Calgary in the New Economy
Grow your Career conference
Calgary Economic Development

Business attraction, expansion & retention

Tell Calgary's story

Talent attraction & workforce development

Startup Calgary & support for the innovation ecosystem
Annual Forecasted Real GDP Growth Rates Across Canada

Source: Millions $ 2012, Conference Board of Canada, October 2019
Calgary CMA Historical Unemployment Rate, Labour Force & Employment

Source: Statistics Canada, December 2019
Unemployment Rate Across Canada

December 2018

Source: Statistics Canada
Youth Unemployment Rate Across Canada
(Ages: 15 to 24 Years)

November 2018
November 2019

Source: Statistics Canada
Employment Growth Across Canada

Vancouver: 24.2% 12-Month Growth, 15.2% 5-Year Growth, 13.4% 10-Year Growth
Edmonton: 23.3% 12-Month Growth, 5.7% 5-Year Growth, 2.4% 10-Year Growth
Calgary: 22.5% 12-Month Growth, 7.3% 5-Year Growth, 14.6% 10-Year Growth
Regina: 22.4% 12-Month Growth, 6.3% 5-Year Growth, 12.6% 10-Year Growth
Saskatoon: 22.5% 12-Month Growth, 6.3% 5-Year Growth, 12.6% 10-Year Growth
Winnipeg: 25.0% 12-Month Growth, 14.6% 5-Year Growth, 17.7% 10-Year Growth
Toronto: 17.7% 12-Month Growth, 12.6% 5-Year Growth, 8.9% 10-Year Growth
Ottawa: 15.0% 12-Month Growth, 8.9% 5-Year Growth, 8.9% 10-Year Growth
Montreal: 14.7% 12-Month Growth, 7.5% 5-Year Growth, 7.5% 10-Year Growth
Canada: 14.7% 12-Month Growth, 7.5% 5-Year Growth, 7.5% 10-Year Growth

Source: Statistics Canada, December 2019
Calgary Historical Employment by Industry

Source: Conference Board of Canada, October 2019

1987

Total Employment: 367,775

2.8%, Information & Cultural

2.1%, Arts, Entertainment, Recreation

5.4%, Public Administration

4.6%, Other Services

7.9%, Manufacturing

6.1%, Educational Services

5.7%, Transportation & Warehousing

5.3%, Accommodation & Food Services

9.9%, Finance & Insurance, Real Estate

11.3%, Primary & Utilities

13.0%, Retail Trade

7.1%, Professional, Scientific & Technical

8.8%, Health Care & Social Assistance

Total Employment: 837,050

2018

2.9%, Arts, Entertainment, Recreation

11.1%, Professional, Scientific & Technical

10.7%, Retail Trade

9.5%, Construction

8.8%, Finance & Insurance, Real Estate

7.3%, Primary & Utilities

7.0%, Accommodation & Food Services

6.7%, Transportation & Warehousing

5.9%, Educational Services

5.3%, Manufacturing

4.7%, Other Services

4.3%, Wholesale Trade

3.7%, Wholesale Trade

3.3%, Public Administration

1.5%, Information & Cultural
Annual GDP per Capita Across Canada

2018

<table>
<thead>
<tr>
<th>City</th>
<th>GDP per Capita</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vancouver</td>
<td>$56,121</td>
</tr>
<tr>
<td>Edmonton</td>
<td>$68,259</td>
</tr>
<tr>
<td>Calgary</td>
<td>$84,630</td>
</tr>
<tr>
<td>Regina</td>
<td>$67,297</td>
</tr>
<tr>
<td>Saskatoon</td>
<td>$70,724</td>
</tr>
<tr>
<td>Winnipeg</td>
<td>$51,655</td>
</tr>
<tr>
<td>Toronto</td>
<td>$59,403</td>
</tr>
<tr>
<td>Ottawa</td>
<td>$54,927</td>
</tr>
<tr>
<td>Montreal</td>
<td>$45,704</td>
</tr>
<tr>
<td>Canada</td>
<td>$52,266</td>
</tr>
</tbody>
</table>

Source: The Conference Board of Canada, October 2019, Statistics Canada, March 2019; Population updated annually in March

A leader in economic power, with the highest annual GDP per capita of major cities in Canada
In 2017/18, 48.2% of migrants to Calgary were from international origins. Over the last 5 years, 43% of people moving to Calgary were of international origin.

