



BC Labour Market Profile



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BC Labour Market Profile

January 2013

Executive Summary

“Will our province address new challenges, embrace change, and shape it into opportunities that turn our strategic advantages into better, more secure outcomes for all British Columbians?”

BC Business Council, BC Chamber of Commerce
Agenda for Shared Prosperity, September 2012

British Columbia’s post-secondary education system is one of the province’s most important ‘strategic advantages.’ Built over generations by governments, communities, faculty, students, and alumni, British Columbia’s post-secondary institutions have been instrumental in shaping the province’s economic prosperity and quality of life.

Today, post-secondary education is more important than ever to securing prosperity into the future. In a global economy driven by intense competition, human capital will be the province’s most important resource and economic asset.

To bring this into sharper focus, British Columbia’s six research universities have prepared this Labour Market Profile illustrating the challenges and opportunities that lie ahead for the province’s rapidly evolving labour market.

Some key statistics and findings stand out:

- Analyzed by year, the provincial government’s *BC Labour Market Outlook 2010 to 2020* shows the province reaching a skills and talent deficit in 2016 where, for the first time, the number of jobs will exceed the number of qualified people province-wide. This deficit will continue to grow over the forecast period to 2020.
- In all regions of the province, the demand for people will increase at a higher rate than the growth in the labour force.
- In 2020, approximately 18,800 jobs requiring post-secondary education will go unfilled, including 8,400 requiring university credentials, 8,100 requiring college credentials, and 2,300 requiring trades training.
- BC has historically relied on in-migration to meet labour market supply needs; however, the number of migrants to BC has materially decreased in the past two years. The *BC Labour Market Outlook 2010 to 2020* assumes one-third of new jobs will be filled by in-migration.
- In 2011 in BC, 80 percent of jobs were in the services sector, and 20 percent were in the goods sector. The number of jobs in the services sector increased by 56 percent from 1990 to 2011, with significant growth occurring in the professional, scientific and technical sector.

- BC is ranked eighth in Canada for under-graduate degrees granted per 100,000 population and sixth overall for graduate degrees granted per capita in technology-related programs. However, in the past, BC has benefited by receiving more highly educated in-migrants.
- Based on 2011 survey results, 95 percent of university graduates work in positions commensurate with a post-secondary education. Due to higher earnings, university graduates contribute a proportionately larger share (41%) to the provincial income tax base.

Taken together these statistics show:

- A skills and talent deficit is imminent – with a tipping point just three years away, in 2016. If BC's regions are unable to attract migrants, labour market pressures will be even more intense.
- To offset the skills and talent deficit, BC will need to produce more post-secondary graduates at all levels – university, college and trades. BC currently does not have sufficient student spaces to offset the approaching skills and talent deficit.
- BC will need to continue to diversify its economy by developing workers who will contribute to a knowledge economy in high-growth areas, such as the technology sector.
- Post-secondary credentials, particularly at the university level, offer the greatest opportunities for employment. Contrary to what some popular commentary suggests, a university education leads to relevant jobs with good incomes.

Last October, the Research University Council of British Columbia put forward the *Opportunity Agenda for BC* which is directed at meeting these challenges. A practical and forward-looking plan, the Opportunity Agenda is built on three fundamental pillars:

1. *A space for every qualified student with 11,000 new funded spaces over four years in graduate and undergraduate university, college and trades programs.*
2. *A guarantee for students in need with expanded financial aid including grants, loan reductions and graduate scholarships.*
3. *A commitment to innovation and jobs by establishing Innovate BC, bringing together government, business, and post-secondary institutions to build BC's research and innovation potential, advance new opportunities and help drive economic growth.*

Investing in post-secondary education is fundamental to overcoming the skills and talent deficit. It is at the foundation of a successful provincial economic strategy that will foster growth, employment, social mobility, and environmental sustainability.

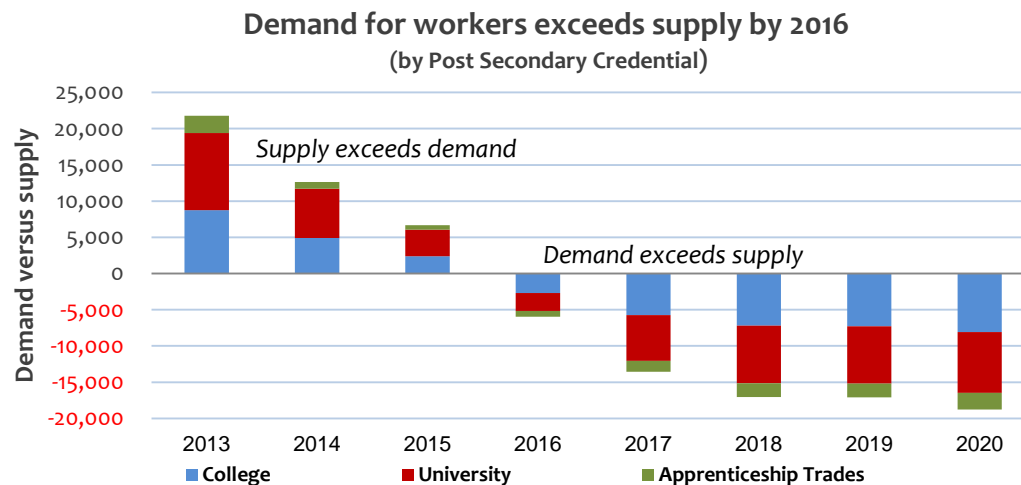
Acting on the *Opportunity Agenda for BC* will ensure British Columbia can look to the future with confidence as a leader in developing its citizens, in job creation, and in building a sustainable economy with better, more secure outcomes for all British Columbians.

