs reported for 2011, a 3.6 percent increase from the previous year, and a sizeable 32 percent increase from 2007. Enrolment in electrical engineering has been outpaced by civil engineering since 2008 and electrical remains in third place in terms of enrolment in 2010 and 2011.

Although enrolment growth was positive for electrical it was marginal in contrast to the other programs. In 2011 there were 9,903 FTEs, a 3.3 percent increase from the previous year, and an 8.6 percent increase from 2007. As illustrated in Chart 1.3, enrolment in chemical engineering has been growing steadily throughout the years but dropped slightly in 2011, totalling 5,086 FTEs. Aside from the 2 percent drop in enrolment, chemical engineering experienced a gain of 20 percent since 2007. In contrast, enrolment in computer engineering edged upwards in 2011, growing by 4.5 percent to 3,655 FTEs. Computer engineering enrolment has declined by 7.2 percent since 2007.

CHART 1.3 – UNDERGRADUATE ENROLMENT BY PROGRAM (1) (FTE)



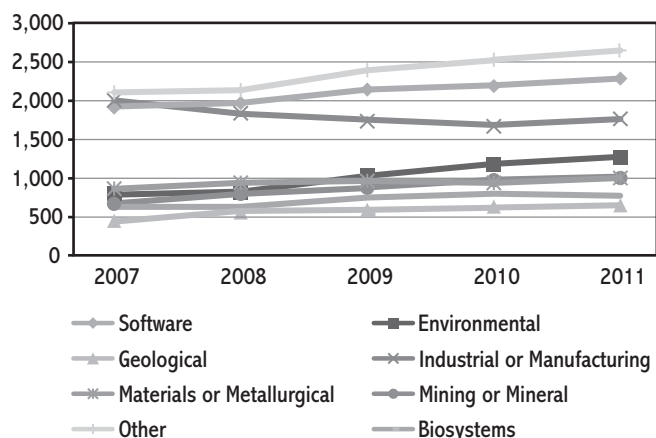
As illustrated in Chart 1.4, enrolment in software engineering continued to grow into 2011. After a period of slower growth from 2006 to 2008, enrolment rose more in 2009, and has been steadily increasing to 2,286 FTEs in 2011, a 4 percent increase from the previous year. Enrolment in industrial and manufacturing engineering experienced a rebound in 2011 with a 6.3 percent increase, or 1,766 FTEs. Since 2007, industrial and manufacturing enrolment shrank by 11.4 percent.

The following programs have lower enrolment but sustained growth rates in 2010 and 2011: environmental engineering (8.5 percent, to 1240 FTEs); materials or metallurgical (7.2 percent, to 994); mining or mineral and geological (6.1 percent, to 630 FTEs). Biosystems engineering experienced a small dip in 2011 enrolment, down 3.8 percent to 754 from 784 in 2010.

Environmental engineering and mining or mineral engineering stand-out for their exceptional growth, expanding by 66.2 percent and 54.1 percent, respectively, from 2007-2011.

² This and all following sections refer to enrolment in *currently* accredited programs only.

CHART 1.4 – UNDERGRADUATE ENROLMENT BY PROGRAM (2) (FTE)



TRENDS IN UNDERGRADUATE STUDENT ENROLMENT BY PROVINCE

Ontario, Quebec, Alberta and British Columbia, in descending order, have the highest proportion of undergraduate engineering students. Chart 1.5 tracks the enrolment rates across the four provinces. Enrolment in Ontario experienced back-to-back strong years in 2009 and 2010 with growths of 7.7 and 7.4 percent respectively, dipping slightly to 5.8 percent in 2011 totalling 28,185 FTEs (see Table U.2.1). In Quebec, enrolment continues to grow at a slower rate. After a peak growth of 8.3 percent from 2006-2007, growth dropped to 0.2 percent in 2009 and edged up to 2.4 percent in 2011, totalling 16,601 FTEs. British Columbia witnessed the greatest gains in 2010 relative to the other provinces. After experiencing an 8.6 percent decline in enrolment in 2009, enrolment rebounded to the highest level seen in years, increasing by 33.1 percent in 2010 (to 5,948 FTEs)³. Enrolment growth in 2011 was more moderate at 5.8 percent, totalling 6,296 FTEs.

The national enrolment growth rate from 2007-2011 was 18 percent. Due to the jump in enrolment in 2010, British Columbia experienced the greatest gains with 37.8 percent while Ontario also exceeded the national average with 22.6 percent growth. Alberta and Quebec stood below the national average growing 10.5 and 7.6 percent respectively.

CHART 1.5 – UNDERGRADUATE ENROLMENT BY PROVINCE (1) (FTE)

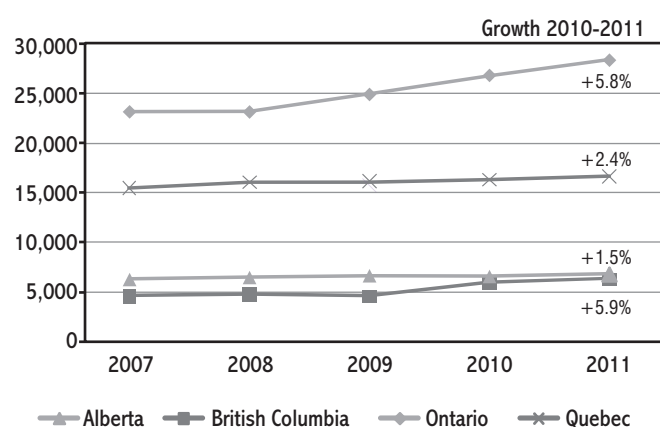
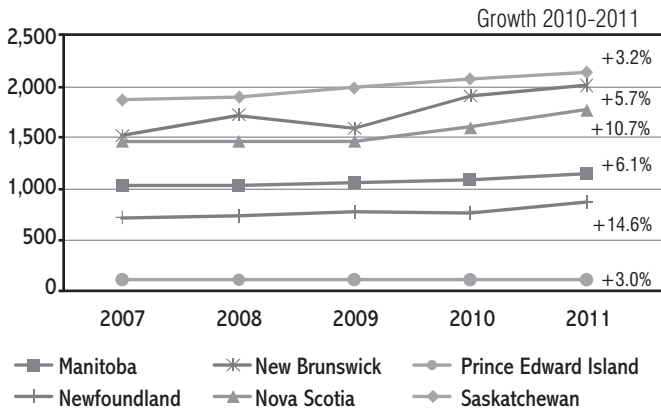


Chart 1.6 depicts enrolment trends for provinces with small numbers of engineering students. Saskatchewan continues to have the most engineering students among this group, with 2,152 FTEs reported for 2011, up 4.3 percent from the previous year. New Brunswick rebounded with strong enrolment growth in 2010, after experiencing a decline the year prior. Enrolment grew to 2,018 FTEs in 2011; a 5.7 percent rise, a positive turnaround after the decline of 7.9 percent witnessed in 2009. Nova Scotia, reported the greatest growth seen in years. After reported declines of 0.6 percent between 2007 and 2009, enrolment increased by 10.7 percent from 2010 to 2011 (to 1,777 FTEs). Newfoundland and Labrador, after showing strong gains in 2009, reported a slight decline of 3.2 percent (to 762 FTEs) in 2010 but rebounded strongly in 2011 with growth of 14.6 percent. Enrolment growth in Manitoba has been steadily increasing since 2009 with 6.1 percent growth reported in 2011 totalling 1,154 FTEs. Prince Edward Island experienced growth in 2011 (3 percent) for the first time since 2007.

With the exception of Prince Edward Island, the smaller provinces reported gains in enrolment across the 2007-2011 periods. During that time, New Brunswick, Nova Scotia and Newfoundland experienced gains above the national average, growing 32.6, 20.9 and 20.4 percent respectively. Prince Edward Island, witnessed a drop by 3.7 percent. Saskatchewan and Manitoba saw modest gains growing at 14.4 and 12.3 percent.

³ There are two reasons for the extraordinary growth in British Columbia enrolment in 2010. First, the University of British Columbia changed its reporting basis to meet the 2006 Engineering Canada convention and, second, the British Columbia Institute of Technology and the University of British Columbia-Okanagan reported new programs.

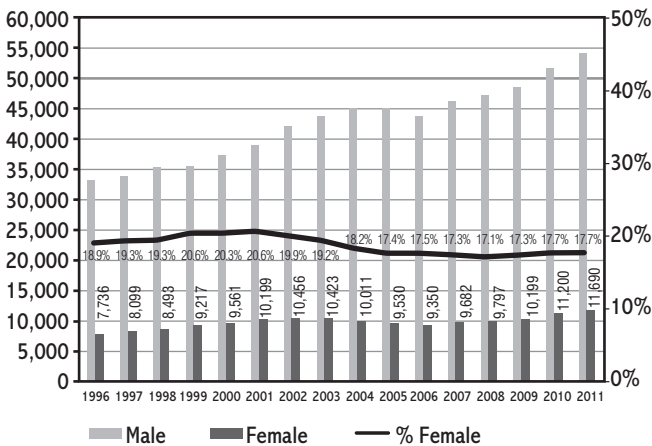
CHART 1.6 – UNDERGRADUATE ENROLMENT BY PROVINCE (2) (FTE)



FEMALE UNDERGRADUATE ENROLMENT

In 2011, 11,690 female undergraduates were studying engineering in accredited Canadian programs; 17.7 percent of total enrolment (see Table U.1.2 in Appendix A). Female enrolment reached a record high level in 2011, passing the 10,456 peak reached in 2002. In 2009 and 2010, enrolment growth among females surpassed the male growth rate – a pattern not seen since 2001. 2010 saw female and male undergraduate enrolments growing by 9.8 percent and 6.8 percent respectively. In 2011 the female growth rate (4.4 percent) edged slightly below the male growth rate (4.6 percent). Female enrolment reached a peak of 20.6 percent of total enrolment in 2001 and has fluctuated between 17 and 19 percent for the greater part of the decade. Chart 1.7 tracks these female enrolment trends.

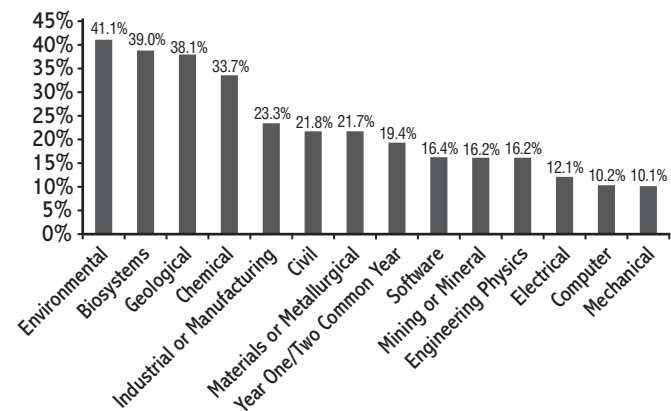
CHART 1.7 – UNDERGRADUATE ENROLMENT BY GENDER (FTE)*



* FTEs are reported since 2006 and full-time students only prior to 2006.

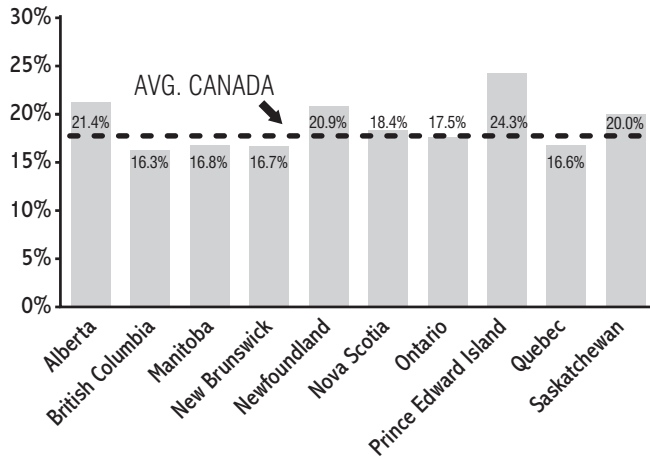
There are wide variations in female participation across programs. Over the past several years female students have been best represented in: environmental (41.1 percent), biosystems (39 percent), geological (38.1 percent) and chemical engineering (33.7 percent), (see Chart 1.7a and Tables U.1.1 and U.1.3 in Appendix A). A second group of programs report female enrolment above 20 percent: industrial/manufacturing engineering (23.3 percent), civil engineering (21.8 percent) and materials/metallurgical (21.7 percent). The lowest proportion of female enrolment was reported for electrical engineering (12.1 percent), computer engineering (10.2 percent) and mechanical engineering (10.1 percent).

CHART 1.7A – UNDERGRADUATE ENROLMENT OF FEMALES BY PROGRAM, 2011 (FTE)



In 2011, the highest proportion of female students was reported in Prince Edward Island (24.3 percent) and Alberta (21.4 percent). Newfoundland slipped to third highest at 20.9 percent (see Chart 1.7b and Table U.2.2 in Appendix A). The percentage of female students in Saskatchewan (20 percent), and Nova Scotia (18.4 percent) were also above the Canadian average of 17.7. Female representation in Ontario dropped slightly below the national average in 2011 to 17.5 percent. Alongside Ontario, Manitoba (16.8 percent), New Brunswick (16.7 percent) and Quebec (16.6 percent) reported female enrolment below the Canadian average with British Columbia having the lowest at 16.3 percent.

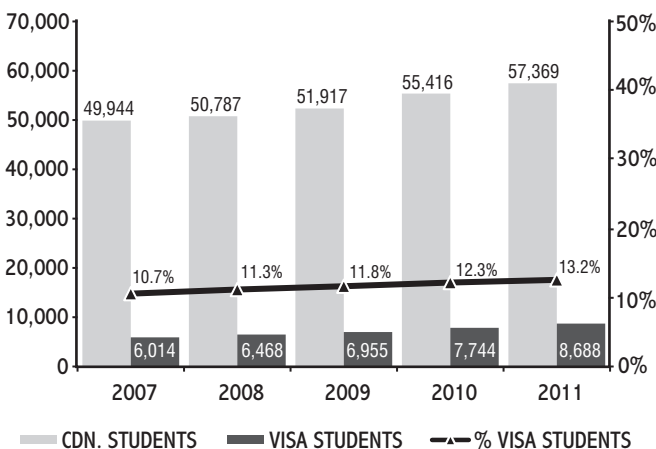
CHART 1.7B – UNDERGRADUATE ENROLMENT OF FEMALES BY PROVINCE, 2011 (FTE)



UNDERGRADUATE ENROLMENT OF INTERNATIONAL (VISA) STUDENTS

The proportion of international students attending accredited engineering programs continues to rise. Chart 1.8 tracks the proportion of visa students in 2011: 13.2 percent of total undergraduate enrolment (8,688 visa students). Since 2007, the number of visa students has risen an impressive 64 percent, three times faster than for Canadian students (see Table U.2.3).

CHART 1.8 – UNDERGRADUATE ENROLMENT OF VISA STUDENTS (FTE)



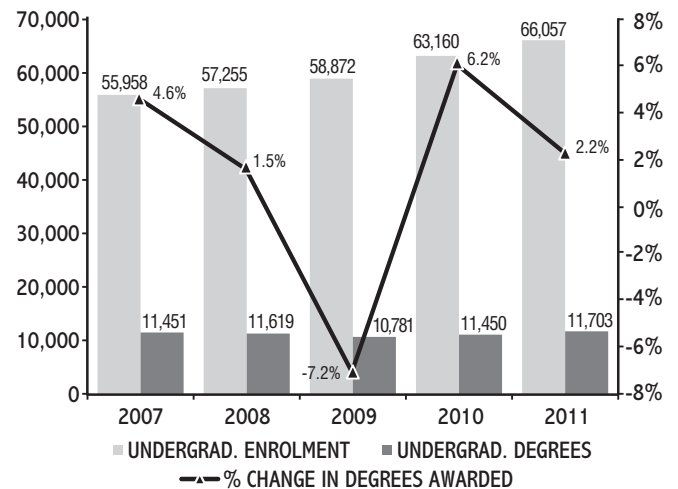
Ontario, Quebec, British Columbia and Alberta absorbed the majority of visa student enrolment in 2011. Of these four provinces, Quebec reported the largest proportion of visa student enrolment (13.8 percent), followed by Ontario and British Columbia both at 12.1 percent and Alberta at 9.5 percent.

Among the other provinces, New Brunswick continues to report the highest proportion of visa students; the proportion shot up 12.3 percentage points from the previous year to 30.3 percent in 2011. Nova Scotia and Saskatchewan followed with 17.9 percent each and Manitoba reported 12.9 percent. Since 2010, Prince Edward Island continues to experience visa students in double-digit proportions; 2010 saw 14 percent while 2011 experienced a slight decrease to 11.7 percent.

UNDERGRADUATE DEGREES AWARDED

A total of 11,703 undergraduate degrees in engineering were awarded in 2011, an increase of 2.2 percent from the year before (see Chart 1.9 and Table UD.1.1 in Appendix A). Since 2009, growth in degrees awarded has been rising⁴.

CHART 1.9 – UNDERGRADUATE ENROLMENT (FTE) AND DEGREES AWARDED (ACCREDITED PROGRAMS ONLY)

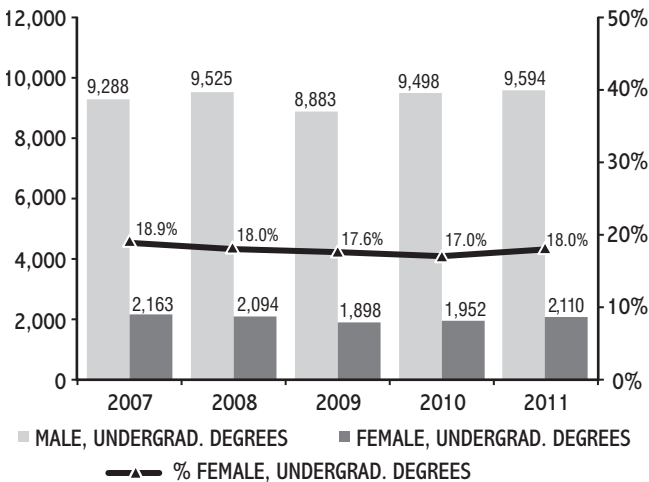


⁴ The decline in 2009 may have been a result of the 'double cohort' of Ontario high school students who began to enter university in the fall of 2003. The double cohort comprised graduating students from both the last of the discontinued Ontario Academic Credit (OAC) programs and the first of the "Grade 12" university-preparation programs across Ontario.

In 2011, mechanical engineering remained the program in which the most undergraduate degrees were awarded, with 2,976. Civil engineering (2,191) surpassed electrical engineering (2,050), while chemical (1,158) took fourth place. Of these top four, civil and chemical engineering reported an increase in degrees awarded with 13.9 percent and 1.1 percent respectively. Mechanical and electrical posted small declines of 0.2 percent and 2.3 percent. The program with the largest increase in undergraduate degrees awarded in 2011 was environmental with a 30.2 percent increase, followed by civil engineering with an increase of 13.9 percent. The three disciplines that experienced the worst year-over-year declines were industrial or manufacturing (-10.5 percent), computer engineering (-13.8 percent) and engineering physics (-15.3 percent).

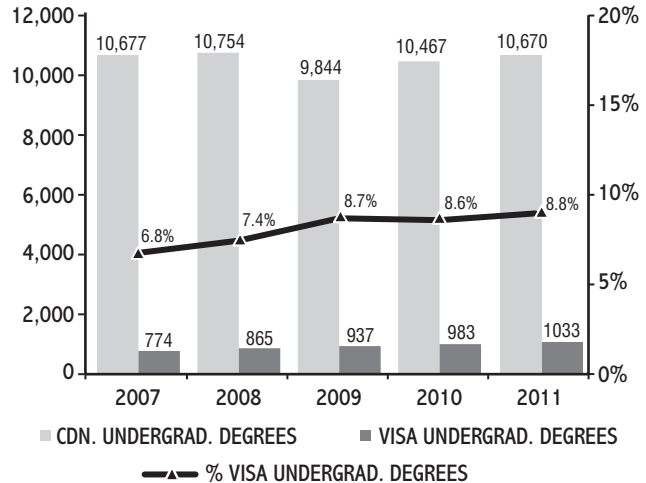
The number of undergraduate engineering degrees awarded to females increased by 8.1 percent in 2011 from the previous year, totalling 2,110 (see Table UD.1.2). Males saw a much smaller increase of one percent, totalling 9,594 degrees awarded in 2011. Since 2007, the number of degrees awarded to women declined by 2.5 percent, however 2010 marked the first rise in absolute numbers witnessed in the past few years with continued growth in 2011. In direct contrast, the number awarded to men, since 2007, grew by 3.3 percent. As seen in Chart 1.9a, females were awarded 18 percent of all undergraduate engineering degrees in 2011, compared to the high of 19.4 percent in 2006.

CHART 1.9A– UNDERGRADUATE ENROLMENT AND DEGREES AWARDED BY GENDER (ACCREDITED PROGRAMS ONLY)



The number of undergraduate degrees awarded to international students in 2011 was 1,033, an increase of 5.1 percent over 2010, and a substantial increase of 33.5 percent since 2007 (see Table UD.2.3 in Appendix A). As illustrated in Chart 1.9b, degrees awarded to international students comprised 8.8 percent of the total in 2011, compared to 6.8 percent in 2007.

CHART 1.9B– UNDERGRADUATE ENROLMENT (FTE) AND DEGREES AWARDED BY VISA STUDENTS (ACCREDITED PROGRAMS ONLY)



Promoting high standards and
mobility for the Canadian

ENGINEER*



Post-Graduate Enrolment and Degrees Awarded

FOREWORD

Total post-graduate enrolment of both full-and-part-time students grew by 4.3 percent in 2011, to a total of 21,987 master's and doctoral students across Canada. Growth in master's students in 2011 was slightly higher compared to doctoral students, with a growth rate of 5.1 percent versus three percent.