Source: Calgary Census Metropolitan Area (CMA), Statistics Canada, July 1, 2018 (Updated April 2019)
### Digital Transformation Across Industries

<table>
<thead>
<tr>
<th>Artificial Intelligence</th>
<th>Internet of Things</th>
<th>Machine Learning</th>
<th>Blockchain</th>
<th>AR/VR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Energy</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Digital twin</td>
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<tr>
<td>Remote monitoring</td>
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<tr>
<td>Clean energy tech</td>
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<tr>
<td>Autonomous vehicles</td>
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</tr>
<tr>
<td>Energy storage solutions</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Electrification</td>
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<tr>
<td><strong>Agriculture</strong></td>
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<tr>
<td>Ag tech</td>
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<tr>
<td>Precision agriculture</td>
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<tr>
<td>Crop science</td>
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<td>Animal genetics</td>
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<tr>
<td>Livestock monitoring</td>
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<tr>
<td><strong>Logistics</strong></td>
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<tr>
<td>Intelligent transportation</td>
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<tr>
<td>Fleet optimization</td>
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<tr>
<td>Digital supply chain and logistics automation</td>
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<tr>
<td>Robotics and manufacturing</td>
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<tr>
<td>Aerospace, defense and autonomous systems</td>
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<tr>
<td><strong>Life Sciences</strong></td>
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<tr>
<td>Biotechnology</td>
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<tr>
<td>Genomics</td>
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<tr>
<td>Medical devices</td>
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<tr>
<td>Imaging</td>
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<tr>
<td>Health tech</td>
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<tr>
<td>Wearable technology</td>
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<tr>
<td><strong>Creative Industries</strong></td>
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<tr>
<td>Film &amp; TV</td>
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<tr>
<td>Digital animation</td>
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<tr>
<td>Music</td>
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<tr>
<td>Calgary Film Centre</td>
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<tr>
<td>Digital media</td>
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<tr>
<td>Gaming</td>
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<tr>
<td><strong>Financial Services</strong></td>
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<td>Fintech</td>
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<tr>
<td>Cyber security</td>
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<tr>
<td>Digital banking</td>
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<tr>
<td>Identity management</td>
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<td>Process optimization</td>
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<tr>
<td><strong>Manufacturing</strong></td>
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<td>Material optimization</td>
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<tr>
<td>Asset tracking</td>
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<td>Next-generation customer care</td>
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<td>Autonomic operations</td>
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<tr>
<td>Channel management</td>
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<tr>
<td>Connected service</td>
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</tbody>
</table>
$18.4B in Digital Spend
## FORECASTED DIGITAL TRANSFORMATION SPEND

### $18.4B IN ALBERTA BY 2022

<table>
<thead>
<tr>
<th>Industry</th>
<th>Forecast (Billion)</th>
<th>Growth Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ENERGY</strong></td>
<td>$4.2</td>
<td><strong>FASTEST GROWING</strong></td>
</tr>
<tr>
<td>Investment in digitization across energy (Power &amp; Utilities, Oil &amp; Gas, etc.) in Canada is forecast to more than $12 billion through 2022; with $4.2 billion in Alberta</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>AGRICULTURE</strong></td>
<td>$1.1</td>
<td><strong>GROWING AT 21%</strong></td>
</tr>
<tr>
<td>Agribusiness is forecast to be the fastest adopter of digital, growing by approximately 25% through to 2022</td>
<td></td>
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<tr>
<td><strong>LOGISTICS</strong></td>
<td>$1.1</td>
<td></td>
</tr>
<tr>
<td>Forecast to reach $1.1 billion and growing at a rate of 19% by 2022</td>
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<tr>
<td><strong>LIFE SCIENCES</strong></td>
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<tr>
<td>Projected to be $1.3 billion, growing at an annual rate of over 21% per year</td>
<td></td>
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<tr>
<td><strong>CREATIVE INDUSTRIES</strong></td>
<td>$1.1</td>
<td><strong>19% OF CANADA</strong></td>
</tr>
<tr>
<td>$2.4 billion will be spent by 2022, approx. 19% of Canada’s spend in this sector</td>
<td></td>
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<tr>
<td><strong>FINANCIAL SERVICES</strong></td>
<td>$1.1</td>
<td></td>
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<tr>
<td>Forecast to reach $1.1 billion and growing at a rate of 17% by 2022</td>
<td></td>
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</tr>
<tr>
<td><strong>MANUFACTURING</strong></td>
<td>$1.5</td>
<td><strong>GROWING AT 24%</strong></td>
</tr>
<tr>
<td>$1.5 billion on digital transformation by 2022, and growing at an annual rate of over 24% per year</td>
<td></td>
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</tr>
</tbody>
</table>