BC Labour Market – Skills Deficit 2016 to 2020

The *BC Labour Market Outlook 2010 to 2020* forecasts an oversupply of workers which will disappear by 2015. In 2016, the demand for workers will exceed the supply of workers, creating a skills deficit.

Changes in the labour market are determined by factors such as economic growth, new labour market entrants, net provincial in-migration, and attrition of those leaving the workforce through retirement and mobility factors.

The financial crisis and global recession of 2008 led to higher unemployment rates around the world, with the supply of workers exceeding the demand at all levels. Notably, workers with higher skill levels maintained lower unemployment rates than did low-skilled workers because they had greater capacity to adapt to a wider range of positions. Now, with improved economic growth and the aging of the population, the demand for highly skilled workers is growing, with a forecast shortage starting in 2016.



BC Labour Market – BC Labour Market Outlook 2010 to 2020

Each year through the forecast period from 2016 to 2020 shows an undersupply of qualified workers or a skills deficit. For example, in the year 2020, 18,800 jobs requiring a

post-secondary education will go unfilled unless action is taken. Of these, 8,400 will require university training, 8,100 college training and 2,300 apprenticeship training.

Supply Greater Than or Less Than Demand by Year

Credential	2013	2014	2015	2016	2017	2018	2019	2020
University	10,641	6,773	3,642	-2,470	-6,290	-7,953	-7,881	-8,372
College	8,770	4,927	2,406	-2,703	-5,747	-7,197	-7,301	-8,091
Apprenticeship Trades *	2,363	957	643	-769	-1,543	-1,893	-1,901	-2,301
Sub-total Post Secondary	21,774	12,656	6,690	-5,942	-13,580	-17,043	-17,083	-18,764
High school diploma	5,349	2,806	1,523	-1,531	-3,297	-4,081	-4,141	-4,754
Less than high school	810	351	175	-307	-562	-677	-691	-814
Total Shortfall	27,933	15,812	8,387	-7,780	-17,438	-21,800	-21,914	-24,331

*As identified in the BC Trades Occupation Outlook 2010 to 2020

Source: Ministry of Jobs, Tourism and Skills Training

BC Labour Market – Employment by Sector

In BC, in 2011 there were 2.275 million jobs; 80% were in the services sector, and 20% were in the goods sector.

The number of jobs in the services sector increased by 56% from 1990 to 2011; whereas the number of jobs in the goods sector increased by 15%.

BC will need to continue to diversify its economy by developing workers who will contribute to a knowledge economy in high growth areas, such as the technology sector.

British Columbia Employment by Industry, Annual Averages

	1990	2011	2011 % of Total Jobs	% Incr (Decr) from 1990 to 2011
	(000's)			
Goods Sector				
Construction	119.7	204.6	9.0%	70.9%
Manufacturing	176.6	163.9	7.2%	-7.2%
Forestry, Fishing, Mining, Oil and Gas	52.1	40.1	1.8%	-23.0%
Agriculture	28.1	26.1	1.1%	-7.1%
Utilities	12.5	12.8	0.6%	2.4%
Goods Sector	389.0	447.5	19.7%	15.0%
Services Sector				
Trade - Wholesale and Retail	264.7	355.0	15.6%	34.1%
Health Care and Social Assistance	148.8	261.3	11.5%	75.6%
Professional, Scientific and Technical Services	87.6	182.1	8.0%	107.9%
Accommodation and food services	115.2	181.8	8.0%	57.8%
Educational Services	89.0	167.1	7.3%	87.8%
Finance, Insurance, Real Estate and Leasing	102.1	139.4	6.1%	36.5%
Transportation and Warehousing	91.9	124.1	5.5%	35.0%
Information, culture and recreation	68.7	109.4	4.8%	59.2%
Public administration	89.9	108.9	4.8%	21.1%
Other services	75.6	103.9	4.6%	37.4%
Business, Building and Other Support Services	37.1	94.2	4.1%	153.9%
Services Sector	1,170.6	1,827.2	80.3%	56.1%
Total Employment	1,559.6	2,274.7	100.0%	45.9%
Goods Sector % of total Jobs	24.9%	19.7%		
Services Sector % of total Jobs	75.1%	80.3%		