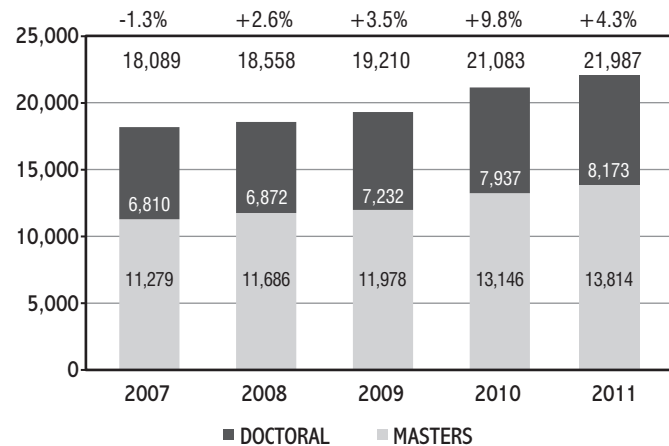
The proportion of engineering graduate students who are female has risen slowly from 2006, accounting for 21.7 percent of enrolments by 2011, a total of 4,327.

The overall growth in post-graduate enrolment in Canadian engineering programs continues to be linked to the rise of international students. The number of visa graduate students increased by 54.5 percent since 2007, totalling 8,311 FTEs. This far outpaces the growth of Canadian citizens or landed immigrants, which increased by 4.5 percent to 11,658 FTEs during the same period. International students accounted for 41.6 percent of graduate student enrolment in engineering in 2011, a proportion that has been increasing steadily.

NUMBER OF GRADUATE STUDENTS

There were 21,987 graduate students enrolled in master's or doctoral programs in engineering across Canada in 2011⁵. As shown in Chart 2.1⁶, 2010 experienced sizeable growth at 9.8 percent while 2011 encountered a more moderate rate of 4.3 percent. Graduate enrolment declined in 2007, but master's and doctoral enrolments have been growing since that time. 2011 saw increases of 5.1 percent and three percent respectively. In 2010, master's and doctoral enrolments grew by 9.8 percent and 9.7 percent respectively (see Tables G1.1 through G1.4 in Appendix A).

CHART 2.1 – NUMBER OF GRADUATE STUDENTS BY LEVEL



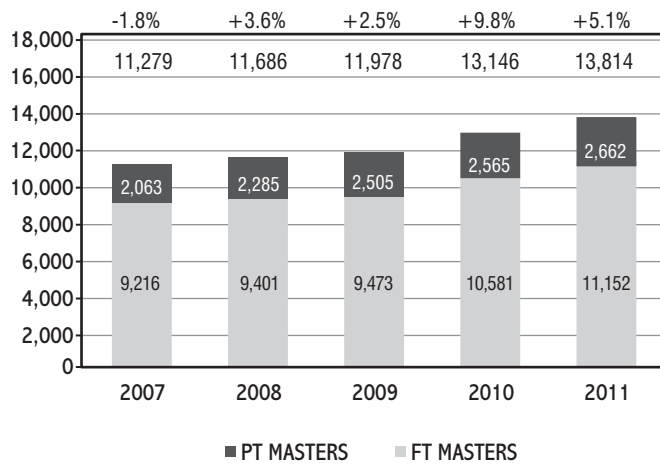
MASTER'S STUDENTS

Although the proportion of part-time master's students is relatively small (Chart 2.2), enrolment has been increasing since 2007 reaching 2,662 in 2011 (see Table G.1.3 in Appendix A). Full-time master's enrolment grew at a faster rate in comparison to past years, increasing by 5.4 percent in 2011 and 11.7 percent in 2010; whereas in 2009 and 2008, the increase was only 0.8 percent and 2 percent respectively (see Table G.1.1 in Appendix A).

⁵ These figures represent counts of the actual number of students, whether studying full or part-time, and are substantially larger than enrolment levels reported as full-time equivalents.

⁶ Due to rounding, figures in this section may not exactly add to totals shown.

CHART 2.2 – NUMBER OF MASTER'S STUDENTS BY COURSE LOAD

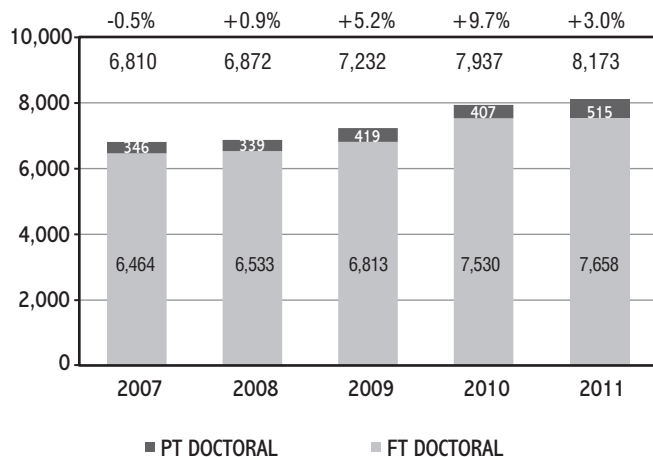


In absolute terms the number of part-time master's students has increased, however the proportion of part-time students has decreased to 19.3 percent, a very slight dip from the 19.5 percent reported in 2010, and lower still than the peak of 22.5 percent achieved in 2006.

DOCTORAL STUDENTS

As shown in Chart 2.3, total doctoral enrolment continues to grow with reported increases of 9.7 percent and three percent for 2010 and 2011 respectively. Enrolment of part-time doctoral students declined by 2.9 percent in 2010; however growth in 2011 more than over-compensated for the decline by sharply rising 26.5 percent. After several years of hovering around the five percent mark, the proportion of part-time doctoral students is beginning to edge back towards its 2006 peak of 7.4 percent; it is currently at 6.3 percent.

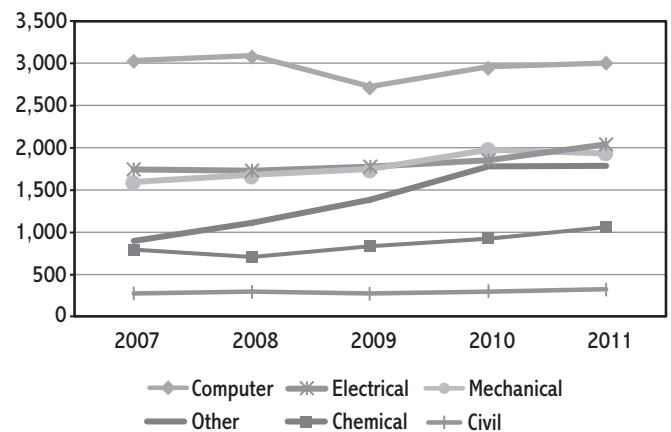
CHART 2.3 – NUMBER OF DOCTORAL STUDENTS BY COURSE LOAD



POST-GRADUATE ENROLMENT BY DISCIPLINE

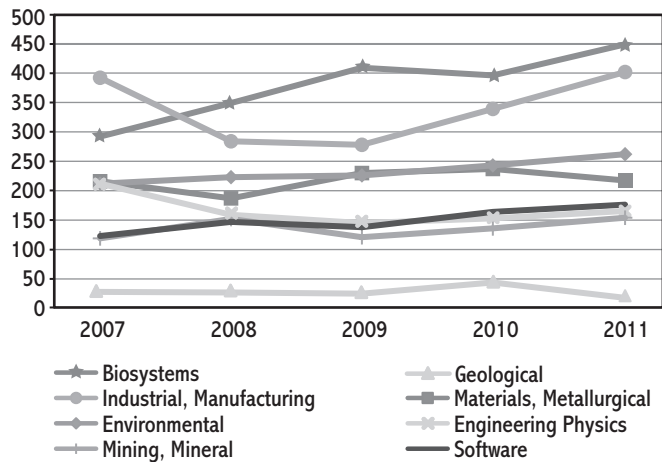
In 2011, master's enrolment was greatest in computer, electrical and mechanical engineering programs (see Chart 2.4). After a reported decline in 2009, enrolment in computer engineering jumped by 8.6 percent in 2010 and climbed a further 2.1 percent in 2011 to 3,020 FTEs (see Table G.1.5 in Appendix A). Electrical engineering experienced large gains in 2011 with a 10.6 percent rise totalling 2,048 FTEs. After posting strong gains in 2010, mechanical engineering fell by 2.2 percent to 1,933 FTEs.

CHART 2.4 – MASTER'S ENROLMENT BY DISCIPLINE (1) (FTE)



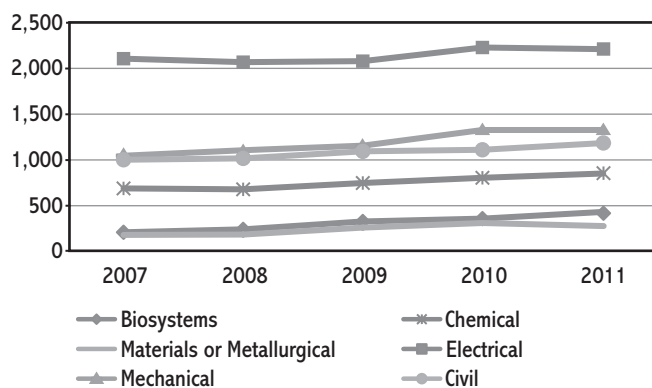
Among those master's programs with smaller enrolment (see Chart 2.5), biosystems engineering grew by 14.1 percent in 2011 (452 FTEs) after reporting a drop of 3.2 percent in 2010, after years of strong growth. Enrolment in industrial or manufacturing engineering rebounded in the last few years, increasing by 18.9 percent in 2011 (403 FTEs) and by 21.9 percent in 2010 (339 FTEs), which is a sizeable turnaround after declines of 27.6 percent and 2.1 percent in 2008 and 2009. Materials/metallurgical engineering experienced strong growth (23 percent) in 2009 followed by 3 percent growth in 2010 and a decline of 7.6 percent in 2011 totalling 219 FTEs (see Table G.1.5 in Appendix A).

CHART 2.5 – MASTER'S ENROLMENT BY DISCIPLINE (2) (FTE)



As seen in Chart 2.6, the largest doctoral programs saw a surge in enrolment in 2010 while 2011 saw slight declines for two of the top three disciplines, electrical and mechanical. Doctoral enrolment in electrical engineering consistently attracted the largest portion of students with 2,215 FTEs in 2011, a 0.6 percent drop from the previous year. Mechanical engineering attracted the second largest pool of doctoral students, and similar to electrical engineering, encountered a slight drop (0.3 percent) in 2011 totalling 1,323 FTEs. Civil engineering saw a larger rise in 2011 (6.7 percent to 1,185 FTEs). Strong growth was reported among the other doctoral programs as well, with biosystems reporting consecutive double-digit gains since 2008. Enrolment in industrial or manufacturing engineering experienced a sharp gain in 2011, rising 55.6 percent (224 FTEs) after posting gains of 18 percent in the previous year. Materials or metallurgical, engineering physics, environmental and geological engineering all reported declines in doctoral enrolment in 2011 (see Table G.1.6 in Appendix A).

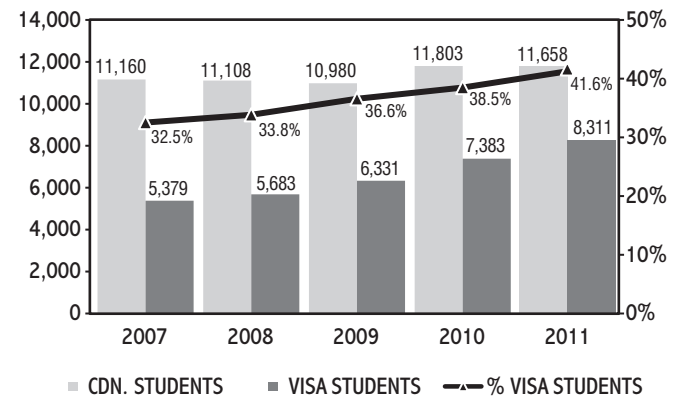
CHART 2.6 – DOCTORAL ENROLMENT: MAJOR DISCIPLINES (FTE)



POST-GRADUATE ENROLMENT OF INTERNATIONAL (VISA) STUDENTS

International students accounted for two-fifths (41.6 percent) of graduate student enrolment in engineering in 2011, a proportion that has been steadily increasing over the years. As shown in Chart 2.7, the growth of international graduate students has increased by 54.5 percent since 2007 (to 8,311 FTEs by 2011), far outpacing the growth of Canadian graduate students⁷, which posted a decline of 1.2 percent in 2011 to 11,658 FTEs⁸. Based on the findings, the growth in post-graduate enrolment in Canadian engineering programs reported over recent years is directly linked to the sizeable influx of international students.

CHART 2.7 – POST GRADUATE ENROLMENT OF CANADIAN AND VISA STUDENTS (FTE)



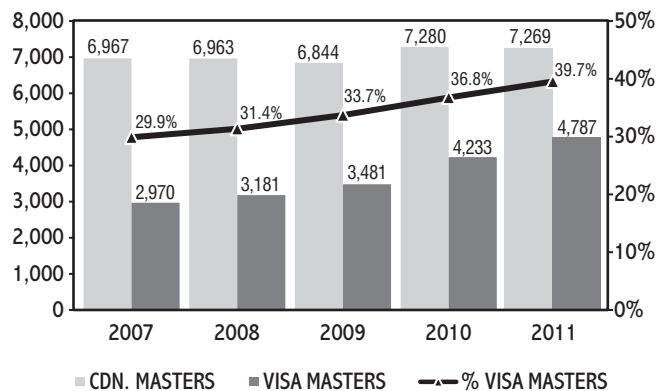
Considering master's enrolment only, the number of Canadian FTE students decreased slightly in 2011 by 0.2 percent totalling 7,269; however an overall increase of four percent has been realized between 2007 and 2011. In contrast, visa student enrolment continues to rise, recording a 39.7 percent gain in 2011 and an impressive 61 percent increase between 2007 and 2011 (see Chart 2.7a)⁹.

⁷ Includes both Canadian citizens and landed immigrants.

⁸ Totals are derived from tables, G.1.5, G.1.6, G.1.9, and G.1.10. The numbers depicted in the chart are derived from calculations performed across the latter tables, taking into account all students (master's and doctoral) versus visa students (master's and doctoral).

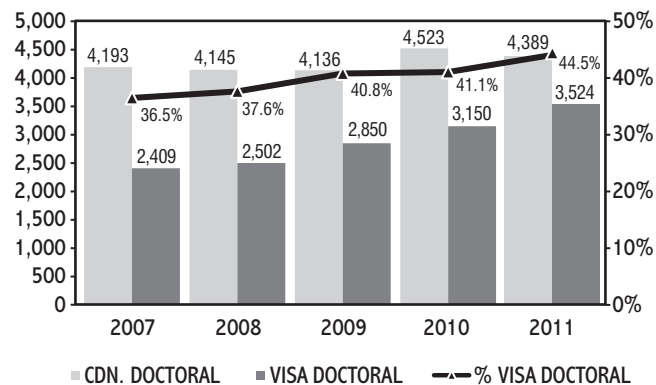
⁹ Totals are derived from tables G.1.5 and G.1.9. The numbers depicted in the chart are derived from calculations performed across the latter tables, taking into account all master's students versus visa master's students only.

CHART 2.7A – MASTER’S ENROLMENT OF CANADIAN AND VISA STUDENTS (FTE)



The growth in visa student doctoral enrolment over this period is also striking. As can be seen in Chart 2.7b, there were 3,524 visa doctoral students in 2011, a 46 percent increase since 2007. After previous years of decline, Canadian student doctoral enrolment increased by 9.4 percent in 2010 to 4,523 FTEs but decreased by three percent in 2011 to 4,389 FTEs, achieving an overall growth rate of five percent since 2007¹⁰. In line with past years, proportionately more doctoral students versus master’s students were visa holders in 2011 (44.5 percent and 39.7 percent, respectively).

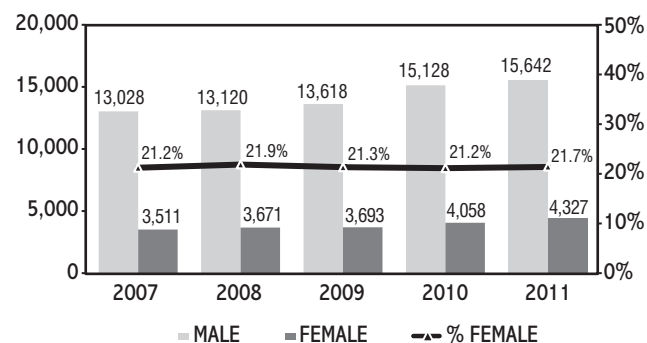
CHART 2.7B – DOCTORAL ENROLMENT OF CANADIAN AND VISA STUDENTS (FTE)



POST-GRADUATE ENROLMENT BY GENDER

The proportion of female engineering graduate students has hovered at around 21 percent since 2007¹¹, specifically 21.7 percent in 2011. As depicted in Chart 2.8 however, the rate of growth in 2010 for both female and male enrolments was the highest seen in years: 9.9 percent (to 4,058 FTEs) and 11.1 percent (to 15,128 FTEs) respectively. Growth was more moderate in 2011 with 6.6 percent (4,327 FTEs) for females and 3.4 percent (15,642 FTEs) for males.

CHART 2.8 – POST GRADUATE ENROLMENT BY GENDER (FTE)



With respect to master’s enrolment, the proportion of female students remained fairly constant over the years, as seen in Chart 2.8a. In 2011, there were 2,669 female master’s FTEs reported, comprising 22.1 percent of total enrolment¹².

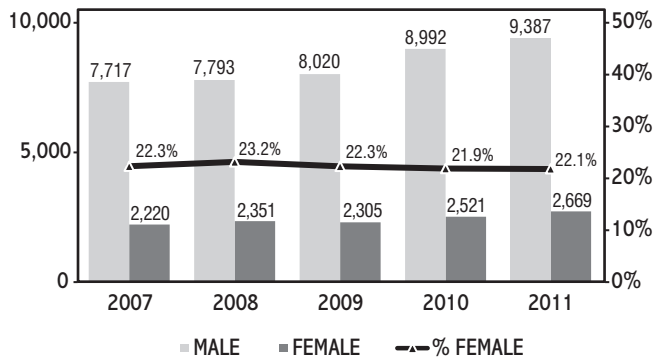
The representation of women in master’s programs varies by discipline but remains unchanged over time. In 2011, biosystems engineering included 42.9 percent females, followed by chemical (40 percent), civil (33.2 percent), computer (31.1 percent) and electrical (30.8 percent). Mechanical engineering used to be the master’s program with the lowest proportion of female FTEs (19.3 percent), however in 2011 mining or mineral (18.4 percent) and software engineering (17.9 percent) took the bottom spots.

¹⁰ Totals are derived from tables G.1.6 and G.1.10. The numbers depicted in the chart are derived from calculations performed across the latter tables, taking into account all doctoral students versus visa doctoral students only.

¹¹ Totals are derived from tables G.1.5, G.1.6, G.1.7, and G.1.8. The numbers depicted in the chart are derived from calculations performed across the latter tables, taking into account all students (master’s and doctoral) versus female students (master’s and doctoral).

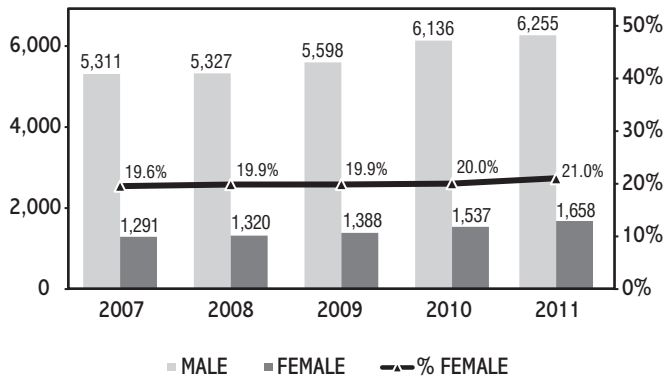
¹² Totals are derived from tables G1.5 and G.17. The numbers depicted in the chart are derived from calculations performed across the latter two tables, the first taking into account all master’s students and the second taking into account female master’s students only.

CHART 2.8A – MASTER’S ENROLMENT BY GENDER (FTE)



In 2011, the proportion of women enrolled in master’s programs was greatest in Saskatchewan (32.1 percent), followed closely by British Columbia (24.7 percent). Alberta (21.8 percent), Ontario (21.4 percent) and Quebec (20.4 percent) clustered around the national average of 22.1 percent. Newfoundland (21.6 percent), Manitoba (21.4 percent), New Brunswick (18.7 percent) and Nova Scotia (12.6 percent) scored in the bottom four.

CHART 2.8B – DOCTORAL ENROLMENT BY GENDER (FTE)



As can be seen in Chart 2.8b, the proportion of female doctoral students increased marginally between 2007 and 2011, from 19.6 percent to 21 percent. During that period, female doctoral enrolment increased by 7.9 percent to 1,658 FTEs, outpacing the 1.9 percent growth in male doctoral students¹³.