Source: IDC Canada, 2019; All percentages are compound annual growth rate (CAGR).

Digital Transformation Spending forecasts were developed in partnership with IDC Canada. They are based on industry classifications provided by Calgary Economic Development and IDC’s Digital Transformation Spending Guide (Release Version 1H18).
ECONOMIC STRATEGY

VISION

Calgary is the city of choice in Canada for the world’s best entrepreneurs.

We are embracing technology to solve the world’s greatest challenges.
CALGARY HAS DIVERSE EMPLOYERS

AGRIBUSINESS
- Nutrien
- Cargill
- Corteva Agriscience
- Bayer
- BASF
- Syngenta
- Sunterra Foods
- Tterra
- Agri-Data Solution
- Feedlot Health Management Services

LIFE SCIENCES/HEALTH
- Alberta Health Services
- Resverlogix
- CNA Diagnostics
- Parvus Therapeutics
- Oncolytics Biotech Inc
- SolAeroMed
- Brightsquid
- Zephyr
- Mikata Health
- Kent Imaging
- Pure Web
- Zenith Epigenetics
- ROXY}

FINANCIAL SERVICES
- ATB
- Shareworks
- Guild One
- Builders
- Bitcoingrains
- Builders
- BDC
- H& Block
- District Ventures
- Zay Zoon
- Mosaic Capital
- McRock Capital

OTHER & GENERAL
- Critical Mass
- WestJet
- DIRT
- benevity
- VEERUM
- Delta Botics
- Long View
- Zed i
-Smarty
- Pencils
- SensorUp
- Vizworx

TECH
DEAL FLOW STUDY

TRENDS IN CALGARY

OVERVIEW
- 1,238 Alberta tech companies were identified in the 2018 study
- 62% of all Alberta tech companies and startups are in Calgary
- 52% are scaling

CAPITAL
- 26% of Calgary companies have $1M+ in annual revenue
- 73% are currently seeking funding
- 76% of the funding has been raised locally (from Calgary based sources); 30% from other parts of Canada; 26% from the US

SECTORS
- 92% of Calgary companies sell to private industry and 36% to individual consumers
- 54% have a SaaS offering
- 36% incorporate AI/machine learning in their product
- 30% have participated in an accelerator program

Source: Start Alberta, 2018 Alberta Tech Deal Flow Study
RECENT NOTABLE ENERGY TECH INVESTMENTS

Interface Fluidics

Blackline Safety (TSXV: BLN) provides comprehensive live-monitoring and wireless gas detection and received a $1 million purchase order for G7x wearables featuring satellite communication and service plans.

Eavor Technologies has invented a new geothermal power generation technology that overcomes all the traditional roadblocks of geothermal and has raised $15 million in Series A.

Ingu Solutions’ technology disrupts the pipeline inspection industry and recently raised capital from Energy Innovation Capital and Chevron Technology Ventures.

Interface Fluidics developed a nanotechnology platform that optimizes oil production company and recently raised a Series A round of $6 million.
Sleeman Breweries, Canada’s third-largest brewery and a subsidiary of the Japanese multinational beer giant Sapporo Breweries, acquires Calgary-based Wild Rose Brewery.