Source: BC Stats

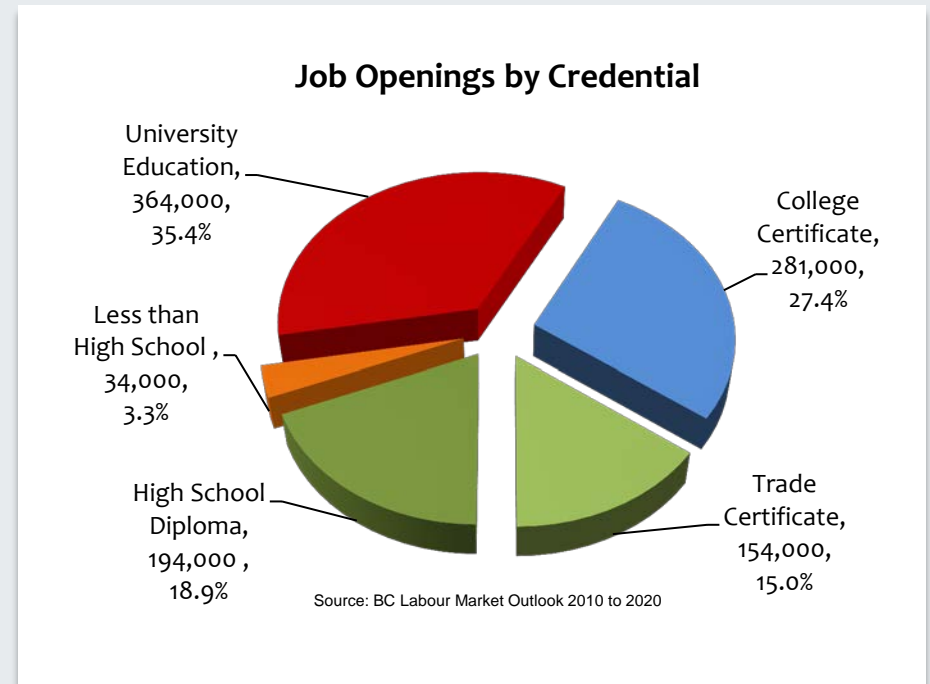
BC Labour Market – Job Openings 2010 to 2020

In BC, over the ten year period to 2020, 1,027,000 job openings are expected.

Close to two-thirds of job openings (676,400) will be due to replacement demand as a result of retiring workers and aging population and the other one-third of job openings (351,000) will be due to the new jobs that result from economic growth.

Approximately 78 percent of job openings over the ten-year period from 2010 to 2020 are expected to require post-secondary education and training.

The *BC Labour Market Outlook 2010 to 2020* assumes that 1/3 of total job openings will be filled by international and inter-provincial in-migration.