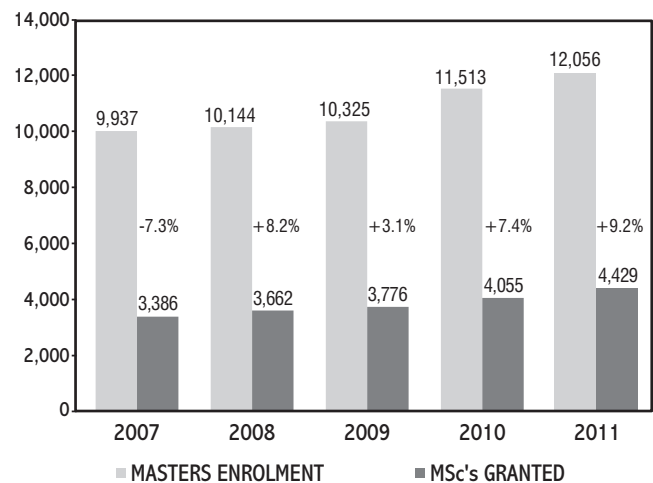
Female doctoral students are well represented in biosystems (38.3 percent), chemical (31.4 percent) and geological engineering (28.6 percent). Women were least strongly represented in electrical (16.5 percent) and mechanical engineering (16 percent) and engineering physics (14.4 percent). Civil engineering, which absorbs a large portion of overall doctoral enrolment, has seen a slow upward gain in female participation, from 18.4 to 22.4 percent from 2007 to 2011.

In 2011 the highest proportion of female doctoral students were reported in New Brunswick (25.5 percent), followed by Quebec (21.7 percent) and Saskatchewan (21.3 percent). Ontario and Alberta both had 21 percent, above the national average of 20 percent. British Columbia and Nova Scotia reported 20.2 percent and 19.4 percent respectively, while Manitoba (16.6 percent) and Newfoundland (16.3 percent) experienced the lowest female doctoral enrolment. Limited enrolment in some doctoral programs can result in large year-to-year fluctuations (see Table G.2.4 in Appendix A).

POST-GRADUATE DEGREES AWARDED

In 2011, 4,429 master’s degrees were awarded, a significant rise of 9.2 percent from the previous year. Awards have risen 30.8 percent since 2007 (see Table GD.1.1 in Appendix A).

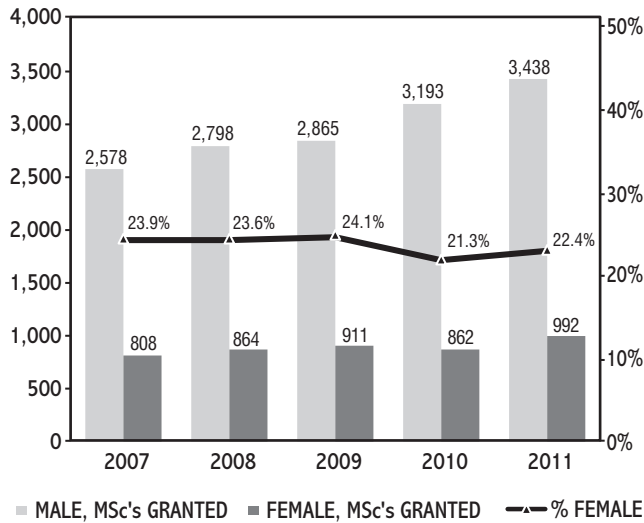
CHART 2.9 – MASTER’S ENROLMENT AND DEGREES AWARDED (FTE)



In 2011, the proportion of all master’s degrees awarded to women slightly increased from the previous year to 22.4 percent, a drop of 8.8 percent from 2009 after years of slow yet steady growth. As can be seen in Chart 2.9a, degrees awarded to women rose 22.7 percent from 2007 to 2011.

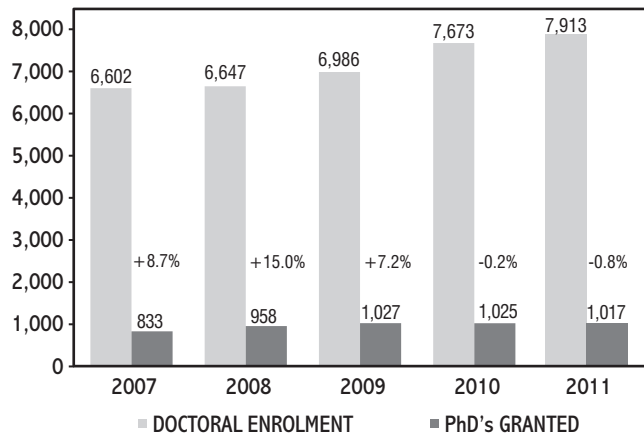
¹³ Totals derived from tables G.1.6 and G.1.8. The numbers depicted in the chart are derived from calculations performed across these two tables, the first taking account all doctoral students and the second taking account female doctoral students only.

CHART 2.9A – MASTER’S ENROLMENT AND DEGREES AWARDED BY GENDER (FTE)



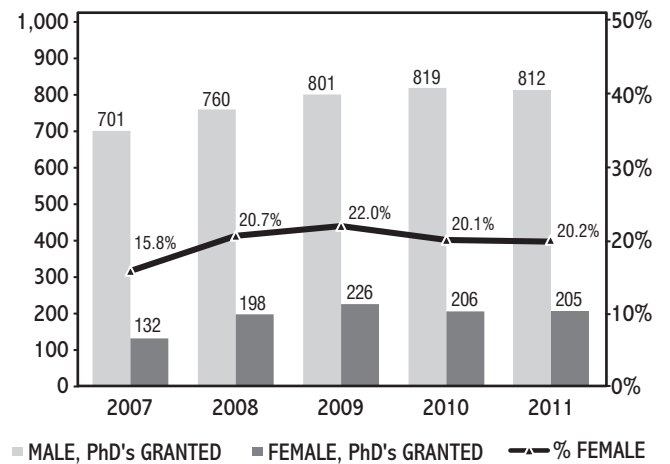
The number of doctoral degrees awarded dropped a further 0.8 percent in 2011 (to 1,017) while in 2010 degrees awarded dropped by 0.2 percent. However, as seen in Chart 2.10, growth has been strong over the years, with degrees awarded rising by 19.9 percent since 2007.

CHART 2.10 – DOCTORAL ENROLMENT AND DEGREES AWARDED (FTE)



The proportion of doctoral degrees awarded to women slightly increased from 2010 (Chart 2.10a). Women comprised 20.2 percent of doctoral degrees awarded (205 awarded), a drop of 0.5 percent, but doctorates awarded to women since 2007 are up 55.3 percent (see Table GD.1.4 in Appendix A).

CHART 2.10A – DOCTORAL ENROLMENT AND DEGREES AWARDED BY GENDER (FTE)



Monitoring the pulse of the

ENGINEERING*

profession



Internationalization/Globalization of Engineering Education

FOREWORD

Engineers Canada requested participating institutions to complete a survey on the internationalization and globalization of engineering education in the faculty, undergraduate and graduate student population. About 80 percent (39 out of 49 institutions) of surveys were returned. The survey sought to determine the level of Canadian academic participation in other countries.

OVERVIEW

The survey revealed that more than two-thirds of undergraduate engineering faculties and more than half of graduate faculties have formal arrangements with engineering faculties outside of Canadian borders. Programs in Quebec are the most prominent, often representing just under half of the reported activity. The most popular countries for these arrangements are: France, China, Germany and Mexico. These countries were also the top destinations for the exchange of engineering faculty members. The survey revealed that there are more foreign undergraduate engineering exchange students completing their studies in Canada than Canadian students completing engineering studies abroad. Currently, undergraduate faculties house more foreign exchange students (1,300) than graduate engineering faculties (80). Although, participation with foreign schools is prevalent, only six out of the 39 universities surveyed indicated they have formally mandated committees that introduce global aspects into engineering education.

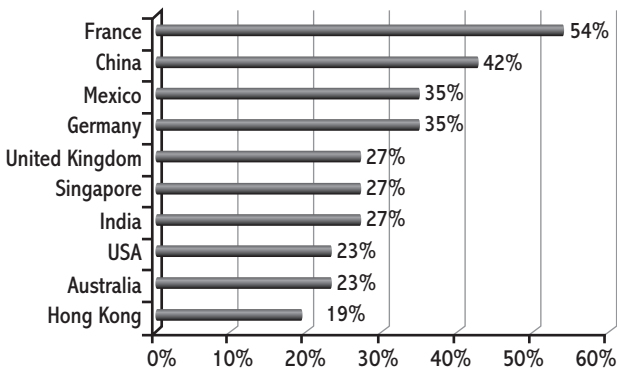
Participating institutions were asked the following questions:

1. Does your engineering faculty have any formal arrangements with engineering faculties in other countries to facilitate the exchange of students and/or teaching?
2. Does your engineering faculty offer an international stream or option within any of your engineering programs?
3. Does your engineering faculty offer or promote international work assignments as part of a co-op program or an international internship option?
4. How many exchange students does your engineering faculty currently have:
 - a. Coming from other countries (i.e. number of foreign exchange students currently in your engineering programs for part of their studies)
 - b. Going to other countries (i.e. number of engineering students from your institution currently in another country for part of their studies)
5. Does your engineering faculty offer collaborative courses with schools in other countries?
6. Does your engineering faculty offer courses in:
 - a. The role of technology and engineering in international development
 - b. Appropriate and sustainable technology for economic development
 - c. The international economy
 - d. Internationally recognized quality control standards (e.g., ISO, etc)
 - e. Other topics relevant to global engineering
7. Does your engineering faculty currently have a formally mandated committee to examine ways to introduce global aspects into engineering education?

GLOBAL ARRANGEMENTS

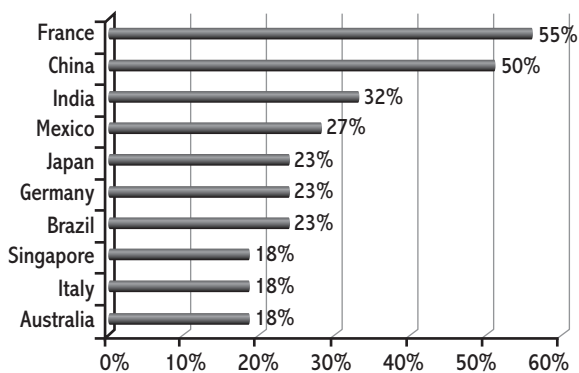
Based on 39 institutions that participated in the survey, 67 percent (26 out of 39) indicated they had formal arrangements with engineering faculties in other countries to facilitate the exchange of undergraduate students. Of those institutions, more than half (54 percent) indicated they had formal arrangements with France, followed by China (42 percent) and Germany and Mexico both at 35 percent (see Exhibit T.1a).

EXHIBIT T.1A – FORMAL ARRANGEMENTS WITH COUNTRIES FOR THE EXCHANGE OF ENGINEERING STUDENTS (UNDERGRADUATE)



For graduate students, more than half (56 percent) indicated the presence of formal arrangements with other countries. As illustrated in Exhibit T.1b, of the 22 institutions that reported having such arrangements, France was again the top country with 55 percent followed by China (50 percent), India (32 percent) and Mexico (27 percent).

EXHIBIT T.1B – FORMAL ARRANGEMENTS WITH COUNTRIES FOR THE EXCHANGE OF ENGINEERING STUDENTS (GRADUATE)



The exchange of faculty members with foreign institutions was less prevalent; a little more than a quarter (28 percent). France, China, and India were the top three destinations for the exchange of engineering faculty and also the top countries for the exchange of engineering students.

About three-quarters (29 out of 39) of universities surveyed have foreign students completing part of their undergraduate studies in Canadian engineering faculties. This totals about 1,300 foreign students. École Polytechnique in Quebec had the highest number of foreign undergraduate students (538) followed by the University of Waterloo (205) and École de technologie supérieure (100). For graduate engineering faculties, a total of 79 foreign students are completing part of their studies across 11 of the universities surveyed. The University of Western Ontario had the highest number of foreign graduate students with 35, followed by the University of Saskatchewan with 20.

In addition to the number of foreign engineering students studying within Canadian borders, 22 out of 39 universities surveyed have undergraduate engineering students currently studying abroad as part of their studies. This totals 413 students. Again, École Polytechnique had the highest number of engineering students attending other countries' institutions as part of their studies with 100 students, followed by the University of Waterloo (96) and Université de Sherbrooke (46). For graduate engineering students, about 16 are currently studying abroad. Seven out of 39 universities (18 percent) reported having graduate engineering students on exchange.

Aside from foreign exchange students, about 28 percent (11 out of 39) of universities indicated their undergraduate engineering faculties offered an international stream or option within any of their engineering programs compared to 18 percent of graduate engineering faculties. Five universities offered international options for both undergraduate and graduate engineering programs, they are: École Polytechnique, École de technologie supérieure, McMaster University, Université du Québec à Rimouski and the University of Toronto.

CO-OPS, INTERNSHIPS & COURSES

About two-thirds, or 64 percent, of respondents indicated they offered or promoted international work assignments as part of an undergraduate co-op program or international internship. Graduate engineering programs fared much lower with just 23 percent indicating they offered such opportunities. Of the universities that offer international co-ops and internships for undergraduate programs 1,500 students are currently participating; compared to 50 graduate students participating.

With respect to collaborative coursework, 10 universities (25 percent) indicated their engineering faculties offered collaborative courses with schools in other countries. Half of those universities offered foreign collaborations at both the undergraduate and graduate level. Some of the countries involved include: France, Germany, Italy, China and Singapore.

Aside from collaborative coursework in other countries, the survey sought to determine the prevalence of 'internationally focused' engineering courses within Canadian borders. Specifically, the survey asked respondents whether their engineering faculties offered courses in the following areas:

- The role of technology and engineering in international development,
- Appropriate and sustainable technology for economic development,
- The international economy,
- Internationally recognized quality control standards (e.g., ISO, etc), and
- Other topics relevant to global engineering.

More than half of universities surveyed indicated their engineering faculties offered undergraduate courses in 'sustainable technology for economic development' (64 percent) and 'internationally recognized quality control standards' (51 percent). Two-fifths (16 out of 39) of institutions offered courses on the 'role of technology and engineering in international development' as well as 'other topics relevant to global engineering'. Only a quarter of schools surveyed had engineering faculties offering undergraduate courses relating to the international economy.

Similar to undergraduate course offerings, graduate engineering faculties also indicated a prevalence in courses such as 'sustainable technology for economic development' and 'internationally recognized quality control standards' (33 and 31 percent respectively). More than a quarter (28 percent) of universities that offered the course 'sustainable technology for economic development' at the undergraduate level, also offered the course at the graduate level. Again, similar to survey results for undergraduate course offerings, 'the international economy' was the least offered course by graduate engineering faculties.

Since the survey's focus was to uncover information on the internationalization and globalization of engineering education in the faculty, undergraduate and graduate student populations, it sought to determine how many institutions had formally mandated committees to examine ways to introduce global aspects into engineering education. Survey results indicate that currently six universities (13 percent of respondents) have such mandated committees. Five of the six universities have formally mandated committees for both undergraduate and graduate engineering levels, they are:

- University of Western Ontario
- McMaster University
- École Polytechnique
- École de technologie supérieure
- University of Toronto

The University of Saskatchewan is the only university of the six that does not have committees for both undergraduate and graduate faculties; instead the university has a mandated committee for their graduate engineering faculty only.

Conclusion

The 49 Canadian universities contributing updated data on enrolments and graduations in the report have added an important new chapter to Engineers Canada's records. Trends revealed here document continuing growth in enrolments and graduations; confirming the major gains in 2010. Analysis also identifies important shifts across programs, institutions and provinces.

These numbers provide a benchmark for comparison among institutions and are the basis for anticipating the addition of new engineers to the workforce. The time and effort contributed by the institutions is rewarded with a timely, consistent and credible record. Engineers Canada appreciates these efforts and welcomes comments and suggestions.

APPENDICES



Appendix A

DATA TABULATIONS – ENGINEERING ENROLMENT AND DEGREES AWARDED

To provide added clarity of presentation in the numerous tabulations that comprise this document, the following tree was developed. Each of the main headings and sub-variables analyzed is presented along with the corresponding table number. The main headings under which data tabulations are presented include national, provincial and institutional categories. Other variables such as discipline, gender and foreign students are presented as tables under each of these main headings.

For example, the tabulation of undergraduate enrolment figures (U) at a national level (1) would be designated as Table U.1. The data compiled into different categories, including discipline, gender and information on foreign students appear as subsequent tables under the main headings.

Undergraduate Enrolment (U)

- U.1. National
- U.2. Provincial
- U.3. Institutional

Undergraduate Degrees Awarded (UD)

- UD.1. National
- UD.2. Provincial
- UD.3. Institutional

Postgraduate Student Enrolment (G)

- G.1. National
- G.2. Provincial
- G.3. Institutional

Postgraduate Degrees Awarded (GD)

- GD.1. National
- GD.2. Provincial
- GD.3. Institutional

Faculty Members by Institution (F)

- F.1. Faculty Composition

Co-op, Internship and Professional Experience Programs (C)

- C.1. Industry Experience Options by Institutions

Please note that for 2007 and onwards, the universities provided average numbers of students enrolled over the fall, winter and summer terms. However, for purposes of reporting, those numbers were rounded up or down accordingly.

SCHOOL NAME AND ACRONYM

In the Appendix section of this report, all university names, where appropriate, have been abbreviated to allow for ease of reading. The chart shown below lists the complete name of the school and the abbreviated name that is commonly used to refer to the university.

COMPLETE SCHOOL NAME	ACRONYM
Acadia University	Acadia
Alberta, University of	Alberta
British Columbia Institute of Technology	BCIT
British Columbia, University of	UBC
British Columbia at Okanagan, University of	UBCO
Calgary, The University of	Calgary
Cape Breton, University College of	Cape Breton
Carleton University	Carleton
Concordia University	Concordia
Conestoga College	Conestoga
Dalhousie University	Dal
École de technologie supérieure	ETS
Guelph, University of	Guelph
Lakehead University	Lakehead
Laurentian University	Laurentian
Laval, Université	Laval
Manitoba, The University of	Manitoba
McGill University	McGill
McMaster University	McMaster
Memorial University of Newfoundland	MUN
Moncton, Université de	Moncton
New Brunswick, University of	UNB
Northern British Columbia, University of	UNBC
Nova Scotia Agricultural College	NSAC
Ottawa, University of	Ottawa
Prince Edward Island, University of	UPEI
Polytechnique, École	Polytechnique
Québec à Chicoutimi, Université du	UQAC
Québec à Montréal, Université du	UQAM
Québec à Rimouski, Université du	UQAR
Québec à Trois-Rivières, Université du	UQTR
Québec en Abitibi-Témiscamingue, Université du	UQAT
Québec en Outaouais, Université du	UQO
Queen's University	Queen's
Regina, University of	Regina
Royal Military College of Canada	RMC

COMPLETE SCHOOL NAME	ACRONYM
Ryerson University	Ryerson
Saint Mary's University	SMU
Saskatchewan, University of	Saskatchewan
Sherbrooke, Université de	Sherbrooke
Simon Fraser University	SFU
St. Francis Xavier University	StFX
Toronto, University of	Toronto
University of Ontario, Institute of Technology	UOIT
Victoria, University of	UVic
Waterloo, University of	Waterloo
Western Ontario, University of	Western
Windsor, University of	Windsor
York University	York

PROVINCE NAME AND ABBREVIATION

In the appendix section of this report, the provincial names have been abbreviated to allow for ease of reading. The chart shown below lists the complete name of the province and the corresponding abbreviation.

PROVINCE NAME	ABBREVIATION
Alberta	AB
British Columbia	BC
Manitoba	MB
New Brunswick	NB
Newfoundland and Labrador	NL
Nova Scotia	NS
Ontario	ON
Prince Edward Island	PE
Quebec	QC
Saskatchewan	SK

A.1. UNDERGRADUATE ENROLMENT

U.1. National

TABLE U.1.1.

Total undergraduate enrolment in accredited engineering programs by discipline: 2007 to 2011.

DISCIPLINE	2007	2008	2009	2010	2011
Biosystems	609	579	739	784	754
Chemical	4228	4379	4618	5189	5086
Civil	8294	8897	9614	10604	10987
Computer	3940	3644	3546	3496	3655
Electrical	9122	8870	9375	9587	9903
Engineering Physics	2660	2715	2519	2845	2882
Environmental	746	785	982	1143	1240
Geological	415	532	556	594	630
Industrial or Manufacturing	1993	1824	1742	1662	1766
Materials or Metallurgical	820	921	930	927	994
Mechanical	11547	12337	12828	13662	13628
Mining or Mineral	638	764	860	939	983
Software	1911	1931	2120	2199	2286
Other	2091	2126	2391	2529	2658
Year One/Two Common Year	6945	6950	6052	7000	8605
TOTAL	55958	57255	58872	63160	66057

TABLE U.1.2.

Total female undergraduate enrolment in accredited engineering programs: 1991 to 2011.

YEAR	TOTAL ENROLMENT	WOMEN	PERCENT OF TOTAL
1991	37147	5979	16.1
1992	40307	6689	16.6
1993	41562	7376	17.7
1994	40958	7466	18.2
1995	40068	7541	18.8
1996	40997	7736	18.9
1997	42048	8099	19.3
1998	43898	8493	19.3
1999	44840	9217	20.6
2000	47066	9561	20.3
2001	49422	10199	20.6
2002	52585	10456	19.9
2003	54301	10423	19.2
2004	54991	10011	18.2
2005	54622	9530	17.4
2006	53287	9350	17.5
2007	55958	9682	17.3
2008	57255	9797	17.1
2009	58872	10199	17.3
2010	63160	11200	17.7
2011	66057	11690	17.7

TABLE U.1.3.

Total female undergraduate enrolment in accredited engineering programs: 2007 to 2011.