Chemical giant BASF Corporation has relocated its Agricultural Solutions headquarters operations from its existing Mississauga office to Calgary.

Following the merger with Monsanto, Bayer CropScience has chosen Calgary, AB as its new Canadian headquarters.
RECENT NOTABLE FINTECH INVESTMENTS

US bank Morgan Stanley’s acquired Calgary-based Solium Capital for $1.1 billion, and rebranded to Shareworks.

Clio, a cloud-based legal technology company raises $330 million in Series D and has offices in Dublin, Calgary, Toronto, and Los Angeles.

Benevity, a global software social enterprise that develops workplace giving and volunteer management software solutions, has raised $40 million in a Series C round of funding.

ZayZoon, a leading provider of Wages On-Demand and employee financial payroll features, raises $15 million in financing.
RECENT HEALTH INVESTMENTS

Calgary-born Parvus Therapeutics partners with Genentech, a San Francisco-based biotechnology company in a deal with $1 billion to develop and commercialize drugs for the treatment of inflammatory bowel disease, autoimmune liver diseases, and celiac disease.

Life Sciences Innovation Hub receives $8.5 million for programming that will support turning advanced research into commercial ventures and is forecast to incubate 20 to 40 life sciences companies per year.

HATCH-YYC is Calgary’s first health technology accelerator to provide companies a platform to accelerate market access and improve patient care. With $1 million in funding over three years, HATCH-YYC expects to graduate 20 companies by Sept 2022.
Cisco Canada is investing $15 million in Western Canada’s secure digital transformation.

AMD, an American multinational semiconductor company based in Santa Clara expands to Calgary focusing on the development of its GPU software engineering talent.

WeWork has expanded into Calgary with two coworking locations—The Edison and Stephen Avenue Place.
Labour Demand

ICTC forecasts Alberta will see demand for nearly 9,000 **digital jobs** by 2023.
- ICTC, A Digital Future for Alberta, June 2019

**Finance, Insurance & Real Estate** will grow by 1.6% annually, reaching 4.8% of total employment in 2019 and gain 68,100 jobs by 2024.

**Manufacturing** accounts for 5.2% of total employment in Alberta and is expected to grow at an average rate of 1.0% from 2017 to 2021.
- Industry Profiles 2018, Manufacturing, Government of Alberta, 2018

**Agriculture** will need to fill 23,300 potential jobs in Alberta by 2025.
- AgriLMI CAHRC, 2016

**The Logistics** sector in Alberta will grow by about 7,470 workers from 2016 to 2025.
- APGC, 2016

**Oil and Gas** employment in Canada is expected to shrink by 7%, or 12,500 positions, to 173,300 workers in 2019 from 185,800 workers in 2018.
- 2019 Oil and Gas Labour Market Update, PetroLMI, April 2019

**Clean Tech and Clean Resources** in Canada will see a demand for approximately 25,500 and 10,500 workers respectively, by 2023.
- Canada’s Growth Currency: Digital Talent Outlook 2023, ICTC, 2019

**Energy Efficiency** employed 436,000 permanent workers in Canada in 2018, with expected growth of 8.3% in 2019, creating over 36,000 jobs.
- Energy Efficiency Employment in Canada, ECO Canada, April 2019
Market Demand

• “Canada’s digital economy is predicted to continue to grow significantly over the next five years.”

• “By 2021, employment in Canada’s digital economy will reach 1.63 million jobs, creating approximately 216,000 new vacancies which will need to be filled with qualified talent.