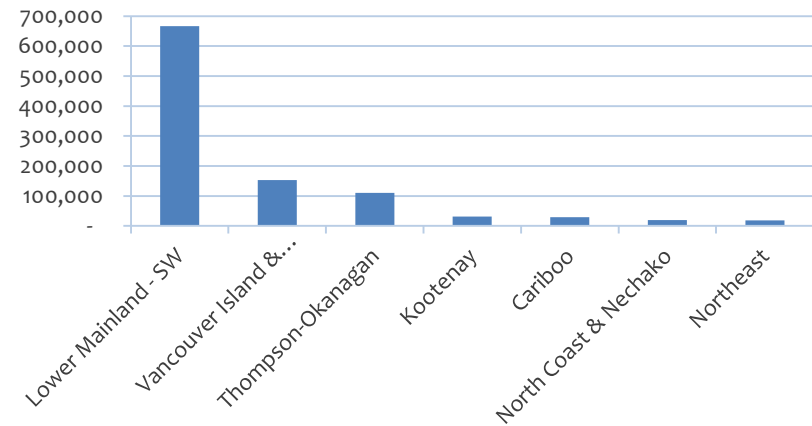


BC Labour Market – Regional Job Openings 2010 to 2020

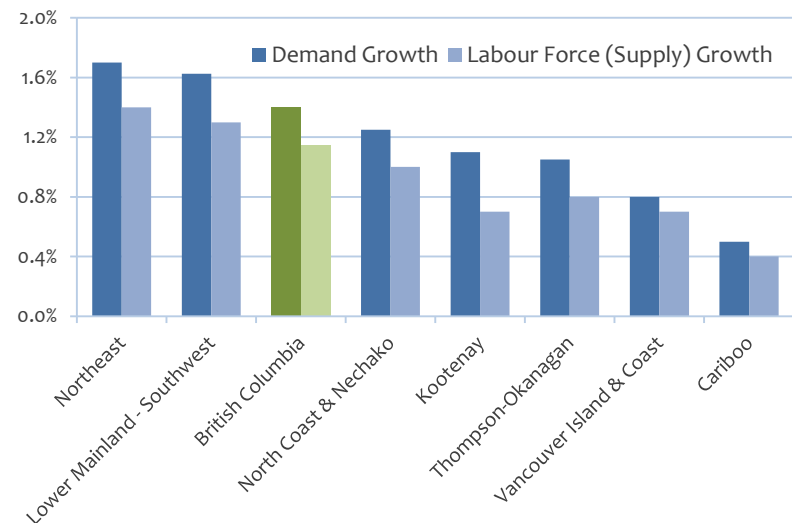
In all regions of the province demand for workers exceeds supply over the forecast period, growing by an annual average rate of 1.4 percent. The three most populated regions account for 90 percent of the total projected job openings in the province.

The largest number of job openings is expected in the Mainland/Southwest (666,300 job openings). This is followed by Vancouver Island/Coast (152,600); the Thompson-Okanagan (110,300); the Kootenays (31,110); the Cariboo (29,170); the North Coast Nechako (19,980) and the Northeast (18,020).

Job Openings by Region 2010 to 2020
Total Openings Equal 1,027,400



Relative Demand is Expected to Grow Faster than the Labour Force in all Regions from 2010 to 2020



BC Labour Market – Inter-provincial Migration of Post-secondary Graduates

Alberta and BC gained the most post-secondary graduates of all the provinces through interprovincial migration between 2001 and 2006. Overall, Alberta had a net increase of 28,000 post-secondary graduates and BC had a net increase of 15,800. And, until recently,

BC continued to be a significant net recipient of inter-provincial in-migration.

However, BC and Alberta were 8th and 7th respectively in undergraduate degrees granted per 100,000 population produced in 2009/10.

Net number of persons aged between 25 and 64 who moved to a province or territory different than the one they lived in five years earlier by level of educational attainment, provinces and territories, 2006

Provinces/Territories	Level of educational attainment								Total
	Less than high school	High school diploma	Sub-total No Post secondary	Trades certificate	College diploma	University certificate or diploma below bachelor level	University degree	Sub-total Post Secondary	
Atlantic Provinces	-395	-1,715	-2,110	-1,215	-825	-525	-6,650	-9,215	-11,325
Quebec	75	-1,400	-1,325	820	-1,505	-835	-3,920	-5,440	-6,765
Ontario	-3,695	-4,025	-7,720	-3,925	-5,555	20	-750	-10,210	-17,930
Manitoba	-1,810	-2,535	-4,345	-1,390	-2,245	-810	-4,440	-8,885	-13,230
Saskatchewan	-855	-2,985	-3,840	-1,400	-2,330	-820	-5,415	-9,965	-13,805
Alberta	6,420	9,905	16,325	5,865	9,355	2,015	10,760	27,995	44,320
British Columbia	450	2,875	3,325	1,530	3,285	1,110	9,890	15,815	19,140

Source: Statistics Canada, Census of Population, 2006

BC Labour Market – International and Inter-provincial In-migration

Net migration has decreased materially in the past two years, versus the preceding five years; a decrease of approximately 25,500 migrants on average, or 43% per year.

The 2010 BC Stats forecast for net in-migration for the period 2010 to 2016 was approximately 54,000

per year, above the actual numbers for 2010/11 and 2011/12.

As noted, BC has historically relied on inter-provincial in-migration to help meet its labour market supply needs and its talent capacity.