DISCIPLINE	2007	2008	2009	2010	2011
Biosystems	201	200	281	305	294
Chemical	1533	1555	1619	1740	1715
Civil	1852	1900	2064	2265	2400
Computer	381	359	342	361	372
Electrical	1088	1033	1147	1216	1198
Engineering Physics	471	448	415	453	466
Environmental	274	288	380	459	510

DISCIPLINE	2007	2008	2009	2010	2011
Geological	131	176	188	219	240
Industrial or Manufacturing	429	401	377	382	412
Materials or Metallurgical	173	199	214	213	216
Mechanical	1189	1242	1240	1417	1380
Mining or Mineral	95	114	129	138	159
Software	186	195	203	214	225
Other	357	354	389	411	435
Year One/Two Common Year	1323	1334	1210	1406	1667
TOTAL	9682	9797	10199	11200	11690

TABLE U.1.4.

Undergraduate enrolment in engineering programs that will be seeking accreditation: 2011.

INSTITUTION	PROGRAM	2011
BCIT	Mechanical Engineering	208
Carleton	Architectural Conservation and Sustainability	35
Carleton	Biomedical and Mechanical	84
Carleton	Sustainable & Renewable Energy	150
Guelph	Biomedical Engineering	105
Guelph	Computer Engineering	24
Guelph	Mechanical Engineering	218
Laurentian	Mechanical Engineering	184
MUN	Process Engineering	63
Polytechnique	Génie aérospatial	160
Polytechnique	Génie biomédical	126
Ryerson	Biomedical Engineering	226
SFU	Mechatronic Systems Engineering	291
UBCO	Year One - Common	571
UOIT	Energy Systems Engineering	46
UQAC	Génie civil	96
Waterloo	Management Engineering	190
York	Software Engineering	12
TOTAL		2789

U.2. Provincial

TABLE U.2.1.

Total undergraduate enrolment in accredited engineering programs by province: 2007 to 2011.

PROVINCE	2007	2008	2009	2010	2011
AB	6239	6413	6606	6798	6897
BC	4569	4893	4470	5948	6296
MB	1028	1028	1064	1088	1154
NB	1522	1729	1592	1910	2018
NL	725	739	787	762	873
NS	1470	1469	1460	1605	1777
ON	22985	23029	24806	26652	28185
PE	107	102	102	100	103
QC	15431	15947	15985	16212	16601
SK	1881	1906	1999	2085	2152
TOTAL	55958	57255	58872	63160	66057

TABLE U.2.2.

Total female undergraduate enrolment in accredited engineering programs by province: 2011.

PROVINCE	TOTAL ENROLMENT	FEMALE ENROLMENT	PERCENT FEMALE ENROLMENT
AB	6897	1475	21.40%
BC	6296	1023	16.30%
MB	1154	194	16.80%
NB	2018	338	16.70%
NL	873	183	20.90%
NS	1777	327	18.40%
ON	28185	4946	17.50%
PE	103	25	24.30%
QC	16601	2748	16.60%
SK	2152	430	20.00%
TOTAL	66057	11690	17.70%

TABLE U.2.3.

Total undergraduate foreign student enrolment in accredited engineering programs by province: 2007 to 2011.

PROVINCE	2007	2008	2009	2010	2011
AB	384	432	495	584	655
BC	450	524	446	669	763
MB	150	140	132	129	149
NB	214	267	282	344	611
NL	55	52	101	73	89
NS	212	197	180	284	318
ON	2224	2341	2644	3058	3423
PE	0	0	0	14	12
QC	2110	2300	2399	2257	2284
SK	217	217	277	334	385
TOTAL	6014	6468	6955	7744	8688

TABLE U.2.4.

Total undergraduate enrolment in accredited engineering programs by discipline and province: 2011.

DISCIPLINE	AB	BC	MB	NB	NL	NS	ON	PE	QC	SK	TOTAL
Biosystems		278	83	14		10	236		104	29	754
Chemical	797			319		65	2795		946	164	5086
Civil	980	812	246	531	141	121	3816		4162	179	10987
Computer	225	404	68	65	57	21	1912		761	142	3655
Electrical	924	1195	167	342	88	80	4199		2814	94	9903
Engineering Physics	66	891				167	1361		347	50	2882
Environmental		116				76	738		91	219	1240
Geological		119		32			194		220	66	630
Industrial or Manufacturing	2		3			79	558		960	163	1766
Materials or Metallurgical	161	135				37	439		222		994
Mechanical	1327	836	379	512	251	167	5564		4363	230	13628
Mining or Mineral	134	132				45	359		312		983
Software	121	72		25			880		1139	48	2286
Other	464	143		72	77		1570		161	173	2658
Year One/Two Common Year	1694	1164	209	107	261	908	3564	103		595	8605
TOTAL	6897	6296	1154	2018	873	1777	28185	103	16601	2152	66057

TABLE U.2.5.

Total female undergraduate enrolment in accredited engineering programs by discipline and province: 2011.

DISCIPLINE	AB	BC	MB	NB	NL	NS	ON	PE	QC	SK	TOTAL
Biosystems		90	44	5		4	94		48	10	294
Chemical	252			113		19	883		405	44	1715
Civil	284	136	50	111	52	25	768		932	41	2400
Computer	25	52	8	9	6	2	197		60	14	372
Electrical	160	131	30	31	15	9	514		294	15	1198
Engineering Physics	7	121				20	273		41	4	466
Environmental		52				33	286		43	97	510
Geological		42		8			80		94	17	240
Industrial or Manufacturing	1		0			18	167		204	22	412
Materials or Metallurgical	50	23				6	99		38		216
Mechanical	191	97	31	38	45	19	503		433	24	1380
Mining or Mineral	21	19				6	77		35		159
Software	22	8		3			88		95	10	225
Other	104	23		9	20		227		27	26	435
Year One/Two Common Year	359	230	32	13	46	167	689	25		107	1667
TOTAL	1475	1023	194	338	183	327	4946	25	2748	430	11690

U.3. Institutional

TABLE U.3.1.

Total undergraduate enrolment in accredited engineering programs by institution: 2007 to 2011.

INSTITUTION	2007	2008	2009	2010	2011
Acadia	108	104	86	91	101
Alberta	3708	3764	3892	3919	3904
BCIT				186	465
Calgary	2531	2649	2714	2879	2993
Cape Breton	55	55		81	84
Carleton	2096	2129	2251	2542	2698
Concordia	3060	3044	2784	2795	2787
Conestoga				55	80
Dal	1049	1034	1090	1108	1273
ETS	2979	3007	3221	3342	3654
Guelph	564	476	496	539	528
Lakehead	676	675	747	798	796
Laurentian	161	158	161	256	258
Laval	2206	2379	2470	2470	2470
Manitoba	1028	1028	1064	1088	1154
McGill	2636	2699	2540	2443	2257
McMaster	2950	2801	2946	3049	3579
Moncton	309	293	325	325	338
MUN	725	739	787	762	873
NSAC	42	42	47	56	59
Ottawa	1489	1407	1595	1757	1805
Polytechnique	2831	3007	3295	3519	3644
Queen's	2296	2355	2531	2575	2687
Regina	692	714	751	824	878
RMC	342	321	355	395	431
Ryerson	2180	2137	2310	2433	2569
Saskatchewan	1189	1192	1249	1262	1274
SFU	655	712	565	634	654
Sherbrooke	1166	1182	1036	1053	1248
SMU	134	165	157	189	167
StFX	82	68	79	80	93
Toronto	4191	4143	4222	4294	4386
UBC	2922	3142	2734	3818	3800
UBCO				311	313
UNB	1213	1436	1267	1585	1680
UNBC		47	56	69	73
UOIT	126	315	1023	1112	1243
UPEI	107	102	102	100	103
UQAC	198	259	255	217	208
UQAM	74	89	53	20	27
UQAR	4	28	83	81	86
UQAT	62	52	52	68	54
UQO	30	30	32	34	3
UQTR	186	173	165	170	163
UVic	992	992	1114	930	992
Waterloo	3487	3887	3903	4457	4622
Western	1206	1120	1111	1115	1324
Windsor	1075	965	991	974	985
York	146	141	165	181	195
TOTAL	55958	57255	58872	63160	66057

TABLE U.3.2.

Total female undergraduate enrolment in accredited engineering programs by institution: 2007 to 2011.

INSTITUTION	2007	2008	2009	2010	2011
Acadia	23	15	14	19	23
Alberta	765	765	800	806	774
BCIT				22	37
Calgary	591	659	659	692	701
Cape Breton	16	16		15	14
Carleton	271	251	271	368	370
Concordia	482	483	445	451	471
Conestoga				5	9
Dal	189	184	207	215	241
ETS	226	241	272	306	325
Guelph	133	131	137	151	160
Lakehead	73	55	63	69	64
Laurentian	30	28	28	51	55
Laval	350	385	428	428	428
Manitoba	143	134	153	174	194
McGill	568	539	486	502	510
McMaster	490	435	471	539	549
Moncton	38	38	44	44	60
MUN	150	152	202	160	183
NSAC	4	4	3	3	6
Ottawa	219	202	273	351	325
Polytechnique	573	634	699	734	755
Queen's	526	535	597	632	687
Regina	135	132	151	170	184
RMC	63	44	42	49	46
Ryerson	337	324	337	356	377
Saskatchewan	201	214	226	242	247
SFU	93	94	73	80	98
Sherbrooke	162	193	175	163	194
SMU	13	16	19	25	20
StFX	13	10	25	24	23
Toronto	906	892	918	957	1024
UBC	535	559	511	725	732
UBCO				40	34
UNB	199	221	223	259	278
UNBC		20	25	31	33
UOIT	15	32	87	87	90
UPEI	16	20	20	15	25
UQAC	23	33	28	25	27
UQAM	9	11	1	1	2
UQAR	0	2	8	5	7
UQAT	5	5	4	10	10
UQO	6	6	4	5	1
UQTR	21	17	16	18	18
UVic	104	104	101	82	90
Waterloo	602	625	605	730	777
Western	210	210	214	215	250
Windsor	130	109	118	120	130
York	26	19	22	33	33
TOTAL	9682	9797	10199	11200	11690

TABLE U.3.3.

Total undergraduate enrolment in accredited engineering programs by institution and discipline: 2011.

INSTITUTION	BIOSYSTEMS	CHEMICAL	CIVIL	COMPUTER	ELECTRICAL	ENGINEERING PHYSICS	ENVIRONMENTAL	GEOLOGICAL	INDUSTRIAL OR MANUFACTURING	MATERIALS OR METALLURGICAL	MECHANICAL	MINING OR MINERAL	SOFTWARE	OTHER	YEAR ONE/TWO COMMON YEAR
Acadia															101
Alberta		460	617	182	490	66				161	700	134		171	923
BCIT			195		269										
Calgary		337	363	43	434				2		627		121	293	771
Cape Breton															84
Carleton			535	200	696	57	179				446		128	457	
Concordia			959	150	351				230		856		241		
Conestoga											80				
Dal	10	65	121	21	80		76		79	37	167	45			571
ETS			1035		939				357		930		393		
Guelph	86			77			326								40
Lakehead		69	299		186						218		24		
Laurentian		118										140			
Laval	104	94	584	122	195	169	91	93		100	534	128	123	136	
Manitoba	83		246	68	167				3		379				209
McGill		325	363	114	525					113	621	85	111		
McMaster		334	375	307	471	148				239	464		113	79	1050
Moncton			185		74						79				
MUN			141	57	88						251			77	261
NSAC															59
Ottawa	150	310	475	104	239						404		125		
Polytechnique		322	929	246	398	178		95	324	2	779	99	271		
Queen's		321	381	61	147	342		128			522	138			647
Regina				106			176		163				48	173	213
RMC		34	87	23	24						51			58	154
Ryerson		253	525	204	490				133		507			358	99
Saskatchewan	29	164	179	36	94	50	43	66			230				383
SFU						654									
Sherbrooke		194	293	112	227						422				
SMU						167									
StFX															93
Toronto		452	495	340	760	815			326	200	708	82			209
UBC	278		459	328	591	237	43	119		135	417	132		143	919
UBCO			158		39						116				
UNB	14	319	346	65	268			32			433		25	72	107
UNBC							73								
UOIT					233				30		622		94	265	
UPEI															103
UQAC				14	49			32		7	106				
UQAM					27										
UQAR					20						41			25	
UQAT					33						21				
UQO				3											
UQTR		11			50				49		52				
UVic				76	296						303		72		245
Waterloo		905	447	495	701		177	66			1114		397	323	
Western															1324
Windsor			199		251		57		69		367				41
York				103							62			30	
TOTAL	754	5086	10987	3655	9903	2882	1240	630	1766	994	13628	983	2286	2658	8605

TABLE U.3.4.

Total female undergraduate enrolment in accredited engineering programs by institution and discipline: 2011.

INSTITUTION	BIOSYSTEMS	CHEMICAL	CIVIL	COMPUTER	ELECTRICAL	ENGINEERING PHYSICS	ENVIRONMENTAL	GEOLOGICAL	INDUSTRIAL OR MANUFACTURING	MATERIALS OR METALLURGICAL	MECHANICAL	MINING OR MINERAL	SOFTWARE	OTHER	YEAR ONE/TWO COMMON YEAR
Acadia															23
Alberta		137	173	20	73	7				50	85	21		25	183
BCIT			24		14										
Calgary		115	111	5	87				1		106		22	79	176
Cape Breton															14
Carleton			76	20	97	8	65				34		8	62	
Concordia			254	14	39				59		75		30		
Conestoga											9				
Dal	4	19	25	2	9		33		18	6	19	6			101
ETS			186		66				16		44		14		
Guelph	36			8			114								4
Lakehead		18	31		7						8		1		
Laurentian		27										28			
Laval	48	35	110	12	16	15	43	39		12	61	4	11	24	
Manitoba	44		50	8	30						31				32
McGill		142	122	9	82					23	97	15	20		
McMaster		115	67	25	74	14				37	35		12	2	169
Moncton			42		12						6				
MUN			52	6	15						45			20	46
NSAC															6
Ottawa	59	85	92	12	25						40		14		
Polytechnique		151	208	20	57	26		44	122	2	90	16	20		
Queen's		116	123	9	13	69		61			90	29			176
Regina				13			77		22				10	26	37
RMC		7	12	2	2						4			3	16
Ryerson		73	112	16	56				34		30			42	14
Saskatchewan	10	44	41	2	15	4	21	17			24				71
SFU						98									
Sherbrooke		74	52	4	16						48				
SMU						20									
StFX															23
Toronto		197	125	49	127	182			112	63	100	20			49
UBC	90		93	47	87	23	19	42		23	63	19		23	203
UBCO			20		4						10				
UNB	5	113	69	9	19			8			32		3	9	13
UNBC							33								
UOIT					15				2		27		13	33	
UPEI															25
UQAC				1	6			11		1	8				
UQAM					2										
UQAR					3						1			3	
UQAT					4						6				
UQO				1											
UQTR		3			4				8		3				
UVic				6	26						24		8		27
Waterloo		247	101	43	72		85	19			93		41	78	
Western															250
Windsor			30		25		23		19		22				10
York				14							12			7	
TOTAL	294	1715	2400	372	1198	466	510	240	412	216	1380	159	225	435	1667

A.2. UNDERGRADUATE DEGREES AWARDED

UD.1. National

TABLE UD.1.1.

Total undergraduate degrees awarded by discipline: 2007 to 2011.

DISCIPLINE	2007	2008	2009	2010	2011
Biosystems	131	176	159	153	141
Chemical	917	1030	987	1145	1158
Civil	1691	1727	1853	1923	2191
Computer	1089	905	728	660	569
Electrical	2318	2280	2099	2099	2050
Engineering Physics	572	520	499	535	453
Environmental	151	169	135	159	207
Geological	89	95	100	110	124
Industrial or Manufacturing	521	437	341	391	350
Materials or Metallurgical	229	202	177	223	213
Mechanical	2656	2947	2728	2983	2976
Mining or Mineral	125	121	139	200	211
Software	457	472	337	356	353
Other	505	538	499	457	491
Year One/Two Common Year				56	217
TOTAL	11451	11619	10781	11450	11703

TABLE UD.1.2.

Total undergraduate degrees awarded to female students by discipline: 2007 to 2011.

DISCIPLINE	2007	2008	2009	2010	2011
Biosystems	53	67	49	48	53
Chemical	388	392	375	396	396
Civil	376	416	429	421	484
Computer	110	87	64	55	58
Electrical	337	296	270	279	250
Engineering Physics	116	95	96	100	82
Environmental	70	73	48	49	86
Geological	33	23	32	31	40
Industrial or Manufacturing	123	88	63	88	89
Materials or Metallurgical	46	46	35	42	50
Mechanical	336	351	303	307	286
Mining or Mineral	24	14	29	26	43
Software	50	50	26	30	40
Other	101	96	79	71	95
Year One/Two Common Year				9	58
TOTAL	2163	2094	1898	1952	2110

UD.2. Provincial

TABLE UD.2.1.

Total undergraduate degrees awarded by province: 2007 to 2011.

PROVINCE	2007	2008	2009	2010	2011
AB	1071	1199	1147	1187	1298
BC	829	852	884	1121	1126
MB	155	218	165	223	197
NB	329	336	292	256	240
NL	154	153	157	166	151
NS	256	277	266	291	500
ON	5353	5288	4752	5101	5075
QC	2981	2928	2780	2754	2761
SK	323	368	338	351	355
TOTAL	11451	11619	10781	11450	11703

TABLE UD.2.2.

Total undergraduate degrees awarded to female students by province: 2007 to 2011.

PROVINCE	2007	2008	2009	2010	2011
AB	215	238	240	272	302
BC	141	140	160	184	208
MB	22	41	24	30	27
NB	43	50	56	33	45
NL	30	27	39	33	33
NS	57	60	35	63	112
ON	1094	1012	846	858	876
QC	495	464	448	427	431
SK	66	62	50	52	76
TOTAL	2163	2094	1898	1952	2110

TABLE UD.2.3.

Total undergraduate degrees awarded to foreign students by province: 2007 to 2011.

PROVINCE	2007	2008	2009	2010	2011
AB	84	51	54	64	90
BC	43	57	93	103	91
MB	15	23	22	38	28
NB	27	61	53	26	38
NL	6	14	6	13	14
NS	22	21	25	19	69
ON	327	366	375	408	411
QC	211	232	273	282	252
SK	39	40	36	30	40
TOTAL	774	865	937	983	1033

TABLE UD.2.4.

Total undergraduate degrees awarded by province and discipline: 2011.

DISCIPLINE	AB	BC	MB	NB	NL	NS	ON	QC	SK
Biosystems		71	12	2		4	28	9	15
Chemical	212			22		42	657	186	39
Civil	229	201	58	86	33	62	833	624	65
Computer	59	92	13	9	13	3	256	103	21
Electrical	206	203	33	36	24	33	936	560	19
Engineering Physics	26	110					260	45	12
Environmental		38				28	123		18
Geological		38		3			34	33	16
Industrial or Manufacturing	5		2			25	108	168	42
Materials or Metallurgical	45	34				12	83	39	
Mechanical	339	264	79	65	69	53	1229	805	73
Mining or Mineral	43	32				21	103	12	
Software	11	12		5			154	160	11
Other	123	31		12	12		271	18	24
Year One/Two Common Year						217			
TOTAL	1298	1126	197	240	151	500	5075	2761	355

TABLE UD.2.5.

Total undergraduate degrees awarded to women by province and discipline: 2011.

DISCIPLINE	AB	BC	MB	NB	NL	NS	ON	QC	SK
Biosystems		26	4	1		1	8	5	8
Chemical	68			8		11	217	86	6
Civil	75	50	9	15	13	11	171	123	17
Computer	5	9	2	2			32	6	2
Electrical	35	34	6	3	2	4	105	61	
Engineering Physics	2	20					52	6	2
Environmental		20				10	48		8
Geological		7					19	10	4
Industrial or Manufacturing	3					8	32	33	13
Materials or Metallurgical	18	6				1	18	7	
Mechanical	53	22	6	7	15	7	99	73	4
Mining or Mineral	10	6				1	24	2	
Software	3	1					15	18	3
Other	30	7		9	3		36	1	9
Year One/Two Common Year						58			
TOTAL	302	208	27	45	33	112	876	431	76

UD.3. Institutional

TABLE UD.3.1.

Total undergraduate degrees awarded by institution:
2007 to 2011.

INSTITUTION	2007	2008	2009	2010	2011
Acadia					31
Alberta	607	709	702	739	836
BCIT			18	27	36
Calgary	464	490	445	448	462
Cape Breton					0
Carleton	412	461	403	409	395
Concordia	354	408	407	421	350
Conestoga				10	9
Dal	253	277	266	291	469
ETS	707	732	680	620	724
Guelph	142	185	90	69	95
Lakehead	215	202	257	251	223
Laurentian	13	27	22	35	118
Laval	274	258	258	258	258
Manitoba	155	218	165	223	197
McGill	480	428	439	500	456
McMaster	487	503	504	569	582
Moncton	43	49	32	50	30
MUN	154	153	157	166	151
Ottawa	395	426	317	286	252
Polytechnique	631	645	502	576	583
Queen's	619	474	500	543	507
Regina	100	107	83	99	104
RMC	91	87	74	40	77
Ryerson	524	477	439	402	409
Saskatchewan	223	261	255	252	251
SFU	90	91	81	90	94
Sherbrooke	331	303	305	264	284
SMU	3				
Toronto	955	872	836	931	893
UBC	603	621	640	726	723
UBCO			0	112	103
UNB	286	287	260	206	210
UNBC		4	6	8	19
UOIT	80	132	140	225	158
UQAC	48	37	42	37	44
UQAM	14	8	10	7	4
UQAR	13	8	17	17	15
UQAT	11	13	21	27	18
UQO	5	5	6	6	1
UQTR	113	83	93	21	24
UVic	136	136	139	158	151
Waterloo	774	908	785	862	950
Western	319	296	247	246	208
Windsor	289	207	103	203	184
York	38	31	35	20	15
TOTAL	11451	11619	10781	11450	11703

TABLE UD.3.2.