• If AB’s share of the Canadian ICT sector stays constant (or grows), that equates to at least 35,000 new jobs by 2021

## Calgary Companies Hiring Tech

### Software Engineer / Developer

**January 2020**

<table>
<thead>
<tr>
<th>Glassdoor</th>
<th>Indeed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cisco Systems</td>
<td>Attabotics</td>
</tr>
<tr>
<td>Clio</td>
<td>Boast Capital</td>
</tr>
<tr>
<td>Decisive Farming</td>
<td>Circle Cardiovascular Imaging</td>
</tr>
<tr>
<td>Hexagon</td>
<td>Collage.com</td>
</tr>
<tr>
<td>Nasdaq</td>
<td>H.B. Studios Multimedia Limited</td>
</tr>
<tr>
<td>P2 Energy Solutions</td>
<td>Localintel</td>
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<tr>
<td>RS Energy Group</td>
<td>LodgeLink</td>
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<tr>
<td>Sercel</td>
<td>Pangea Global, LLC</td>
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<tr>
<td>Suncor Energy Inc.</td>
<td>Streamsim Technologies, Inc.</td>
</tr>
<tr>
<td>Sunnyfuture Group</td>
<td>Trimac</td>
</tr>
</tbody>
</table>

### Computer Programmer

**January 2020**

<table>
<thead>
<tr>
<th>Glassdoor</th>
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<tbody>
<tr>
<td>Arcane</td>
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<tr>
<td>Autodata Solutions</td>
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<tr>
<td>Brightsquid Secure Communications Corp</td>
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<tr>
<td>Evans Hunt</td>
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<tr>
<td>Languages in Motion (LIM)</td>
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<tr>
<td>Pason Systems Corp</td>
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<tr>
<td>The Professional Petroleum Data Management Association</td>
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<tr>
<td>Routeique Inc.</td>
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<tr>
<td>Vantix Systems</td>
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<tr>
<td>Vista Projects Limited</td>
</tr>
</tbody>
</table>
Market Demand

From Indeed and LinkedIn (as of Sept. 15, 2019)

Software Developer jobs
• Indeed – 302
• LinkedIn – 432

Data Analyst jobs
• Indeed – 244
• LinkedIn – 102

IT Project Manager
• LinkedIn – 548

Information Technology jobs
• Indeed – 858
• LinkedIn – 427
Market Demand

Summer 2019 career portal snapshot supports this trend (125 company websites)

Number of Companies Hiring for Specific Roles

- Hardware Technician
- Mechanical Engineer
- UI/UX
- QA
- Cyber Security
- Systems...
- Tech Support
- Tech/Project Manager
- Data Analytics
- Software Developer

# of Companies Hiring

08-Jul-19  15-Aug-19
Uptick in New Tech Training

Program Growth (actual and projected)

- Before 2018: 30 programs implemented
- 2018: 9 programs
- 2019: 21 programs
- 2020 (projected): 13 programs
Technical Workforce is Growing

Cumulative Program Completions (all programs)

- **2017**: 622
- **2018**: 789
- **2019 (projected)**: 931
- **2020 (projected)**: 240
Employment Outcomes

# of Programs Resulting in Graduates Finding Jobs within 6 months of Program Completion

Graduates Finding Jobs in 6 months (%)

- 90% - 100%
- 75% - 89%
- 50% - 74%
- <50%

# of Programs

- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
Calgary CMA Business Establishments by Number of Employees

Total 58,552

1-4 Employees, 36,478, 62.3%
5-9 Employees, 8,936, 15.3%
10-19 Employees, 6,109, 10.4%
20-49 Employees, 4,258, 7.3%
50-99 Employees, 1,549, 2.6%
100-199 Employees, 730, 1.2%
200-499 Employees, 356, 0.6%
500+ Employees, 136, 0.2%

Source: Statistics Canada, June 2019
Self-Employed per Capita and 10-Year Growth

Source: Statistics Canada, 2018, per 1,000 Population
Lifelong learning
How to survive in the age of automation
CALGARY IN THE NEW ECONOMY

INNOVATION

PLACE

BUSINESS FRIENDLY

TALENT
Keep in Touch

Court Ellingson
cellingson@calgaryeconomicdevelopment.com
calgaryeconomicdevelopment.com
3200, 500 Centre St SE, Calgary, AB T2G 0E3

Facebook.com/calgaryeconomic
Twitter.com/calgaryeconomic
Youtube.com/calgaryeconomic
LinkedIn.com/calgaryeconomic