British Columbia Migration Components

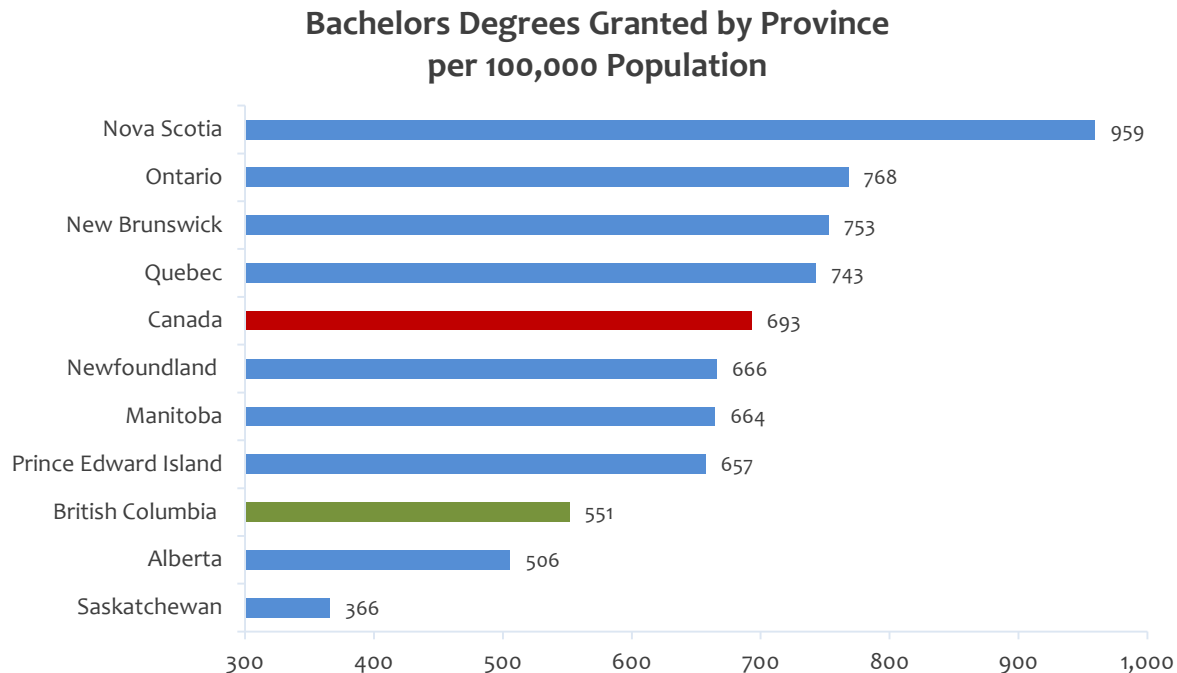
Year	International Net	Inter-provincial Net	Total Net Migration	
2005-06	42,486	8,800	51,286	5 year avg 57,438
2006-07	39,625	15,005	54,630	
2007-08	47,607	14,643	62,250	
2008-09	52,611	9,995	62,606	
2009-10	47,692	8,728	56,420	
2010-11	31,231	190	31,421	2 yr avg 32,899
2011/12	39,024	-4,648	34,376	

Source: BC Stats

Credentials – Undergraduate Degrees Granted by Province

BC is ranked eighth and is behind the Canadian average for undergraduate degrees granted in BC per 100,000 population. (For example, BC produces 27.7 undergraduate engineers per 100,000 population versus the Canadian average of 46.1).

BC would need to increase its university undergraduate degree granting capacity by over 30% to catch up to Ontario. In-migration has historically increased the number of persons in the BC population with undergraduate degrees.



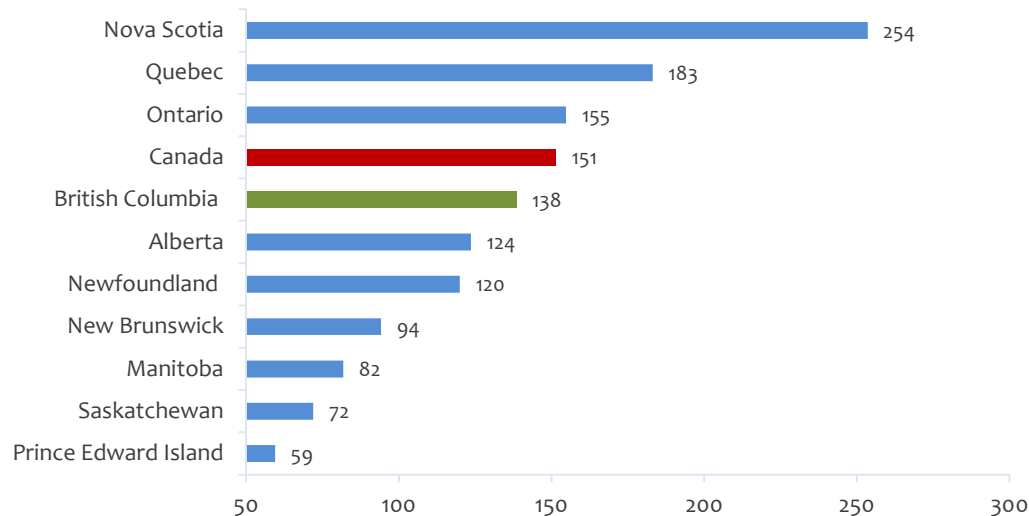
Source: StatsCan

Credentials – Graduate Degrees Granted by Province

BC is ranked fourth (behind Nova Scotia, Quebec and Ontario respectively), and is behind the Canadian average, for graduate degrees granted in BC per 100,000 population.

BC has achieved its relative rank by materially over-producing graduate students relative to funded students. For example, BC's research universities in 2011/12 received provincial funding for 10,900 graduate students and produced 15,500 graduate students.