Total undergraduate degrees awarded to female students by institution:
2007 to 2011.

INSTITUTION	2007	2008	2009	2010	2011
Acadia					4
Alberta	120	139	142	158	186
BCIT			3	2	2
Calgary	95	99	98	114	116
Cape Breton					0
Carleton	84	73	48	58	54
Concordia	68	64	76	71	51
Conestoga				0	0
Dal	56	60	35	63	108
ETS	50	60	56	50	68
Guelph	37	51	22	17	22
Lakehead	28	19	18	20	22
Laurentian	9	3	2	7	24
Laval	35	36	36	36	36
Manitoba	22	41	24	30	27
McGill	119	112	102	82	91
McMaster	91	116	117	90	98
Moncton	10	1	6	2	0
MUN	30	27	39	33	33
Ottawa	64	78	51	48	44
Polytechnique	126	123	99	128	127
Queen's	142	118	106	129	120
Regina	28	19	10	14	34
RMC	12	21	15	8	14
Ryerson	74	90	77	59	54
Saskatchewan	38	43	40	38	42
SFU	13	12	13	15	14
Sherbrooke	65	48	55	50	51
SMU	1				
Toronto	244	197	175	206	175
UBC	115	114	128	124	152
UBCO			0	18	19
UNB	33	49	50	31	45
UNBC		1	2	3	10
UOIT	16	15	15	25	12
UQAC	3	8	7	2	2
UQAM	2	1	1	1	0
UQAR	0	0	2	3	1
UQAT	1	1	3	2	1
UQO	1	1	0	1	0
UQTR	25	10	11	1	3
UVic	13	13	14	22	11
Waterloo	182	161	122	134	162
Western	53	48	50	36	48
Windsor	52	16	25	21	23
York	6	6	3	0	4
TOTAL	2163	2094	1898	1952	2110

TABLE UD.3.3.

Total undergraduate degrees awarded by institution and discipline: 2011.

INSTITUTION	BIOSYSTEMS	CHEMICAL	CIVIL	COMPUTER	ELECTRICAL	ENGINEERING PHYSICS	ENVIRONMENTAL	GEOLOGICAL	INDUSTRIAL OR MANUFACTURING	MATERIALS OR METALLURGICAL	MECHANICAL	MINING OR MINERAL	SOFTWARE	OTHER
Acadia														
Alberta		138	173	32	129	26				45	200	43		50
BCIT			21		4						11			
Calgary		74	56	27	77				5		139		11	73
Cape Breton														
Carleton			65	22	130	3	21				63		18	73
Concordia			114	24	44				26		108		34	
Conestoga											9			
Dal	4	42	62	3	33		28		25	12	53	21		
ETS			185		179				79		209		72	
Guelph	12			17			66							
Lakehead		17	98		44						58		6	
Laurentian		26									44	48		
Laval	9	11	60	14	30	20		6		10	78	2	5	13
Manitoba	12		58	13	33				2		79			
McGill		76	81		152					22	125			
McMaster		77	110	39	118	40				39	127		26	6
Moncton			17		3						10			
MUN			33	13	24						69			12
Ottawa	16	52	56	18	46						49		15	
Polytechnique		49	122	32	58	25		22	56	3	157	10	49	
Queen's		96	115	17	25	60		22			128	44		
Regina				13			14		42				11	24
RMC		3	25	10	5						15			19
Ryerson		46	81	22	62				25		99			74
Saskatchewan	15	39	65	8	19	12	4	16			73			
SFU						69					25			
Sherbrooke		49	62	27	55						91			
Toronto		99	109		250	157			65	44	158	11		
UBC	71		127	75	137	41	19	38		34	118	32		31
UBCO			53		14						36			
UNB	2	22	69	9	33			3			55		5	12
UNBC							19							
UOIT					28				6		92		5	27
UQAC				5	12			5		4	18			
UQAM					4									
UQAR					3						7			5
UQAT					14						4			
UQO				1										
UQTR		0.9			8.8				6.9		7.8			
UVic				17	48						74		12	
Waterloo		193	92	101	154		28	12			236		70	64
Western		48	54	3	32						51		14	6
Windsor			28		42		8		12		94			
York				7							6			2
TOTAL	141	1158	2191	569	2050	453	207	124	350	213	2976	211	353	491

TABLE UD.3.4.

Total undergraduate degrees awarded to women by institution and discipline: 2011.

INSTITUTION	BIOSYSTEMS	CHEMICAL	CIVIL	COMPUTER	ELECTRICAL	ENGINEERING PHYSICS	ENVIRONMENTAL	GEOLOGICAL	INDUSTRIAL OR MANUFACTURING	MATERIALS OR METALLURGICAL	MECHANICAL	MINING OR MINERAL	SOFTWARE	OTHER
Acadia														
Alberta		35	60	1	21	2				18	28	10		11
BCIT			1								1			
Calgary		33	15	4	14				3		25		3	19
Cape Breton														
Carleton			8	3	22	1	10				2		1	7
Concordia			27	2	3				5		8		6	
Conestoga														
Dal	1	11	11		4		10		8	1	7	1		
ETS			30		17				6		9		6	
Guelph	2						20							
Lakehead		5	12								4		1	
Laurentian		9									5	10		
Laval	5	5	11	1	5						8			1
Manitoba	4		9	2	6						6			
McGill		31	20		23					5	12			
McMaster		20	25	5	17	7				9	11		4	
Moncton														
MUN			13		2						15			3
Ottawa	6	17	10	1	3						6		1	
Polytechnique		25	22	3	8	6		9	21	2	23	2	6	
Queen's		32	31	3		11		14			18	11		
Regina				2			7		13				3	9
RMC		1	7	1	1						1			3
Ryerson		10	17	3	8				7		2			7
Saskatchewan	8	6	17			2	1	4			4			
SFU						14								
Sherbrooke		25	13		3						10			
Toronto		44	20		26	33			22	9	18	3		
UBC	26		36	7	29	6	10	7		6	12	6		7
UBCO			13		2						4			
UNB	1	8	15	2	3						7			9
UNBC							10							
UOIT					3						5		2	2
UQAC								1			1			
UQAM														
UQAR											1			
UQAT					1									
UQO														
UQTR		0			1				1		1			
UVic				2	3						5		1	
Waterloo		60	21	14	15		15	5			14		4	14
Western		19	13		4						8		2	2
Windsor			7		6		3		3		4			
York				2							1			1
TOTAL	53	396	484	58	250	82	86	40	89	50	286	43	40	95

A.3. POST GRADUATE STUDENT ENROLMENT

G.1. National

TABLE G.1.1.

Total full-time master's students: 2007 to 2011.

YEAR	2007	2008	2009	2010	2011
Cdn Male	4960	4826	4701	4977	5013
Cdn Female	1362	1462	1363	1421	1424
Visa Male	2190	2380	2643	3283	3639
Visa Female	704	733	765	900	1076
TOTAL	9216	9401	9473	10581	11152

TABLE G.1.2.

Total full-time doctoral students: 2007 to 2011.

YEAR	2007	2008	2009	2010	2011
Cdn Male	3236	3192	3161	3487	3288
Cdn Female	851	855	826	907	875
Visa Male	1960	2037	2289	2523	2752
Visa Female	418	449	537	613	743
TOTAL	6464	6533	6813	7530	7658

TABLE G.1.3.

Total part-time master's students: 2007 to 2011.

YEAR	2007	2008	2009	2010	2011
Cdn Male	1524	1667	1827	1921	1983
Cdn Female	382	438	477	518	447
Visa Male	125	136	154	102	197
Visa Female	32	44	47	24	34
TOTAL	2063	2285	2505	2565	2662

TABLE G.1.4.

Total part-time doctoral students: 2007 to 2011.

YEAR	2007	2008	2009	2010	2011
Cdn Male	240	243	306	315	381
Cdn Female	47	44	61	49	69
Visa Male	41	40	41	36	56
Visa Female	18	11	10	8	9
TOTAL	346	339	419	407	515

TABLE G.1.5.

Total full-time equivalent master's students by discipline: 2007 to 2011.

DISCIPLINE	2007	2008	2009	2010	2011
Biosystems	292	349	409	396	452
Chemical	795	708	835	924	1059
Civil	1743	1728	1776	1852	2048
Computer	281	299	285	312	337
Electrical	3030	3089	2723	2958	3020
Engineering Physics	212	159	145	153	167
Environmental	212	223	226	243	265
Geological	28	27	25	44	20
Industrial or Manufacturing	392	284	278	339	403
Materials or Metallurgical	216	187	230	237	219
Mechanical	1595	1680	1748	1976	1933
Mining or Mineral	119	152	121	136	156
Software	123	147	138	164	177
Other	898	1112	1385	1779	1802
TOTAL	9937	10144	10325	11513	12056

TABLE G.1.6.

Total full-time equivalent doctoral students by discipline: 2007 to 2011.

DISCIPLINE	2007	2008	2009	2010	2011
Biosystems	210	242	328	359	400
Chemical	689	679	748	805	850
Civil	1002	1017	1094	1111	1185
Computer	122	118	123	142	157
Electrical	2106	2068	2079	2228	2215
Engineering Physics	218	173	169	217	174
Environmental	73	90	88	99	94
Geological	5	6	9	13	7
Industrial or Manufacturing	152	127	122	144	224
Materials or Metallurgical	181	185	261	311	266
Mechanical	1046	1106	1156	1327	1323
Mining or Mineral	127	140	86	91	105
Software	10	9	18	16	18
Other	663	686	705	812	894
TOTAL	6602	6647	6986	7673	7913

TABLE G.1.7.

Total full-time equivalent female master's students by discipline:
2007 to 2011.

DISCIPLINE	2007	2008	2009	2010	2011
Biosystems	116	152	175	167	194
Chemical	256	242	277	304	323
Civil	469	456	446	510	569
Computer	57	58	55	52	62
Electrical	591	633	488	504	541
Engineering Physics	40	28	26	29	41
Environmental	81	71	69	68	88
Geological	3	5	7	14	8
Industrial or Manufacturing	69	71	69	84	103
Materials or Metallurgical	52	47	69	70	68
Mechanical	236	248	248	276	248
Mining or Mineral	25	39	39	41	48
Software	24	41	33	33	28
Other	200	261	303	366	347
TOTAL	2220	2351	2305	2521	2669

TABLE G.1.8.

Total full-time equivalent female doctoral students by discipline:
2007 to 2011.

DISCIPLINE	2007	2008	2009	2010	2011
Biosystems	61	85	128	131	153
Chemical	198	207	233	255	267
Civil	184	191	219	235	265
Computer	28	29	29	40	44
Electrical	315	319	304	337	365
Engineering Physics	48	25	26	31	25
Environmental	28	31	27	28	24
Geological	3	2	2	3	2
Industrial or Manufacturing	33	27	20	26	37
Materials or Metallurgical	41	40	65	73	59
Mechanical	174	181	176	208	212
Mining or Mineral	28	36	21	18	26
Software	1	1	5	4	3
Other	150	146	134	150	175
TOTAL	1291	1320	1388	1537	1658

TABLE G.1.9.

Total full-time equivalent foreign master's students by discipline:
2007 to 2011.

DISCIPLINE	2007	2008	2009	2010	2011
Biosystems	68	86	107	118	130
Chemical	342	281	322	365	433
Civil	406	395	508	534	636
Computer	92	109	116	139	156
Electrical	932	1046	1005	1339	1500
Engineering Physics	55	29	23	38	52
Environmental	77	75	83	85	102
Geological	5	4	4	9	1
Industrial or Manufacturing	138	110	106	146	183
Materials or Metallurgical	81	63	95	103	93
Mechanical	409	478	526	620	619
Mining or Mineral	40	71	48	47	65
Software	39	53	45	55	71
Other	285	380	492	634	744
TOTAL	2970	3181	3481	4233	4787

TABLE G.1.10.

Total full-time equivalent foreign doctoral students by discipline:
2007 to 2011.

DISCIPLINE	2007	2008	2009	2010	2011
Biosystems	56	62	101	113	124
Chemical	312	311	349	379	424
Civil	362	380	422	419	494
Computer	20	19	44	66	68
Electrical	711	748	807	900	1016
Engineering Physics	63	38	49	80	54
Environmental	32	30	24	30	35
Geological	1	2	5	7	3
Industrial or Manufacturing	51	37	39	57	96
Materials or Metallurgical	75	82	129	150	148
Mechanical	359	403	478	577	625
Mining or Mineral	42	58	42	43	53
Software	3	1	6	5	8
Other	323	331	355	324	377
TOTAL	2409	2502	2850	3150	3524

G.2. Provincial

TABLE G.2.1.

Total full-time equivalent master's students by province: 2007 to 2011.

PROVINCE	2007	2008	2009	2010	2011
AB	1414	1212	1618	1861	2013
BC	582	563	689	816	892
MB	170	156	155	170	187
NB	282	196	264	202	187
NL	146	154	157	199	231
NS	195	254	197	266	356
ON	3476	3702	4063	4273	4490
QC	3420	3639	2915	3377	3411
SK	253	269	267	348	290
TOTAL	9937	10144	10325	11513	12056

TABLE G.2.2.

Total full-time equivalent doctoral students by province: 2007 to 2011.

PROVINCE	2007	2008	2009	2010	2011
AB	888	795	1071	1144	1241
BC	622	651	660	729	818
MB	171	174	169	181	205
NB	155	95	171	123	106
NL	53	61	73	82	86
NS	68	110	82	89	144
ON	2406	2534	2694	2908	2957
QC	2075	2064	1899	2213	2160
SK	165	164	167	206	197
TOTAL	6602	6647	6986	7673	7913

TABLE G.2.3.

Total full-time equivalent female master's students by province: 2007 to 2011.

PROVINCE	2007	2008	2009	2010	2011
AB	298	253	368	434	439
BC	139	153	187	224	220
MB	38	34	35	39	40
NB	63	55	62	39	35
NL	42	47	41	41	50
NS	49	63	43	42	45
ON	809	897	884	916	1000
QC	710	778	613	689	747
SK	71	71	72	97	93
TOTAL	2220	2351	2305	2521	2669

TABLE G.2.4.

Total full-time equivalent female doctoral students by province: 2007 to 2011.

PROVINCE	2007	2008	2009	2010	2011
AB	160	155	205	223	260
BC	138	139	123	140	165
MB	25	27	23	25	34
NB	27	27	34	27	27
NL	7	8	9	13	14
NS	11	22	19	21	28
ON	485	508	550	594	620
QC	399	394	383	448	469
SK	40	40	40	48	42
TOTAL	1291	1320	1388	1537	1658

TABLE G.2.5.

Total full-time equivalent foreign master's students by province: 2007 to 2011.

PROVINCE	2007	2008	2009	2010	2011
AB	526	476	722	900	906
BC	175	200	272	321	399
MB	62	61	62	73	88
NB	165	115	107	88	93
NL	94	105	100	132	163
NS	77	135	105	157	225
ON	724	768	926	1109	1359
QC	1013	1177	1044	1260	1371
SK	133	145	141	193	183
TOTAL	2970	3181	3481	4233	4787

TABLE G.2.6.

Total full-time equivalent foreign doctoral students by province: 2007 to 2011.

PROVINCE	2007	2008	2009	2010	2011
AB	372	383	553	551	620
BC	240	272	363	394	477
MB	68	70	72	84	100
NB	86	57	81	64	65
NL	29	35	41	40	45
NS	18	36	29	37	57
ON	776	800	888	980	1046
QC	743	778	739	891	999
SK	78	71	84	109	116
TOTAL	2409	2502	2850	3150	3524

TABLE G.2.7.

Total full-time equivalent postgraduate student enrolment by province and discipline: 2011.

DISCIPLINE	AB	BC	MB	NB	NL	NS	ON	QC	SK	TOTAL
Biosystems	77	171	42	6		59	291	110	74	831
Chemical	687			70		23	770	326	34	1909
Civil	812	264	82	53	43	64	1040	874		3232
Computer	62	25			68		163	154	22	494
Electrical	559	506	159	47	42	130	2248	1504	39	5235
Engineering Physics	97	4				9	94	138		342
Environmental		29			9	23	207	30	62	359
Geological		15					12			27
Industrial or Manufacturing			109			23	179	279	38	627
Materials or Metallurgical	88	90				25	142	140		485
Mechanical	524	348		52	29	48	1295	884	76	3256
Mining or Mineral	42	93				4	70	53		261
Software		11					47	125	12	195
Other	305	155		66	125	92	868	955	130	2695
TOTAL	3253	1711	392	294	316	500	7426	5572	487	19948

TABLE G.2.8.

Total full-time equivalent female postgraduate student enrolment by province and discipline: 2011.

DISCIPLINE	AB	BC	MB	NB	NL	NS	ON	QC	SK	Total
Biosystems	34	55	9	4		25	127	50	34	337
Chemical	182			27		2	279	91	9	590
Civil	203	72	14	9	10	18	265	243		834
Computer	12	6			13		32	38	6	106
Electrical	100	99	35	4	10	7	370	275	6	906
Engineering Physics	17	2					18	30		66
Environmental		7			5	7	65	7	22	112
Geological		5					5			10
Industrial or Manufacturing			17			3	25	89	6	140
Materials or Metallurgical	24	24				4	37	38		127
Mechanical	65	54		5	3		192	125	16	461
Mining or Mineral	7	28					19	20		74
Software		1					5	24	2	31
Other	56	31		13	23	7	172	186	35	522
TOTAL	700	384	75	62	64	73	1611	1216	136	4316

G.3. Institutional

TABLE G.3.1.

Total full-time postgraduate students by institution: 2007 to 2011.

INSTITUTION	2007	2008	2009	2010	2011
Alberta	1144	1157	1382	1541	1541
Calgary	1035	753	1186	1333	1519
Carleton	337	299	300	540	572
Concordia	1776	2204	1237	1371	1517
Dal	242	336	263	342	491
ETS	796	494	594	737	804
Guelph	90	106	115	117	125
Lakehead	70	56	54	51	46
Laurentian	21	29	26	43	38
Laval	486	373	372	372	372
Manitoba	331	318	310	337	378
McGill	577	649	608	739	579
McMaster	546	534	565	659	643
Moncton	17	24	17	17	13
MUN	181	199	205	260	290
NSAC			6		
Ottawa	353	332	384	382	466
Polytechnique	1001	1125	1049	1142	1259
Queen's	397	413	415	438	450
Regina	124	133	127	148	173
RMC	119	109	112	119	100
Ryerson	512	614	580	603	582
Saskatchewan	279	290	297	396	300
SFU	124	128	138	196	211
Sherbrooke	389	356	426	473	482
Toronto	1119	1215	1286	1388	1450
UBC	798	843	936	1045	1072
UBCO			37	28	130
UNB	363	243	348	250	226
UOIT	21	41	103	151	151
UQAC	129	124	118	136	134
UQAR	11	14	39	24	16
UQAT	18	20	41	52	47
UQTR	70	60	65	219	92
UVic	222	222	220	231	257
Waterloo	905	1039	1151	1213	1244
Western	452	475	494	525	566
Windsor	395	345	406	451	456
TOTAL	15447	15669	16012	18067	18791

TABLE G.3.2.

Total part-time postgraduate students by institution: 2007 to 2011.

INSTITUTION	2007	2008	2009	2010	2011
Alberta	0	0	0	0	0
Calgary	373	281	309	333	274
Carleton	89	86	93	161	171
Concordia	112	163	95	97	104
Dal	28	38	24	30	26
ETS	159	182	222	303	450
Guelph	23	25	32	40	37
Lakehead	0	0	0	0	0
Laurentian	12	19	15	6	8
Laval	64	66	66	66	66
Manitoba	35	43	49	52	49
McGill	31	44	38	32	12
McMaster	124	142	493	388	481
Moncton	7	9	9	9	2
MUN	58	51	51	45	53
NSAC			0		
Ottawa	94	96	94	84	99
Polytechnique	83	225	0	74	88
Queen's	42	38	46	40	38
Regina	30	20	19	21	28
RMC	15	13	17	18	5
Ryerson	129	125	136	112	107
Saskatchewan	0	0	0	0	0
SFU	10	12	12	14	9
Sherbrooke	190	185	228	202	171
Toronto	134	142	145	156	192
UBC	78	73	46	41	36
UBCO			0	0	0
UNB	55	54	124	49	51
UOIT	8	15	34	27	32
UQAC	0	3	0	0	0
UQAR	2	2	0	0	0
UQAT	0	0	0	0	0
UQTR	30	21	24	27	21
UVic	9	9	0	0	0
Waterloo	263	286	339	403	397
Western	25	33	48	135	151
Windsor	31	29	23	5	15
TOTAL	2343	2529	2833	2969	3172

TABLE G.3.3.

Total full-time female postgraduate students by institution: 2007 to 2011.