**Graduate Degrees Granted by Province
per 100,000 Population**



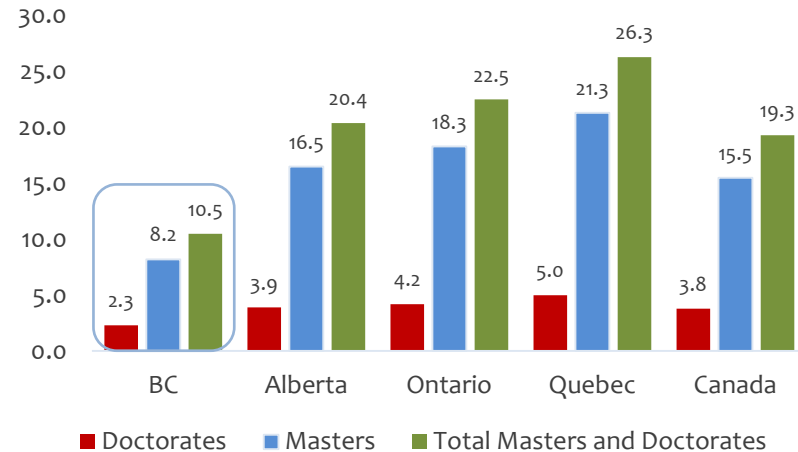
Source: StatsCan

Credentials – Doctorates & Masters Degrees in Technology-Related Programs

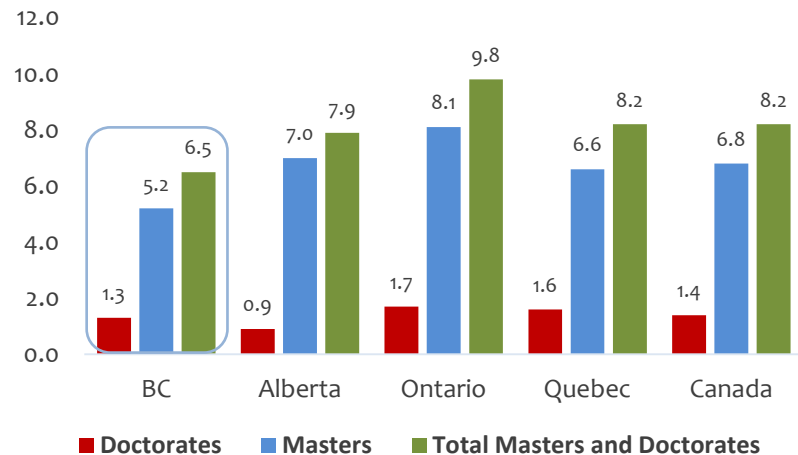
For graduate degrees granted per population in technology-related programs, such as mathematics and engineering, BC is farther behind the Canadian average, ranking sixth overall.

BC is behind its major comparator provinces (Alberta, Ontario and Quebec) in mathematics, and is materially behind in engineering.

Engineering, Architecture & Related Technologies
Graduate Degrees per 100,000 Population 15+



Mathematics, Computer & Information Sciences
Graduate Degrees per 100,000 Population 15+



Credentials – Highest Educational Attainment

BC's highest level of educational attainment is close to the Canadian average, although BC produces fewer degrees per capita than other provinces. Historically this can be attributed to:

- Immigrants are better educated than the average Canadian due to an immigration policy that favours highly-educated immigrants, and BC has a higher rate of immigration than other provinces (with the exception of Ontario);
- BC has historically had a net gain of inter-provincial migrants with a post-secondary credential (declines in inter-provincial immigration will negatively impact BC's talent capacity).

Educational Attainment by Select Province

	Canada	Que	Ont	Alta	BC
No degree, certificate or diploma	24%	25%	22%	23%	20%
High school graduation certificate	26%	22%	27%	26%	28%
Sub-total no post-secondary credential	49%	47%	49%	50%	48%
Trades certificate or diploma	11%	15%	8%	11%	11%
College certificate or diploma	17%	16%	18%	18%	17%
University certificate or diploma below bachelor level	4%	5%	4%	4%	5%
Sub-total College or Trade certificate or diploma	33%	36%	31%	33%	33%
Bachelor's degree	12%	11%	13%	12%	12%
University certificate or diploma above bachelor level	2%	2%	2%	1%	2%
Medical degree	1%	0%	1%	1%	1%
Master's degree	3%	3%	4%	3%	4%
Earned doctorate	1%	1%	1%	1%	1%
Sub-total University degree	18%	16%	20%	17%	19%
	100%	100%	100%	100%	100%

Source: StatsCan 2006 Census of Population

Employment Outcomes – Baccalaureate Graduate – 2 and 5 years out

The 2011 Baccalaureate Graduate Survey targeted former students who graduated with a bachelor's degree in 2009 (2 years out) and 2006 (5 years out).