INSTITUTION	2007	2008	2009	2010	2011
Alberta	218	228	282	327	359
Calgary	217	164	266	292	303
Carleton	71	56	59	105	110
Concordia	325	447	245	284	321
Dal	54	80	58	61	72
ETS	140	79	92	124	148
Guelph	32	28	29	26	29
Lakehead	17	8	6	7	5
Laurentian	0	5	3	7	7
Laval	107	72	72	72	72
Manitoba	61	59	56	61	71
McGill	123	142	160	152	128
McMaster	128	128	143	153	164
Moncton	6	6	3	3	3
MUN	44	48	48	51	61
NSAC			2		
Ottawa	89	117	70	69	104
Polytechnique	240	269	262	290	351
Queen's	87	93	83	101	112
Regina	38	36	34	30	40
RMC	29	24	25	23	19
Ryerson	78	102	101	112	99
Saskatchewan	69	72	77	112	92
SFU	37	29	34	41	41
Sherbrooke	72	61	68	86	85
Toronto	281	307	328	339	369
UBC	166	194	225	264	261
UBCO			5	3	28
UNB	68	73	86	55	52
UOIT	2	5	17	22	22
UQAC	40	34	26	33	33
UQAR	2	2	2	2	2
UQAT	5	3	8	10	5
UQTR	13	11	15	19	18
UVic	63	63	41	38	43
Waterloo	206	219	245	274	284
Western	86	103	95	104	116
Windsor	78	75	70	73	79
TOTAL	3290	3441	3437	3825	4108

TABLE G.3.4.

Total part-time female postgraduate students by institution: 2007 to 2011.

INSTITUTION	2007	2008	2009	2010	2011
Alberta	0	0	0	0	0
Calgary	73	54	55	99	39
Carleton	14	22	21	24	34
Concordia	18	22	14	13	22
Dal	4	7	4	3	3
ETS	32	33	38	54	77
Guelph	7	5	6	7	6
Lakehead	0	0	0	0	0
Laurentian	2	7	5	2	1
Laval	15	17	17	17	17
Manitoba	7	8	10	12	11
McGill	8	14	12	7	2
McMaster	20	30	107	68	81
Moncton	0	2	2	2	0
MUN	5	6	6	6	6
NSAC			0		
Ottawa	19	19	16	15	19
Polytechnique	19	56	0	15	20
Queen's	9	10	10	6	8
Regina	8	6	5	3	6
RMC	3	4	5	4	0
Ryerson	22	20	25	14	8
Saskatchewan	0	0	0	0	0
SFU	3	0	2	3	1
Sherbrooke	40	40	46	45	36
Toronto	34	37	37	36	37
UBC	18	16	14	17	11
UBCO			0	0	0
UNB	7	3	26	6	7
UOIT	1	1	5	3	4
UQAC	0	1	0	0	0
UQAR	0	1	0	0	0
UQAT	0	0	0	0	0
UQTR	8	4	6	4	2
UVic	3	3	0	0	0
Waterloo	52	55	67	80	77
Western	4	8	11	29	21
Windsor	10	6	6	2	2
TOTAL	464	518	577	598	558

TABLE G.3.5.

Total full-time postgraduate students by institution and discipline: 2011.

INSTITUTION	BIOSYSTEMS	CHEMICAL	CIVIL	COMPUTER	ELECTRICAL	ENGINEERING PHYSICS	ENVIRONMENTAL	GEOLOGICAL	INDUSTRIAL OR MANUFACTURING	MATERIALS OR METALLURGICAL	MECHANICAL	MINING OR MINERAL	SOFTWARE	OTHER
Alberta		242	408	62	227	97				88	271	42		104
Calgary	65	408	378		305						219			144
Carleton	22		91	6	234		40			7	64		3	105
Concordia			334		714				46		289		102	32
Dal	59	23	63		129	9	22		23	24	48	4		89
ETS			60		68				23		67		9	576
Guelph	21			32			72							
Lakehead					34		12							
Laurentian												38		
Laval	9	52	84		103					32	84	7		1
Manitoba	42		76		153				108					
McGill		72	82		218					79	128			
McMaster	48	68	53	23	153	75				39	82		27	74
Moncton														13
MUN			40	65	38		9				26			113
Ottawa	19	54	74		163		24				86			47
Polytechnique	101	139	130	152	179	138			161	27	156	46		30
Queen's		90	84		112	15		11			107	30		
Regina				20			49		34				11	59
RMC		9	9	11	16		6				12		10	27
Ryerson		36	100	73	153						145			75
Saskatchewan	74	34			39		9				76			69
SFU											59			151
Sherbrooke		60	130		141						141			10
Toronto	174	188	191		378					63	323			133
UBC	167		190		338	4	29	13		90	153	89		
UBCO			57		36						37			
UNB	5	64	33		37						45			43
UOIT					43						74			34
UQAC							30							104
UQAR														16
UQAT														47
UQTR					43				30					19
UVic				25	127						94		11	
Waterloo		178	174		455						199			238
Western		126	143		191				106					
Windsor			36		180		43		59	30	107			
TOTAL	806	1843	3020	469	5006	337	344	24	589	480	3093	256	173	2351

TABLE G.3.6.

Total part-time postgraduate students by institution and discipline: 2011.

INSTITUTION	BIOSYSTEMS	CHEMICAL	CIVIL	COMPUTER	ELECTRICAL	ENGINEERING PHYSICS	ENVIRONMENTAL	GEOLOGICAL	INDUSTRIAL OR MANUFACTURING	MATERIALS OR METALLURGICAL	MECHANICAL	MINING OR MINERAL	SOFTWARE	OTHER
Alberta														
Calgary	12	53	46		46						59			58
Carleton	11		30	1	93		7				11		2	16
Concordia			23		38				2		12		18	11
Dal			4		5	1	3			3	1			9
ETS			75		79				10		24		28	235
Guelph	1			16			19							
Lakehead														
Laurentian												8		
Laval	2	5	15		20					5	14	2		4
Manitoba	2		23		21				4					
McGill		1	1		2					1	7			
McMaster	6	32	40		59	12			3	3	92		20	214
Moncton														2
MUN			6	6	9						8			24
Ottawa	4	4	14		26		3				9			39
Polytechnique	1	2	17	6	7				31		7	1		15
Queen's		1	16		7			1			7	6		
Regina				4			8		7				3	5
RMC		-8		1	4		1						3	4
Ryerson		8	7	26	35						23			8
Saskatchewan														
SFU														9
Sherbrooke														171
Toronto		17	59		36					3	73			4
UBC	4		18		6			2			4	3		
UBCO														
UNB	1	6	19		10						7			8
UOIT					5						11			16
UQAC														
UQAR														
UQAT														
UQTR					9				12					1
UVic														
Waterloo		13	36		165						69			114
Western		25	53		36				37					
Windsor			2		2		2		2	2	6			
TOTAL	44	159	502	61	719	13	44	4	108	16	442	20	74	967

TABLE G.3.7.

Total full-time female postgraduate students by institution and discipline: 2011.

INSTITUTION	BIOSYSTEMS	CHEMICAL	CIVIL	COMPUTER	ELECTRICAL	ENGINEERING PHYSICS	ENVIRONMENTAL	GEOLOGICAL	INDUSTRIAL OR MANUFACTURING	MATERIALS OR METALLURGICAL	MECHANICAL	MINING OR MINERAL	SOFTWARE	OTHER
Alberta		92	119	12	43	17				24	36	7		9
Calgary	29	83	80		53						26			33
Carleton	9		20	3	44		17			4	6			7
Concordia			78		165				13		40		21	4
Dal	25	2	18		7		7		3	4				7
ETS			14		7				2		6		2	117
Guelph	5			8			17							
Lakehead					3		2							
Laurentian												7		
Laval	3	13	26		11					7	11	1		0
Manitoba	9		12		34				17					
McGill		18	30		34					22	24			
McMaster	24	26	18	7	35	15				11	7		4	15
Moncton														3
MUN			9	13	9		5				3			22
Ottawa	10	26	12		26		11				15			6
Polytechnique	46	41	44	37	34	30			62	9	26	19		3
Queen's		30	27		17	1		5			21	11		
Regina				5			16		6				1	12
RMC		2	1	1	2		3				3			7
Ryerson		16	23	11	23						16			10
Saskatchewan	34	9			6		4				16			23
SFU											10			31
Sherbrooke		19	34		16						15			1
Toronto	77	84	62		55					13	57			21
UBC	54		50		69	2	7	4		24	24	28		
UBCO			15		9						4			
UNB	3	26	7		2						4			9
UOIT					7						7			8
UQAC							7							26
UQAR														2
UQAT														5
UQTR					4				9					5
UVic				6	21						15		1	
Waterloo		51	47		81						37			69
Western		42	31		27				15					
Windsor			9		31		12		9	8	11			
TOTAL	327	579	785	103	874	65	107	9	135	126	441	73	29	454

TABLE G.3.8.

Total part-time female postgraduate enrolment by institution and discipline: 2011.

INSTITUTION	BIOSYSTEMS	CHEMICAL	CIVIL	COMPUTER	ELECTRICAL	ENGINEERING PHYSICS	ENVIRONMENTAL	GEOLOGICAL	INDUSTRIAL OR MANUFACTURING	MATERIALS OR METALLURGICAL	MECHANICAL	MINING OR MINERAL	SOFTWARE	OTHER
Alberta														
Calgary	6	8	5		4						3			14
Carleton	5		6	1	14		4				2		1	1
Concordia			8		7						2		3	2
Dal					2		1							0
ETS			21		1				1		1		5	48
Guelph				2			4							
Lakehead														
Laurentian												1		
Laval	1	1	6		1					2	5	0		1
Manitoba			6		5									
McGill											2			
McMaster		9	5		5	3					13		2	44
Moncton														
MUN			2	1	0						1			2
Ottawa	1	2	1		6		1				0			8
Polytechnique		1	4	2	1				10		1	1		1
Queen's		0	6		0						0	1		
Regina				1			3		1				1	1
RMC		-3					1						1	
Ryerson		1	2	1	2						1			1
Saskatchewan														
SFU														1
Sherbrooke														36
Toronto		8	11		7					1	10			0
UBC	1		7		1			1			1	0		
UBCO														
UNB	1	1	2		1						1			1
UOIT					1						0			2
UQAC														
UQAR														
UQAT														
UQTR									2					1
UVic														
Waterloo		5	7		23						8			35
Western		3	10		6				2					
Windsor			1		1		0		1					
TOTAL	14	34	109	8	88	3	14	1	17	3	51	4	13	199

A.4. POST GRADUATE DEGREES AWARDED

GD.1. National

TABLE GD.1.1.

Total master's degrees awarded by discipline: 2007 to 2011.

DISCIPLINE	2007	2008	2009	2010	2011
Biosystems	58	102	121	119	133
Chemical	289	305	286	321	331
Civil	643	649	682	707	702
Computer	118	127	143	138	140
Electrical	949	1094	1061	1086	1136
Engineering Physics	80	48	64	76	81
Environmental	88	74	75	86	92
Geological	8	5	8	9	11
Industrial or Manufacturing	147	138	107	114	152
Materials or Metallurgical	56	45	90	66	70
Mechanical	560	586	601	737	783
Mining or Mineral	44	44	43	41	34
Software	23	25	43	54	50
Other	323	420	452	501	715
Year One/Two Common Year				0	0
TOTAL	3386	3662	3776	4055	4429

TABLE GD.1.2.

Total doctoral degrees awarded by discipline: 2007 to 2011.

DISCIPLINE	2007	2008	2009	2010	2011
Biosystems	31	26	50	33	44
Chemical	95	110	119	132	118
Civil	132	121	151	171	143
Computer	11	14	30	26	17
Electrical	253	339	293	318	304
Engineering Physics	20	28	31	27	33
Environmental	8	6	17	15	10
Geological	0	1	4	3	2
Industrial or Manufacturing	14	10	27	14	15
Materials or Metallurgical	40	26	41	44	43
Mechanical	138	176	166	152	187
Mining or Mineral	22	31	6	11	13
Software	3	2	2	3	3
Other	66	68	90	76	84
Year One/Two Common Year				0	0
TOTAL	833	958	1027	1025	1017

TABLE GD.1.3.

Total master's degrees awarded to women by discipline: 2007 to 2011.

DISCIPLINE	2007	2008	2009	2010	2011
Biosystems	22	41	56	48	59
Chemical	91	87	88	111	119
Civil	178	180	199	158	200
Computer	30	30	21	23	27
Electrical	191	218	228	211	202
Engineering Physics	16	5	16	12	19
Environmental	35	33	28	23	26
Geological	4	1	3	3	3
Industrial or Manufacturing	33	39	30	23	40
Materials or Metallurgical	22	13	24	20	16
Mechanical	95	98	87	96	112
Mining or Mineral	12	7	13	9	15
Software	6	2	10	12	14
Other	73	110	108	113	140
Year One/Two Common Year				0	0
TOTAL	808	864	911	862	992

TABLE GD.1.4.

Total doctoral degrees awarded to women by discipline: 2007 to 2011.

DISCIPLINE	2007	2008	2009	2010	2011
Biosystems	4	7	17	16	17
Chemical	16	36	40	41	34
Civil	20	25	28	32	42
Computer	1	2	8	5	6
Electrical	42	58	58	41	40
Engineering Physics	6	4	5	7	5
Environmental	3	4	6	7	5
Geological	0	1	0	2	1
Industrial or Manufacturing	6	3	9	4	2
Materials or Metallurgical	3	6	6	9	7
Mechanical	16	26	31	29	23
Mining or Mineral	1	8	2	0	6
Software	1	0	0	1	2
Other	13	18	16	12	15
Year One/Two Common Year				0	0
TOTAL	132	198	226	206	205

TABLE GD.1.5.

Total master's degrees awarded to foreign students by discipline: 2007 to 2011.

DISCIPLINE	2007	2008	2009	2010	2011
Biosystems	9	36	32	28	33
Chemical	103	134	97	106	104
Civil	157	155	120	148	195
Computer	33	43	38	23	40
Electrical	207	294	282	361	481
Engineering Physics	13	12	19	20	22
Environmental	36	24	21	32	34
Geological	2	1	1	1	2
Industrial or Manufacturing	43	42	32	35	70
Materials or Metallurgical	14	14	28	25	31
Mechanical	88	120	141	148	263
Mining or Mineral	9	14	16	15	12
Software	1	0	13	20	19
Other	74	123	112	152	304
Year One/Two Common Year				0	0
TOTAL	789	1012	952	1114	1611

TABLE GD.1.6.

Total doctoral degrees awarded to foreign students by discipline: 2007 to 2011.

DISCIPLINE	2007	2008	2009	2010	2011
Biosystems	6	4	13	6	3
Chemical	20	26	27	29	35
Civil	19	17	25	32	20
Computer	0	0	9	2	5
Electrical	40	57	36	63	48
Engineering Physics	3	0	4	2	6
Environmental	2	1	4	3	5
Geological	0	0	2	0	0
Industrial or Manufacturing	2	0	7	0	2
Materials or Metallurgical	7	3	8	9	11
Mechanical	18	21	31	33	45
Mining or Mineral	5	4	2	5	3
Software	0	0	0	2	0
Other	13	17	16	15	21
Year One/Two Common Year				0	0
TOTAL	135	150	184	201	204

GD.2. Provincial**TABLE GD.2.1.**

Total master's degrees awarded by province: 2007 to 2011.

PROVINCE	2007	2008	2009	2010	2011
AB	459	520	418	369	505
BC	180	220	220	259	344
MB	56	59	30	49	45
NB	65	40	52	45	59
NL	54	53	50	47	68
NS	91	76	86	105	114
ON	1369	1556	1769	2106	2173
QC	1012	1053	1067	974	1021
SK	100	85	84	101	100
TOTAL	3386	3662	3776	4055	4429

TABLE GD.2.2.

Total doctoral degrees awarded by province: 2007 to 2011.

PROVINCE	2007	2008	2009	2010	2011
AB	108	130	116	120	130
BC	84	78	90	95	106
MB	23	24	17	21	27
NB	15	10	17	11	6
NL	15	8	9	12	10
NS	14	14	30	12	14
ON	365	402	438	471	463
QC	187	277	279	249	237
SK	22	15	31	34	24
TOTAL	833	958	1027	1025	1017

TABLE GD.2.3.

Total master's degrees awarded to women by province: 2007 to 2011.

PROVINCE	2007	2008	2009	2010	2011
AB	108	112	84	63	112
BC	40	62	62	62	111
MB	11	14	5	13	11
NB	6	14	14	11	10
NL	12	13	14	17	11
NS	15	16	23	21	16
ON	377	386	449	450	474
QC	206	219	240	211	219
SK	33	28	20	14	28
TOTAL	808	864	911	862	992

TABLE GD.2.4.

Total doctoral degrees awarded to women by province: 2007 to 2011.

PROVINCE	2007	2008	2009	2010	2011
AB	16	25	24	13	25
BC	11	13	13	16	18
MB	2	6	4	2	3
NB	0	5	3	3	1
NL	4	0	0	1	2
NS	3	2	16	4	2
ON	55	80	100	108	100
QC	37	62	61	47	51
SK	4	5	5	12	3
TOTAL	132	198	226	206	205

TABLE GD.2.5.

Total master's degrees awarded to foreign students by province: 2007 to 2011.

PROVINCE	2007	2008	2009	2010	2011
AB	177	224	145	144	246
BC	56	63	80	83	161
MB	13	27	10	20	22
NB	2	21	25	31	28
NL	35	39	33	29	56
NS	37	34	40	46	80
ON	258	346	324	429	578
QC	155	214	236	270	374
SK	56	44	59	62	66
TOTAL	789	1012	952	1114	1611

TABLE GD.2.6.

Total doctoral degrees awarded to foreign students by province: 2007 to 2011.

PROVINCE	2007	2008	2009	2010	2011
AB	24	21	16	24	26
BC	16	13	18	35	32
MB	1	7	3	3	3
NB	0	4	9	8	2
NL	4	2	2	2	4
NS	1	1	19	1	3
ON	52	57	59	71	73
QC	30	40	49	49	53
SK	7	5	9	8	8
TOTAL	135	150	184	201	204

TABLE GD.2.7.

Total master's degrees awarded by province and discipline: 2011.

DISCIPLINE	AB	BC	MB	NB	NL	NS	ON	QC	SK	Total
Biosystems	3	22	9			1	70	17	11	133
Chemical	89			17		1	178	34	12	331
Civil	133	97	9	10	4	4	266	167	12	702
Computer	15	1			13		85	19	7	140
Electrical	88	76	16	8	5	16	600	313	14	1136
Engineering Physics	11	35				2	15	18		81
Environmental		19			10	3	49	3	8	92
Geological		6					2	3		11
Industrial or Manufacturing			11			6	25	98	12	152
Materials or Metallurgical	10	10				3	38	9		70
Mechanical	120	66		6	5	7	400	167	12	783
Mining or Mineral	6	11					5	12		34
Software		1					12	35	2	50
Other	30			18	31	71	428	127	10	715
Year One/Two Common Year										0
TOTAL	505	344	45	59	68	114	2173	1021	100	4429

TABLE GD.2.8.

Total doctoral degrees awarded by province and discipline: 2011.

DISCIPLINE	AB	BC	MB	NB	NL	NS	ON	QC	SK	Total
Biosystems	5	10	2			1	15	8	3	44
Chemical	27			1			61	25	4	118
Civil	17	18	4	2	3	4	63	31	1	143
Computer	2	3			1		5	5	1	17
Electrical	37	23	16		1		170	50	7	304
Engineering Physics	7	6				1	9	10		33
Environmental							6		4	10
Geological		1						1		2
Industrial or Manufacturing			4			1	4	5	1	15
Materials or Metallurgical	9	10				1	15	8		43
Mechanical	15	30	1	3	2	5	77	52	2	187
Mining or Mineral	1	5				1	2	4		13
Software							3			3
Other	10				3		33	37	1	84
Year One/Two Common Year										0
TOTAL	130	106	27	6	10	14	463	237	24	1017

GD.3. Institutional

TABLE GD.3.1.

Total master's degrees awarded by institution: 2007 to 2011.

INSTITUTION	2007	2008	2009	2010	2011
Acadia					0
Alberta	188	188	206	206	334
BCIT			0	0	0
Calgary	271	332	212	163	171
Cape Breton					0
Carleton	66	129	133	148	147
Concordia	364	375	370	373	400
Conestoga				0	0
Dal	91	76	86	105	114
ETS	92	125	92	153	178
Guelph	27	27	34	34	40
Lakehead	17	13	23	21	20
Laurentian	5	6	7	6	0
Laval	52	44	44	44	44
Manitoba	56	59	30	49	45
McGill	124	108	150	101	35
McMaster	115	142	179	215	250
Moncton	5	3	6	7	8
MUN	54	53	50	47	68
Ottawa	121	121	91	116	128
Polytechnique	293	270	268	237	254
Queen's	76	87	90	74	92
Regina	54	33	27	35	36
RMC	24	27	33	32	0
Ryerson	135	188	237	269	247
Saskatchewan	46	52	57	66	64
SFU	21	21	15	29	40
Sherbrooke	49	100	118	51	86
SMU	0				
Toronto	308	329	359	391	401
UBC	136	176	176	192	237
UBCO			6	12	38
UNB	60	37	46	38	51
UNBC		0	0	0	0
UOIT	0	8	21	41	67
UQAC	9	9	11	9	11
UQAM	0	0	0	0	0
UQAR	2	2	3	2	5
UQAT	6	4	0	0	5
UQO	0	0	0	0	0
UQTR	21	16	11	4	3.4
UVic	23	23	23	26	29
Waterloo	268	275	320	436	452
Western	109	97	113	135	132
Windsor	98	107	129	188	195
York	0	0	0	0	2
TOTAL	3386	3662	3776	4055	4429

TABLE GD.3.2.

Total doctoral degrees awarded by institution: 2007 to 2011.

INSTITUTION	2007	2008	2009	2010	2011
Acadia					0
Alberta	68	75	72	65	71
BCIT			0	0	0
Calgary	40	55	44	55	59
Cape Breton					0
Carleton	21	25	37	45	28
Concordia	39	53	45	49	49
Conestoga				0	0
Dal	14	14	30	12	14
ETS	14	22	27	28	29
Guelph	7	2	6	6	2
Lakehead	0	0	0	0	0
Laurentian	0	0	0	1	0
Laval	12	19	19	19	19
Manitoba	23	24	17	21	27
McGill	52	54	57	54	26
McMaster	48	46	54	64	52
Moncton	0	0	0	0	0
MUN	15	8	9	12	10
Ottawa	24	34	26	22	24
Polytechnique	49	78	88	71	80
Queen's	25	36	47	43	30
Regina	9	3	13	10	7
RMC	2	2	3	3	0
Ryerson	0	3	13	18	21
Saskatchewan	13	12	18	24	17
SFU	3	5	7	6	8
Sherbrooke	16	39	32	22	25
SMU	0				
Toronto	95	109	94	101	106
UBC	65	57	74	69	82
UBCO			0	0	2
UNB	15	10	17	11	6
UNBC		0	0	0	0
UOIT	0	0	0	0	2
UQAC	4	6	8	4	8
UQAM	0	0	0	0	0
UQAR	0	0	0	0	0
UQAT	0	0	0	0	0
UQO	0	0	0	0	0
UQTR	1	6	3	2	0.6
UVic	16	16	9	20	14
Waterloo	87	98	97	94	116
Western	41	32	47	55	55
Windsor	15	15	14	19	27
York	0	0	0	0	0
TOTAL	833	958	1027	1025	1017

TABLE GD.3.3.

Total master's degrees awarded to women by institution: 2007 to 2011.

INSTITUTION	2007	2008	2009	2010	2011
Acadia					0
Alberta	48	40	41	34	66
BCIT			0	0	0
Calgary	60	72	43	29	46
Cape Breton					0
Carleton	10	30	25	36	36
Concordia	68	70	77	76	88
Conestoga				0	0
Dal	15	16	23	21	16
ETS	13	21	13	28	29
Guelph	13	9	10	11	10
Lakehead	6	6	6	1	3
Laurentian	1	1	1	1	0
Laval	0	9	9	9	9
Manitoba	11	14	5	13	11
McGill	38	24	42	22	5
McMaster	30	41	43	50	48
Moncton	1	0	4	1	0
MUN	12	13	14	17	11
Ottawa	27	38	21	31	23
Polytechnique	67	66	72	62	68
Queen's	15	20	30	14	20
Regina	18	9	7	4	6
RMC	3	6	4	10	0
Ryerson	37	36	40	47	42
Saskatchewan	15	19	13	10	22
SFU	3	7	5	6	13
Sherbrooke	9	21	22	10	14
SMU	0				
Toronto	95	79	98	104	104
UBC	33	51	50	49	83
UBCO			1	2	6
UNB	5	14	10	10	10
UNBC		0	0	0	0
UOIT	0	0	3	7	11
UQAC	3	2	2	2	4
UQAM	0	0	0	0	0
UQAR	0	0	1	1	1
UQAT	1	1	0	0	0
UQO	0	0	0	0	0
UQTR	7	5	2	1	0.6
UVic	4	4	6	5	9
Waterloo	88	73	105	95	108
Western	24	18	32	17	34
Windsor	28	29	31	26	35
York	0	0	0	0	0
TOTAL	808	864	911	862	992

TABLE GD.3.4.

Total doctoral degrees awarded to women by institution: 2007 to 2011.

INSTITUTION	2007	2008	2009	2010	2011
Acadia					0
Alberta	11	15	19	7	16
BCIT			0	0	0
Calgary	5	10	5	6	9
Cape Breton					0
Carleton	5	6	5	8	7
Concordia	7	13	8	8	7
Conestoga				0	0
Dal	3	2	16	4	2
ETS	2	9	1	4	5
Guelph	1	1	1	2	1
Lakehead	0	0	0	0	0
Laurentian	0	0	0	0	0
Laval	4	6	6	6	6
Manitoba	2	6	4	2	3
McGill	11	7	17	9	3
McMaster	5	7	7	16	16
Moncton	0	0	0	0	0
MUN	4	0	0	1	2
Ottawa	3	4	6	2	5
Polytechnique	9	17	19	16	20
Queen's	5	8	9	10	7
Regina	3	0	3	4	3
RMC	0	0	1	1	0
Ryerson	0	0	1	4	3
Saskatchewan	1	5	2	8	0
SFU	1	0	1	3	1
Sherbrooke	3	9	8	3	5
SMU	0				
Toronto	13	21	20	33	19
UBC	7	10	10	7	16
UBCO			0	0	0
UNB	0	5	3	3	1
UNBC		0	0	0	0
UOIT	0	0	0	0	0
UQAC	1	1	2	0	5
UQAM	0	0	0	0	0
UQAR	0	0	0	0	0
UQAT	0	0	0	0	0
UQO	0	0	0	0	0
UQTR	0	0	0	1	0
UVic	3	3	2	6	1
Waterloo	12	22	33	14	17
Western	7	5	12	13	17
Windsor	4	6	5	5	8
York	0	0	0	0	0
TOTAL	132	198	226	206	205

TABLE GD.3.5.

Total master's degrees awarded by institution and discipline: 2011.

INSTITUTION	BIOSYSTEMS	CHEMICAL	CIVIL	COMPUTER	ELECTRICAL	ENGINEERING PHYSICS	ENVIRONMENTAL	GEOLOGICAL	INDUSTRIAL OR MANUFACTURING	MATERIALS OR METALLURGICAL	MECHANICAL	MINING OR MINERAL	SOFTWARE	OTHER
Acadia														
Alberta		52	84	15	58	11				10	81	6		17
BCIT														
Calgary	3	37	49		30						39			13
Cape Breton														
Carleton	15		18		56		9			3	11		1	34
Concordia			79		206				14		64		33	4
Conestoga														
Dal	1	1	4		16	2	3		6	3	7			71
ETS			34		19				16		20		2	87
Guelph	11			10			19							
Lakehead					14		6							
Laurentian														
Laval		7	12		9					1	13	1		1
Manitoba	9		9		16				11					
McGill		8	3		14					2	8			
McMaster	6	10	10	12	70	10				13	17		11	91
Moncton														8
MUN			4	13	5		10				5			31
Ottawa	6	13	14		24		1				16			54
Polytechnique	17	12	16	19	40	18			66	6	31	11		18
Queen's		20	10		22	5		2			28	5		
Regina				7			5		12				2	10
RMC														
Ryerson		7	43	61	57						51			28
Saskatchewan	11	12	12		14		3				12			
SFU						34					6			
Sherbrooke		7	23		23						31			2
Toronto	32	60	77		101					16	77			38
UBC	22		80		55	1	19	6		10	33	11		
UBCO			17		11						10			
UNB		17	10		8						6			10
UNBC														
UOIT					26						21			20
UQAC							3	3						5
UQAM														
UQAR														5
UQAT														5
UQO														
UQTR					1.9				1.5					
UVic				1	10						17		1	
Waterloo		34	51		126						78			163
Western		34	28		37						33			
Windsor			15		67		14		25	6	68			
York				2										
TOTAL	133	331	702	140	1136	81	92	11	152	70	783	34	50	715

TABLE GD.3.6.

Total doctoral degrees awarded by institution and discipline: 2011.

INSTITUTION	BIOSYSTEMS	CHEMICAL	CIVIL	COMPUTER	ELECTRICAL	ENGINEERING PHYSICS	ENVIRONMENTAL	GEOLOGICAL	INDUSTRIAL OR MANUFACTURING	MATERIALS OR METALLURGICAL	MECHANICAL	MINING OR MINERAL	SOFTWARE	OTHER
Acadia														
Alberta		15	11	2	18	7				9	6	1		2
BCIT														
Calgary	5	12	6		19						9			8
Cape Breton														
Carleton			8		15						1			4
Concordia			14		16						19			
Conestoga														
Dal	1		4			1			1	1	5	1		
ETS														29
Guelph				1			1							
Lakehead														
Laurentian														
Laval		5	2		5					1	6			
Manitoba	2		4		16				4		1			
McGill		5	3		7					4	7			
McMaster	4	7	3	4	9	8				4	10		3	
Moncton														
MUN			3	1	1						2			3
Ottawa		3	4		13		3				1			
Polytechnique	8	13	8	5	12	10			5	3	11	4		1
Queen's		6	9		7	1					5	2		
Regina				1			4		1					1
RMC														
Ryerson			4		7						7			3
Saskatchewan	3	4	1		7						2			
SFU						6					2			
Sherbrooke		2	4		10						9			
Toronto	11	13	7		42					6	19			8
UBC	10		17		19			1		10	20	5		
UBCO			1								1			
UNB		1	2								3			
UNBC														
UOIT											2			
UQAC								1						7
UQAM														
UQAR														
UQAT														
UQO														
UQTR		0.3			0.3									
UVic				3	4						7			
Waterloo		20	8		50						20			18
Western		12	16		18						9			
Windsor			4		9		2		4	5	3			
York														
TOTAL	44	118	143	17	304	33	10	2	15	43	187	13	3	84

A.5. FACULTY MEMBERS BY INSTITUTION

F.1. Faculty Composition

TABLE F.1.1.

Faculty members by institution: 2011.

INSTITUTION	MALE PROFESSORS	FEMALE PROFESSORS	MALE ASSOCIATE PROFESSORS	FEMALE ASSOCIATE PROFESSORS	MALE ASSISTANT PROFESSORS	FEMALE ASSISTANT PROFESSORS	MALE INSTRUCTORS/LECTURERS	FEMALE INSTRUCTORS/LECTURERS	TOTAL FULL TIME EQUIVALENT
Acadia	2	0	0	0	1	1	1	0	5
Alberta	83	5	32	2	51	11	0	0	184
BCIT	37	5	0	0	0	0	0	0	42
Calgary	65	3	40	11	15	6	5	1	146
Cape Breton	2	0	0	0	0	0	4	0	6
Carleton	46	3	55	4	29	6	4	1	147
Concordia	68	6	47	9	19	8	8	1	166
Conestoga	8	1	0	0	0	0	1	0	10
Dal	43	1	16	8	10	1	10	1	90
ETS	59	8	74	13	15	0	61	8	238
Guelph	9	3	11	4	6	0	0	1	34
Lakehead	13	1	12	1	6	1	0	0	34
Laurentian	13	0	5	1	6	0	8	0	33
Laval	88	11	31	3	16	3	68	12	232
Manitoba	38	2	21	6	9	1	6	2	85
McGill	38	0	48	10	29	7	0	1	133
McMaster	64	5	52	3	13	4	1	0	142
Moncton	9	0	9	1	1	2	3	0	25
MUN	19	2	25	3	6	2	2	2	61
NSAC	2	0	3	0	4	0	0	2	11
Ottawa	44	5	31	11	15	6	5	0	117
Polytechnique	107	11	54	8	36	10	47	172	445
Queen's	61	13	45	5	13	1	9	1	148
Regina	12	2	12	4	5	0	8	1	44
RMC	16	0	26	1	17	3	12	1	76
Ryerson	54	5	38	5	13	1	19	1	136
Saskatchewan	35	1	24	3	12	2	2	2	81
SFU	18	2	7	1	9	3	5	1	46
Sherbrooke	57	2	21	3	10	2	106	17	218
SMU									
StFX	1	0	1	0	1	0	0	0	4
Toronto	104	6	50	13	29	14	16	4	236
UBC	72	5	45	6	17	5	30	13	193
UBCO	2	1	5	1	18	2	3	3	35
UNB	31	4	19	4	3	1	9	0	71
UNBC	1	0	5	0	0	0	0	0	6
UOIT	14	0	12	0	9	6	6	0	47
UPEI	1	0	2	0	1	0	0	1	5
UQAC	9	1	8	2	3	1	9	2	34
UQAM	2	0	3	0	4	0	0	0	9
UQAR	9	0	0	0	1	0	6	1	17
UQAT	4	0	6	0	1	0	19	3	33
UQO	9	1	2	2	1	0	1	0	16
UQTR	17	0	9	1	3	0	0	0	30
UVic	20	0	17	5	5	5	1	0	53
Waterloo	106	15	54	7	54	11	16	2	264
Western	34	2	33	5	11	4	7	0	95
Windsor	28	2	24	3	5	3	3	1	69
York	6	0	10	2	7	2	3	0	30
TOTAL	1580	134	1043	171	538	135	523	257	4380

A.6. CO-OP, INTERNSHIP AND PROFESSIONAL EXPERIENCE PROGRAMS

C.1. Industry Experience Options by Institution

TABLE C.1.

Co-op, Internships and Professional Experience Programs: 2011.

INSTITUTION	TYPE OF PROGRAM	MANDATORY/OPTIONAL
Alberta	Co-op	Optional
Calgary	Co-op & Internship	Optional
Cape Breton	Co-op	Optional
Carleton	Co-op	Optional
Concordia	Co-op & Internship	Optional
Conestoga	Co-op	Mandatory
Dal	Co-op	Optional
ETS	Co-op	Mandatory
Guelph	Co-op	Optional
Laurentian	Co-op	Optional
Laval	Co-op	Mandatory
Manitoba	Co-op & Internship	Optional
McGill	Co-op & Internship	Varies
McMaster	Co-op	Optional
Moncton	Co-op	Optional
MUN	Co-op	Mandatory
Ottawa	Co-op	Optional
Polytechnique	Co-op	Mandatory
Queen's	Internship	Optional
Regina	Co-op & Internship	Optional
Ryerson	Co-op & Internship	Optional
Saskatchewan	Internship	Optional
SFU	Co-op	Mandatory
Sherbrooke	Co-op	Mandatory
Toronto	Internship	Optional
UBC	Co-op	Optional
UBCO	Co-op	Optional
UNB	Co-op & Internship	Optional
UQAM	Co-op	Mandatory
UQAR	Co-op	Optional
UQO	Co-op	Mandatory
UQTR	Co-op	Optional
UVic	Co-op	Mandatory
Waterloo	Co-op	Mandatory
Western	Co-op & Internship	Optional
Windsor	Co-op	Optional

Appendix B

ACCREDITED ENGINEERING PROGRAMS BY INSTITUTION

- a. This listing of accredited programs includes only engineering programs, which lead to a bachelor's degree.
- b. Institutions listed have voluntarily requested that specific engineering programs be evaluated by the Canadian Engineering (Accreditation Board). The terminology requested by the institution is shown.
- c. A single date which follows the name of a program indicates the year of the first graduating class for which accreditation applies. It also applies to subsequent years and is still in force.
- d. A double date following the name of a program indicates the period (inclusive of both years) for which the program was accredited. This may occur if the institution has discontinued the program under that specific name or has not requested renewal of accreditation or if the Accreditation Board has denied such renewal.
- e. The appearance of a third date indicates that accreditation has been renewed from that particular year on, after a time interval.

ALBERTA, UNIVERSITY OF

Edmonton, Alberta

Faculty of Engineering

Agricultural Engineering:	1983-1995
Chemical Engineering:	1965-
Civil Engineering:	1965-
Computer Engineering:	1983-
Electrical Engineering:	1965-
Engineering Physics:	1988-
Materials Engineering:	1999-
Mechanical Engineering:	1965-
Metallurgical Engineering:	1965-2000
Mineral Engineering:	1976-1982
Mineral Process Engineering:	1983-1991
Mining Engineering:	1965-1975, 1983-
Petroleum Engineering:	1978-

BRITISH COLUMBIA INSTITUTE OF TECHNOLOGY

Burnaby, British Columbia

School of Construction and the Environment

Civil Engineering:	2010-
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School of Energy

Electrical Engineering:	2011-
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BRITISH COLUMBIA, THE UNIVERSITY OF

Vancouver, British Columbia

Faculty of Applied Science

Agricultural Engineering:	1965-1978
Bio-Resource Engineering:	1979-2001
Chemical Engineering:	1965-
Chemical and Biological Engineering:	2003-
Civil Engineering:	1965-
Computer Engineering:	2000-
Electrical Engineering:	1965-
Engineering Physics:	1965-
Environmental Engineering (jointly with Northern British Columbia):	2007-
Geological Engineering:	1965-
Integrated Engineering:	2003-
Materials Engineering:	2006-
Mechanical Engineering:	1965-
Metallurgical Engineering:	1965-1987
Metals and Materials Engineering:	1988-2005
Mineral Engineering:	1965-1979
Mining and Mineral Process Engineering:	1980-2005
Mining Engineering:	2004-

BRITISH COLUMBIA-OKANAGAN, THE UNIVERSITY OF

Kelowna, British Columbia

Faculty of Applied Science

Civil Engineering:	2010-
Electrical Engineering:	2010-
Mechanical Engineering:	2010-

CALGARY, THE UNIVERSITY OF

Calgary, Alberta

Schulich School of Engineering

Chemical Engineering:	1969-
Civil Engineering:	1969-
Computer Engineering:	2002-
Electrical Engineering:	1969-
Geomatics Engineering:	1996-
Manufacturing Engineering:	1997-
Mechanical Engineering:	1969-
Oil and Gas Engineering:	2001-
Software Engineering:	2002-
Surveying Engineering:	1982-1997

CARLETON UNIVERSITY

Ottawa, Ontario

Faculty of Engineering and Design

Aerospace Engineering:	1992-
Biomedical and Electrical Engineering:	2010-
Civil Engineering:	1965-
Communications Engineering:	2002-
Computer Systems Engineering:	1984-
Electrical Engineering:	1965-
Engineering Physics:	2003-
Environmental Engineering:	1996-
Mechanical Engineering:	1965-
Software Engineering:	2003-

CONCORDIA UNIVERSITY

Montréal, Québec

(formerly Sir George Williams University, 1959-1974)

Faculty of Engineering and Computer Science

Building Engineering:	1982-
Civil Engineering:	1969-
Computer Engineering:	1983-
Electrical Engineering:	1969-
Industrial Engineering:	1995-
Mechanical Engineering:	1969-
Software Engineering:	2002-

CONESTOGA COLLEGE

Kitchener, Ontario

School of Engineering and Information Technology

Mechanical Systems Engineering:	2010-
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DALHOUSIE UNIVERSITY

Halifax, Nova Scotia

(formerly Dal Tech, 1997-2000 and Technical University of Nova Scotia, 1981-1997 and Nova Scotia Technical College, 1907-1980)

Faculty of Engineering

Agricultural Engineering:	1974-2000
Biological Engineering:	1997-
Chemical Engineering:	1965-
Civil Engineering:	1965-
Computer Engineering:	2006-
Electrical Engineering:	1965-
Engineering Physics:	1987-1991
Environmental Engineering:	2006-
Industrial Engineering:	1969-
Materials Engineering:	2005-
Mechanical Engineering:	1965-
Metallurgical Engineering:	1965-1977, 1981-2005
Mineral Resources Engineering:	2007-
Mining Engineering:	1965-2006

ÉCOLE DE TECHNOLOGIE SUPÉRIEURE

Montréal, Québec

(affiliated with l'Université du Québec)

Génie de la construction:	1993-
Génie des opérations et de la logistique:	2008-
Génie des technologies de l'information:	2006-
Génie et gestion de la construction:	1990-1996
Génie électrique:	1990-
Génie logiciel:	2004-
Génie mécanique:	1990-
Génie de la production automatisée:	1990-

GUELPH, UNIVERSITY OF

Guelph, Ontario

School of Engineering

Agricultural Engineering:	1973-1995
Biological Engineering:	1973-
Engineering Systems and Computing:	1994-
Environmental Engineering:	1993-
Food Engineering:	1993-2000
Water Resources Engineering:	1973-

LAKEHEAD UNIVERSITY

Thunder Bay, Ontario

Faculty of Engineering

Chemical Engineering:	1974-
Civil Engineering:	1974-
Electrical Engineering:	1974-
Mechanical Engineering:	1974-
Software Engineering:	2002-

LAURENTIAN UNIVERSITY

Sudbury, Ontario

School of Engineering

Chemical Engineering:	2006-
Extractive Metallurgical Engineering:	1987-2006
Extractive Metallurgy:	1985-1986
Mechanical Engineering:	2011-
Mining Engineering:	1987-

LAVAL, UNIVERSITÉ

Québec, Québec

Faculté de foresterie, de géographie et de géomatique

Génie du bois:	2002-
Génie géomatique:	2007-

Faculté des sciences de l'agriculture et de l'alimentation

Génie agroenvironnemental:	2002-
Génie alimentaire:	1997-

Faculté des sciences et de génie

Génie chimique:	1965-
Génie civil:	1965-
Génie des eaux :	2009-
Génie électrique:	1965-
Génie géologique:	1965-
Génie informatique:	1993-
Génie logiciel:	2006-
Génie des matériaux et de la métallurgie:	1990-
Génie mécanique:	1965-
Génie métallurgique:	1965-1990
Génie des mines et de la minéralurgie:	1990-
Génie minier:	1965-1990
Génie physique:	1965-
Génie rural:	1973-2002

MANITOBA, THE UNIVERSITY OF

Winnipeg, Manitoba

Faculty of Engineering

Agricultural Engineering:	1971-1998
Biosystems Engineering:	1996-
Civil Engineering:	1965-
Computer Engineering:	1987-
Electrical Engineering:	1965-
Geological Engineering:	1965-2001
Industrial Engineering:	1987-2005
Manufacturing Engineering:	2003-
Mechanical Engineering:	1965-

MCGILL UNIVERSITY

Montréal, Québec

Faculty of Agricultural and Environmental Sciences

Bioresource Engineering:	2005-
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Faculty of Engineering

Agricultural Engineering (Macdonald College):	1971-2006
Chemical Engineering:	1965-
Civil Engineering:	1965-
Computer Engineering:	1993-
Electrical Engineering:	1965-
Materials Engineering:	2005-
Mechanical Engineering:	1965-
Metallurgical Engineering:	1965-2007
Mining Engineering:	1965-
Software Engineering:	2007-

MCMASTER UNIVERSITY*

Hamilton, Ontario

Faculty of Engineering

Ceramic Engineering:	1974-1998
Chemical Engineering:	1965-
Chemical Engineering & Bioengineering:	2006-
Civil Engineering:	1989-
Civil Engineering & Computer Systems:	1992-1995
Civil Engineering & Engineering Mechanics:	1965-1988
Computer Engineering:	1981-
Electrical & Biomedical Engineering:	2006-
Electrical Engineering:	1965-
Engineering Physics:	1974-
Manufacturing Engineering:	1982-2005
Materials Engineering:	1990-
Mechanical Engineering:	1965-
Mechatronics Engineering:	2009 -
Metallurgical Engineering:	1965-1997
Software Engineering:	2001-

*Graduates of programs at this institution may have completed additional non-technical studies, such as a management or society option, that will be listed on their transcripts. These transcripts contain wording such as "(Discipline) Engineering and Society" or "(Discipline) Engineering and Management". Only the engineering component of these programs is accredited by the Accreditation Board; thus, even though these options meet the accreditation requirements, only the base engineering programs are listed here.