Information was collected on their employment outcomes, further education, and student finances.

Within five years of graduating, 95% of graduates work at positions that are commensurate with their education. Note, that it may not be in the field they graduated in, however, this indicates a transferability of skills to other occupations that allows graduates to successfully adapt to labour market conditions.

It is also significant to note the rapid shift toward higher incomes as graduates gain experience (an average increase from \$51,047 to \$65,678 or 28.7% over three years).

Baccalaureate Graduate Survey Results

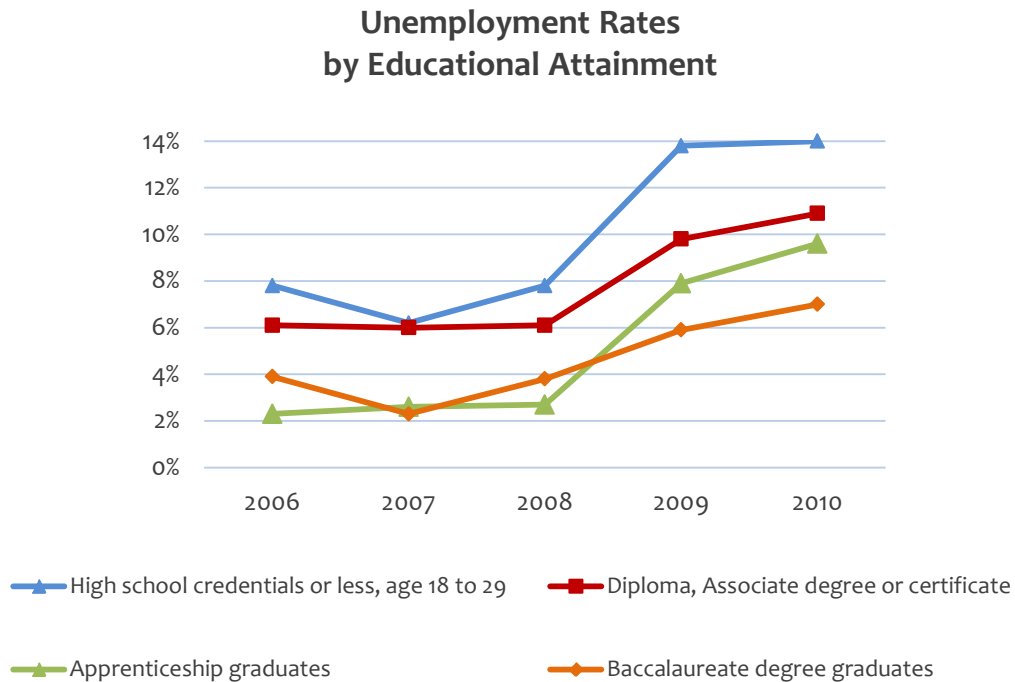
(Data for RUCBC universities)

LABOUR FORCE STATUS	2011 Surveys	
	2009 grads 2 years out	2006 grads 5 years out
Employment Status of those IN Labour Force:		
Employed	92%	95%
Have a Paid Job Lined Up	1%	1%
Unemployed	7%	5%
<i>Total Labour Force</i>	100%	100%
How related is your main job to your program?		
Very Related	43%	40%
Somewhat Related	30%	32%
Not Very Related	13%	16%
Not At All Related	15%	12%
<i>Total</i>	100%	100%
Gross Annual Income from Main Job:		
Less than \$20,000	10%	0%
\$20,000 to \$39,999	29%	17%
\$40,000 to \$59,999	37%	37%
\$60,000 to \$79,999	16%	27%
\$80,000 to \$99,999	5%	11%
\$100,000 and Above	3%	8%
<i>Total</i>	100%	100%
Median Annual Income (full-time)	\$47,999	\$58,000
Average Annual Income (full-time)	\$51,047	\$65,678
National Occupation Classification - Skill Level of Main Job:		
A. University education (includes management)	62%	78%
B. College education/trade apprenticeship	22%	17%
<i>Sub-total Post Secondary Education</i>	84%	95%
C. Secondary school + job-specific training	14%	5%
D. No formal education	2%	0%
<i>Total</i>	100%	100%

Source: BC Stats Baccalaureate Survey

Employment Outcomes – Unemployment Rates by Educational Attainment

Students who have completed a post-secondary credential typically have greater success at obtaining and maintaining employment than those who do not.