MEMORIAL UNIVERSITY OF NEWFOUNDLAND

St. John's, Newfoundland

Faculty of Engineering and Applied Science

Civil Engineering:	1975-
Computer Engineering:	2002-
Electrical Engineering:	1975-
Mechanical Engineering:	1975-
Naval Architectural Engineering:	1986-1996
Ocean and Naval Architectural Engineering:	1997-
Shipbuilding Engineering:	1982-1985

MONCTON, UNIVERSITÉ DE

Moncton, Nouveau-Brunswick

Faculté d'ingénierie

Génie civil:	1972-
Génie électrique:	1998-
Génie industriel:	1975-2009
Génie mécanique:	1990-

NEW BRUNSWICK, UNIVERSITY OF

Fredericton, New Brunswick

Faculty of Engineering

Chemical Engineering:	1965-
Civil Engineering:	1965-
Computer Engineering:	2001-
Electrical Engineering:	1965-
Forest Engineering:	1972-
Geological Engineering:	1984-
Geomatics Engineering:	1999-
Mechanical Engineering:	1965-
Software Engineering:	2006-
Surveying Engineering:	1972-1999

NORTHERN BRITISH COLUMBIA, UNIVERSITY OF

Prince George, British Columbia

College of Science and Management

Environmental Engineering (jointly with British Columbia):	2007-
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NOVA SCOTIA TECHNICAL COLLEGE

(see Dalhousie University)

NSTC offered accredited engineering programs from 1965 to 1980.

NSTC a offert des programmes de génie agréés de 1965 à 1980.

NOVA SCOTIA, TECHNICAL UNIVERSITY OF

(see Dalhousie University)

TUNS offered accredited engineering programs from 1981 to 1996.
However, students who enrolled prior to April 1, 1997, and graduated after that date can request that their degree be in the name of TUNS.

ONTARIO INSTITUTE OF TECHNOLOGY, UNIVERSITY OF*

Oshawa, Ontario

Faculty of Engineering and Applied Science

Automotive Engineering :	2009-
Electrical Engineering:	2009-
Manufacturing Engineering:	2007-
Mechanical Engineering:	2008-
Software Engineering:	2009 -

Faculty of Energy Systems and Nuclear Science

Nuclear Engineering:	2007-
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* Graduates of programs at this institution may have completed additional non-technical studies, such as a management option, that will be listed on their degrees and transcripts. These degrees and transcripts contain wording such as "(Discipline) Engineering and Management". Only the engineering component of these programs is accredited by the Accreditation Board; thus, even though these options meet the accreditation requirements, only the base engineering programs are listed here.

OTTAWA, UNIVERSITY OF

Ottawa, Ontario

Faculty of Engineering

Biomedical Mechanical Engineering:	2009-
Chemical Engineering:	1965-
Civil Engineering:	1971-
Computer Engineering:	1990-
Electrical Engineering:	1965-
Mechanical Engineering:	1971-
Software Engineering:	2001-

POLYTECHNIQUE, ÉCOLE

Montréal, Québec

(affiliated with l'Université de Montréal)

Génie chimique:	1965-
Génie civil:	1965-
Génie électrique:	1965-
Génie géologique:	1965-
Génie industriel:	1973-
Génie informatique:	1989-
Génie logiciel:	2005-
Génie des matériaux:	1990-
Génie mécanique:	1965-
Génie métallurgique:	1965-1989
Génie des mines:	1991-
Génie minier:	1965-1991
Génie physique:	1965-

QUÉBEC EN ABITIBI-TÉMISCAMINGUE, UNIVERSITÉ DU

Rouyn-Noranda, Québec

Unité d'enseignement et de recherche en sciences appliquées

Génie électromécanique:	2000-
Génie mécanique:	2010-

QUÉBEC À CHICOUTIMI, UNIVERSITÉ DU

Chicoutimi, Québec

Département des sciences appliquées

Génie électrique:	2004-
Génie géologique:	1983-
Génie informatique:	1992-
Génie mécanique:	2004-
Génie unifié:	1981- 2009
Ingénierie de l'aluminium :	2008-

QUÉBEC À MONTRÉAL, UNIVERSITÉ DU

Montréal, Québec

Faculté des sciences

Génie microélectronique:	2007-
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QUÉBEC EN OUTAOUAIS, UNIVERSITÉ DU

Gatineau, Québec
(formerly Québec à Hull, Université du)

Module de l'ingénierie

Génie informatique: 2002-

QUÉBEC À RIMOUSKI, UNIVERSITÉ DU

Rimouski, Québec

Module de génie

Génie des systèmes électromécaniques: 1998-

Génie électrique : 2009-

Génie mécanique : 2009-

QUÉBEC À TROIS-RIVIÈRES, UNIVERSITÉ DU

Trois-Rivières, Québec

École d'ingénierie

Génie chimique: 1990-

Génie électrique: 1978-

Génie industriel: 1980-

Génie mécanique manufacturier: 1987-1999

Génie mécanique: 2000-

QUEEN'S UNIVERSITY

Kingston, Ontario

Faculty of Applied Science

Chemical Engineering: 1965-

Civil Engineering: 1965-

Computer Engineering: 2002-

Electrical Engineering: 1965-

Engineering Chemistry: 1979-

Engineering Physics: 1965-

Geological Engineering: 1975-

Materials and Metallurgical Engineering: 1992-2002

Mathematics and Engineering: 1974-

Mechanical Engineering: 1965-

Metallurgical Engineering: 1965-1991

Mining Engineering: 1965-

REGINA, UNIVERSITY OF

Regina, Saskatchewan

Faculty of Engineering and Applied Science

Electronic Information Systems Engineering: 1986-1994

Electronic Systems Engineering: 1995-

Environmental Systems Engineering: 1997-

Industrial Systems Engineering: 1984-

Petroleum Systems Engineering: 2003-

Regional Environmental Systems Engineering: 1990-1997

Regional Systems Engineering: 1984-1989

Software Systems Engineering: 2007-

Systems Engineering: 1981-1983

ROYAL MILITARY COLLEGE OF CANADA

Kingston, Ontario

Faculty of Engineering

Aeronautical Engineering: 2009-

Chemical Engineering: 1965-1981, 2001-

Chemical and Materials Engineering: 1992-2001

Civil Engineering: 1965-

Computer Engineering: 1983-

Electrical Engineering: 1965-

Engineering and Management: 1972-1995

Engineering Physics: 1975-1995

Fuels and Materials Engineering: 1982-1991

Mechanical Engineering: 1965-

RYERSON POLYTECHNICAL INSTITUTE

(see Ryerson University)

RPI offered accredited engineering programs in 1992.

RYERSON POLYTECHNIC UNIVERSITY (RPU)

(see Ryerson University)

RPU offered accredited engineering programs from 1992 to 2002.

RYERSON UNIVERSITY

Toronto, Ontario

(formerly Ryerson Polytechnical Institute, 1964-1992, and Ryerson Polytechnic University, 1992-2002)

Faculty of Engineering, Architecture and Science

Aerospace Engineering: 1992-

Chemical Engineering: 1992-

Civil Engineering: 1992-

Computer Engineering: 2006-

Electrical Engineering: 1992-

Industrial Engineering: 1992-

Mechanical Engineering: 1992-

SASKATCHEWAN, UNIVERSITY OF

Saskatoon, Saskatchewan

College of Engineering

Agricultural Engineering: 1965-1992

Agricultural and Bioresource Engineering: 1992-

Chemical Engineering: 1965-

Civil Engineering: 1965-

Computer Engineering: 2009-

Electrical Engineering: 1965-

Engineering Physics: 1965-

Environmental Engineering: 2011-

Geological Engineering: 1965-

Geological Engineering (Geophysics): 1975-1999

Mechanical Engineering: 1965-

Mining Engineering: 1974-1976

SHERBROOKE, UNIVERSITÉ DE

Sherbrooke, Québec

Faculté de génie

Génie biotechnologique:	2008-
Génie chimique:	1973-
Génie civil:	1965-
Génie électrique:	1965-
Génie informatique:	1997-
Génie mécanique:	1965-

SIMON FRASER UNIVERSITY

Burnaby, British Columbia

School of Engineering Science

Engineering Science:	1986-
Mechatronic Systems Engineering:	2011-

SIR GEORGE WILLIAMS UNIVERSITY (SGW)

(see Concordia University)

SGW offered accredited engineering programs from 1969 to 1974.

TORONTO, UNIVERSITY OF

Toronto, Ontario

Faculty of Applied Science and Engineering

Chemical Engineering:	1965-
Civil Engineering:	1965-
Computer Engineering:	1994-
Electrical Engineering:	1965-
Engineering Science:	1965-
Geo-Engineering:	1983-1990
Geological Engineering:	1965-1974
Geological Engineering & Applied Earth Science:	1975-1982
Geological and Mineral Engineering:	1991-1998
Industrial Engineering:	1965-
Materials Engineering:	1996-
Mechanical Engineering:	1965-
Metallurgical Engineering & Materials Science:	1986-1995
Metallurgy & Materials Science:	1965-1985
Mineral Engineering:	1999-

VICTORIA, UNIVERSITY OF

Victoria, British Columbia

Faculty of Engineering

Computer Engineering:	1988-
Electrical Engineering:	1988-
Mechanical Engineering:	1992-
Software Engineering:	2007-

WATERLOO, UNIVERSITY OF

Waterloo, Ontario

Faculty of Engineering

Chemical Engineering:	1965-
Civil Engineering:	1965-
Computer Engineering:	1989-
Electrical Engineering:	1965-
Environmental Engineering:	1999-
Geological Engineering:	1986-
Mechanical Engineering:	1965-
Mechatronics Engineering:	2008-
Nanotechnology Engineering:	2010-
Software Engineering:	2006-
Systems Design Engineering:	1974-

WESTERN ONTARIO, THE UNIVERSITY OF

London, Ontario

Faculty of Engineering

Chemical Engineering:	1965-1971. 2007-
Chemical and Biochemical Engineering:	1972-2006
Civil Engineering:	1965-
Computer Engineering:	2001-
Electrical Engineering:	1965-
Integrated Engineering:	2001-
Materials Engineering:	1968-1999
Mechanical Engineering:	1965-
Software Engineering:	2001-

WINDSOR, UNIVERSITY OF

Windsor, Ontario

Faculty of Engineering

Chemical Engineering:	1965-1990
Civil Engineering:	1965-
Electrical Engineering:	1965-
Engineering Materials:	1974-1991
Environmental Engineering:	1991-
Geological Engineering:	1972-1989
Industrial Engineering:	1974-
Mechanical Engineering:	1965-

YORK UNIVERSITY

Toronto, Ontario

Faculty of Science and Engineering

Computer Engineering:	2007-
Geomatics Engineering:	2007-
Space Engineering:	2007-

Appendix C

CANADIAN DISCIPLINE CATEGORIES AS USED IN THIS REPORT

This section provides a comprehensive listing of program titles, as provided by the universities, which are currently offered at both the undergraduate (accredited) and postgraduate levels in Canada. The “discipline” listing is the broad category within which a number of similar programs are grouped. While this report does not provide detailed data on individual programs, the information can be obtained by contacting Engineers Canada.

DISCIPLINE	PROGRAM	
Biosystems	Agricultural Engineering	
	Agricultural and Bioresource Engineering	
	Agricultural and Biosystems Engineering	
	Bio-Resource Engineering	
	Biological Engineering	
	Biomedical Engineering	
	Biomedical and Mechanical Engineering	
	Biomedical Mechanical Engineering	
	Biomedical: Computer Science	
	Biosystems Engineering	
	Chemical and Biological Engineering	
	Food Engineering	
	Forest Engineering	
	Génie agroalimentaire	
	Génie agroenvironnemental	
	Génie alimentaire	
	Génie biomédical	
Génie biotechnologique		
Chemical	Chemical and Biochemical Engineering	
	Chemical and Materials Engineering	
	Chemical and Petroleum Engineering	
	Chemical Engineering	
	Chemical Engineering & Bioengineering	
	Fuels and Materials Engineering	
	Génie biotechnologique	
	Génie chimique	
	Nanotechnology Engineering	
	Civil	Architectural Engineering
		Building Engineering
		Civil Engineering
		Civil and Environmental Engineering
Génie civil		
Génie de la construction		
Génie et gestion de la construction		
Infrastructure Protection Engineering		
International Security Engineering		
Ingénierie/réhabilitation des infrastructures urbaines		
Urban Planning		
Computer	Computational Engineering and Science	
	Computer Engineering	
	Computer Networks Engineering	
	Computer Systems Engineering	
	Electronic Information Systems Engineering	
	Electronic Systems Engineering	
	Engineering Systems and Computing	
	Génie informatique	
Software Engineering and Game Design		
Electrical	Biomedical and Electrical Engineering	
	Communications Engineering	
	Controls Engineering	
	Electrical Engineering	
	Electrical and Computer Engineering	
	Electrical & Biomedical Engineering	
	Energy Systems Engineering	
	Electro-mechanical Design	
	Electronics Engineering	
	Génie des opérations et de la logistique	
	Génie des technologies de l'information	
	Génie électrique	
	Génie électromécanique	
	Génie énergétique	
	Génie microélectronique	
	Information Systems Security Engineering	
	Quality Systems Engineering	
Sustainable Energy Engineering		
Systems and Computer Engineering		
Telecommunications Technical Management		

Engineering Physics

Engineering Chemistry
 Engineering Mathematics
 Engineering Physics
 Engineering Science
 Génie mathématiques
 Génie physique
 Mathematics and Engineering

Environmental

Clean Energy Engineering
 Energy and Environment Systems
 Environmental Engineering
 Environmental Systems Engineering
 Génie des eaux
 Maîtrise en Science de la Terre
 Sustainable & Renewable Energy
 Sciences de la terre et de l'atmosphère
 Génie ressources et systèmes
 Regional Environmental Systems Engineering
 Water Resources Engineering

Geological

Génie géologique
 Génie des sciences de la Terre
 Geological and Mineral Engineering
 Geological Engineering
 Geological Engineering (Geophysics)

Industrial or Manufacturing

Advanced Design and Manufacturing Institute
 Advanced Manufacturing and Process Systems
 Électronique industrielle
 Génie de la production automatisée
 Génie des opérations et de la logistique
 Génie industriel
 Génie mécanique manufacturier
 Génie sécurité et hygiène industrielles
 Industrial Engineering
 Industrial Systems Engineering
 Mechanical Manufacturing Engineering
 Manufacturing Engineering

Materials or Metallurgical

Ceramic Engineering
 Engineering Materials
 Extractive Metallurgical Engineering
 Génie des matériaux et de la métallurgie
 Génie des matériaux
 Génie métallurgique
 Ingénierie de l'aluminium
 Materials and Metallurgical Engineering
 Materials Engineering
 Metallurgical Engineering
 Metallurgical Engineering and Materials Science
 Metals and Materials Engineering
 Mining/Materials Engineering

Mechanical

Automotive Engineering
 Génie mécanique
 Mechanical Engineering
 Mechanical/Industrial Engineering
 Mechanical & Materials Engineering
 Mechanical & Manufacturing Engineering
 Mechanical & Mechatronic Engineering
 Mechanical Systems Engineering
 Mechatronics Engineering
 Mechatronic Systems Engineering
 Radiation Science Engineering
 Space Engineering

Mining or Mineral

Génie des mines
 Génie des mines et de la minéralurgie
 Génie minier
 Génie minéral
 Génie ressources minérales
 Maîtrise en génie minéral
 Mineral Engineering
 Mineral Process Engineering
 Mineral Resources Engineering
 Natural Resources Engineering
 Mining and Metallurgy Engineering
 Mining and Mineral Process Engineering
 Mining Engineering

Software	Génie logiciel	Naval Architectural & Marine Engineering
	Information Systems Science Engineering	Naval Architectural Engineering
	Software Engineering	Nuclear Engineering
	Software Engineering & Virtual Systems Design	Ocean and Naval Architectural Engineering
	Software Systems Engineering	Oil and Gas Engineering

Other	Aeronautical Engineering	Ocean Engineering
	Aerospace Engineering	Petroleum Engineering
	Civil and Geological Engineering	Petroleum Systems Engineering
	Engineering Systems and Computing	Process Engineering
	Fire Protection Engineering	Pulp & Paper Engineering
	Génie aérospatial	Surveying Engineering
	Génie du bois	Systems Design Engineering
	Génie géomatique	Technologie des systèmes
	Génie nucléaire	TIM (Systems)
	Génie papetier	Technology Management

Year One/Two	Common First and Second Year
Common Year	Engineering Entrance
	Year One - Common

The Engineering Science (E.Sci.) discipline involves science-intensive studies in engineering physics, engineering bioscience, engineering chemistry and other specializations offered by universities with accredited engineering science programs.

Several universities in Canada have common first-year and, in some cases, second-year programs. Students in these programs do not declare a discipline of study in their first year or, as applicable, second year. The total number of students in common first, second and qualifying year programs have been separated from the "Other" category, beginning with the 1997 data. This subdivision will be continued in future years.

Appendix D

ASSOCIATED UNIVERSITIES EXPLAINED

Dalhousie University, Royal Military College of Canada (RMC), and Associated Universities

The bachelor of engineering degree awarded by Dalhousie University is normally conferred in association with one of several associated universities. The program of studies is divided into two parts: the associated universities offer courses covering the first part of the degree and the Faculty of Engineering at Dalhousie offers courses covering the second part of the degree.

For accreditation purposes, the Accreditation Board considers the engineering programs at Dalhousie University to be five-year programs and visits the associated universities as part of the accreditation process. Associated universities, which are included with the accreditation of Dalhousie University programs, are the following:

- Acadia University
- University of Cape Breton
- Dalhousie University
- Mount Allison University
(no longer offering engineering programs as of 2000)
- Nova Scotia Agricultural College
- St. Francis Xavier University
- Saint Mary's University
- University of Prince Edward Island

Prior to 1995, the following two associated universities were included with the accreditation of the engineering programs at RMC. Both institutions have stopped offering engineering.

- Royal Roads Military College (prior to 1995)
- Collège militaire royal de Saint-Jean (prior to 1995)

Appendix E

SURVEY PROCEDURES AND DATA COMPILATION METHODOLOGY

Survey Procedures

Each year, Engineers Canada sends Canadian university faculties of engineering and applied science a questionnaire requesting statistics on full-time and part-time enrolment in their undergraduate and post-graduate programs. The institutions are also asked to provide data on the number of undergraduate and post-graduate degrees that have been awarded for the same calendar year being surveyed. Other information requested includes a gender breakdown for enrolment, as well as the number of foreign (visa) students.

Engineers Canada aims to produce a summary of the data by the spring, in order to support such activities as recruitment and planning for the upcoming academic year. The full report on engineering enrolment and degrees awarded is published and distributed several months later.

Compilation and Interpretation of Data

The enrolment and degrees awarded data is compiled into the Engineers Canada database. Prior to the publication of this report, summarized tables of the data are returned to the engineering faculties for verification.

The tabulations, which are found in Section A, list the enrolment and degrees awarded for undergraduate engineering programs that have been accredited by the Accreditation Board of Engineers Canada. Master's and doctoral programs that are offered by the universities with accredited undergraduate engineering programs are also included. Further information is provided on faculty composition as well as cooperative, internship and professional experience programs.

The data tabulations are further subdivided to provide national, provincial, and institutional level information on enrolment as well as degrees awarded by engineering discipline, gender, and visa students.

Each year, data is collected on undergraduate enrolment in engineering programs that will be seeking accreditation. These are newer programs that have not produced any graduates as of the year of reporting. The Accreditation Board undertakes accreditation of these programs in the year in which the first students will graduate.

Data Limitations

Because of the variable nature of the titles applied to university engineering programs, the discipline headings are general in nature. Some of the data reporting may represent the “best fit” of a particular program, as defined in Appendix C of this report.

Data Utilization

Information presented in this report can be used for a variety of purposes:

- Enabling engineering students to make informed academic and career choices;
- Allowing employers and governments to determine the availability of qualified professional engineers in traditional and emerging areas of practice;
- Keeping the engineering profession abreast of: current and future trends in engineering supply; the development and impact of technology; the needs of employers to allow the development of appropriate standards for academic programs and entry into the profession; and the maintenance of high practice standards in the interests of public safety and well-being; and,
- Assisting universities in preparing academic curricula and planning engineering programs that reflect advanced academic standards and emerging fields of study.

Further breakdown of the data can be requested by contacting Engineers Canada at:



Engineers Canada

1100-180 Elgin Street, Ottawa, Ontario K2P 2K3

Tel.: 613.232.2474

Fax: 613.230.5759

email: research@engineerscanada.ca