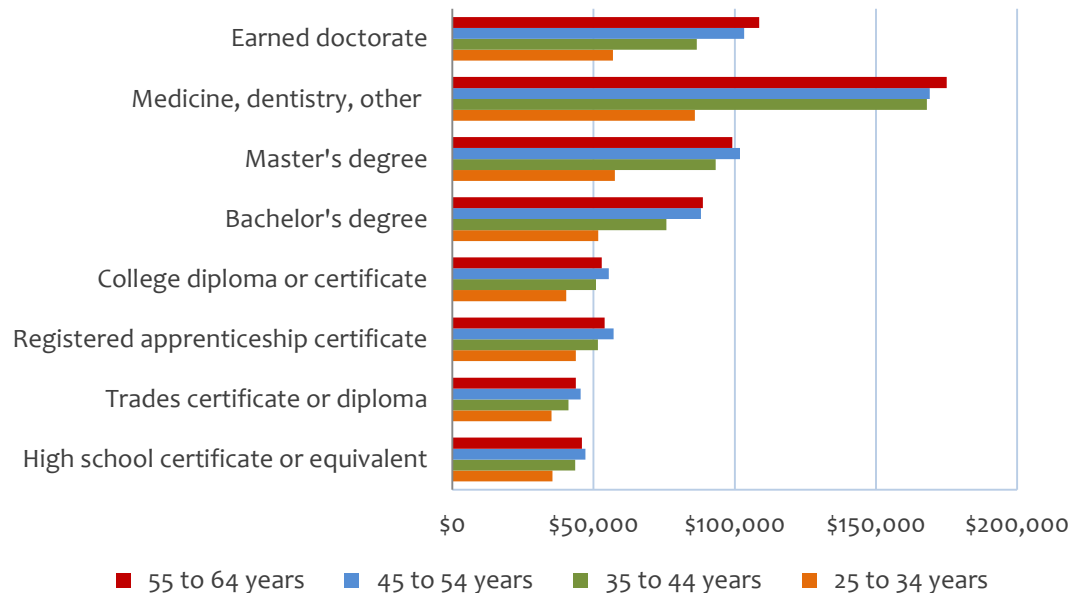
Source: Ministry of Finance Budget 2012

Employment Outcomes – Earnings Premium by Educational Attainment

By the time university graduates approach retirement, they typically earn close to twice the income of other full-time workers.

In addition to improved income, a degree provides career pathways and allows graduates greater flexibility and adaptability in adjusting to labour market changes and the cycles in the economy – with fewer and shorter periods of unemployment.

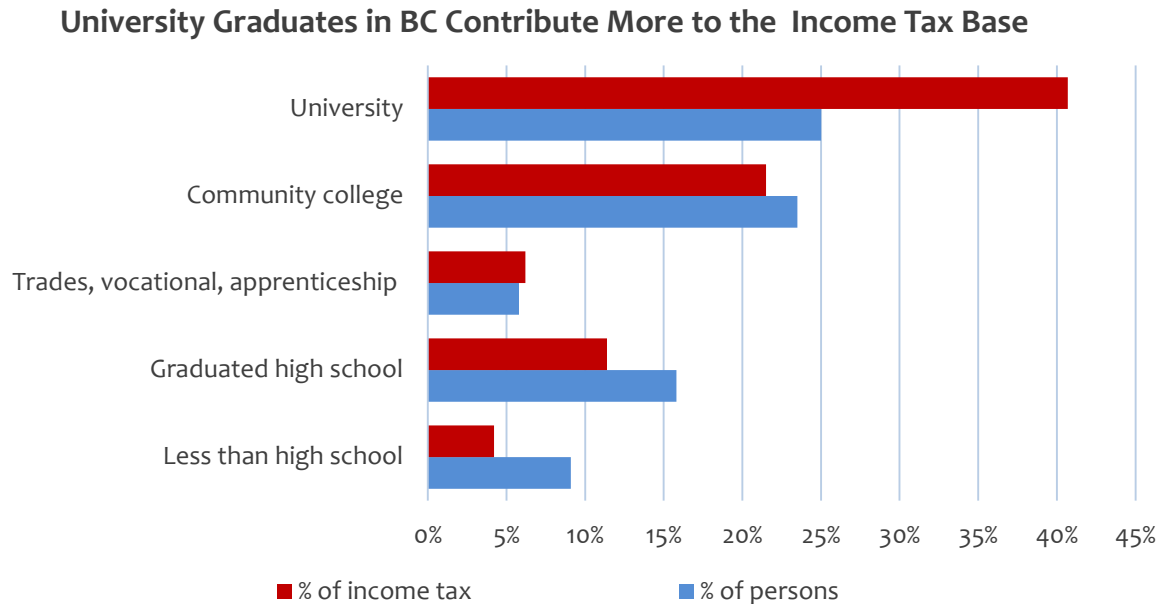
Annual Earnings by Educational Attainment - Canada



Source: Stats Can Census 2006

Employment Outcomes – Contributions to the Income Tax Base by Educational Attainment

University graduates represent about 25% of the labour force; however, university graduates contribute a proportionately larger amount to the tax base (approximately 41% of the income tax base).



Source: StatsCan 2008