

MAPPING CALGARY'S DIGITAL FUTURE



A BRIEF FOR POLICY MAKERS

IN-DEMAND JOBS & SKILLS IN CALGARY'S TECH SECTOR

Calgary's job seekers are upgrading their skills to meet the needs of the city's growing tech sector!

A recent study by ICTC and Calgary Economic Development surveyed **nearly 200 employers across sectors like ICT, energy, healthcare, finance and others in Calgary** to identify high tech jobs and skills.

The jobs identified were: **software developers, data scientists, data analysts, full stack developers, UX/UI designers, QA Testers, project managers, and business development managers.**

At the same time, the study analyzed the career trajectories and **skillsets of key job seekers** and also found that they are **considering careers in tech.**

Calgary has courses and other short-duration programs teaching in-demand skills that can get these job seekers upskilled and job-ready in 12 months or less.

Find out more about these programs in the Calgary area!

For more
information, have a
look at the **Mapping
Calgary's Digital
Future** report.

IN-DEMAND JOBS & SKILLS IN CALGARY'S TECH SECTOR

Many of Calgary's job seekers already possess some core skills that are relevant to the city's in-demand tech jobs.

Examining weighted competencies of job seekers such as statistical analysis, design thinking, and problem-solving against critical skills for in-demand jobs, ICTC was able to determine the overall skills "match" for the following job seekers in Calgary to the most in-demand jobs in the city.

	Data Scientist	Data Analyst	Software Developer	Full stack developer	UX/UI Designer	QA Tester
Chemical Engineer	59%	59%	38%	28%	26%	58%
Electrical Engineer	67%	68%	54%	46%	44%	70%
Engineering Manager	45%	38%	32%	22%	21%	52%
Petroleum Engineer	55%	50%	32%	22%	22%	52%
Geoscientist	55%	38%	31%	21%	21%	51%

	Project Manager	Business Development Manager
Chemical Engineer	50%	23%
Electrical Engineer	48%	22%
Engineering Manager	50%	22%
Petroleum Engineer	34%	19%
Geoscientist	17%	13%

CHEMICAL ENGINEER → DATA ANALYST

Occupation Skills Match

59%

Example of Key Upskilling Need

Gain a holistic understanding of data science and data analysis

Example of Key Upskilling Resources in Calgary

- **University of Calgary: Certificate or Diploma in Fundamental Data Science & Analytics**
- **Bow Valley College: Certificate in Data Management & Analytics**

Course Duration

- **University of Calgary Certificate: 4 months**
- **University of Calgary Diploma: 8 months**
- **Bow Valley College Certificate: 6 months**

Course Cost

- **University of Calgary: \$12,000**
- **Bow Valley College: \$11,428**



CHEMICAL ENGINEER → SOFTWARE DEVELOPER

Occupation Skills Match

38%

Example of Key Upskilling Need

Gain a holistic understanding of software and web development

Example of Key Upskilling Resources in Calgary

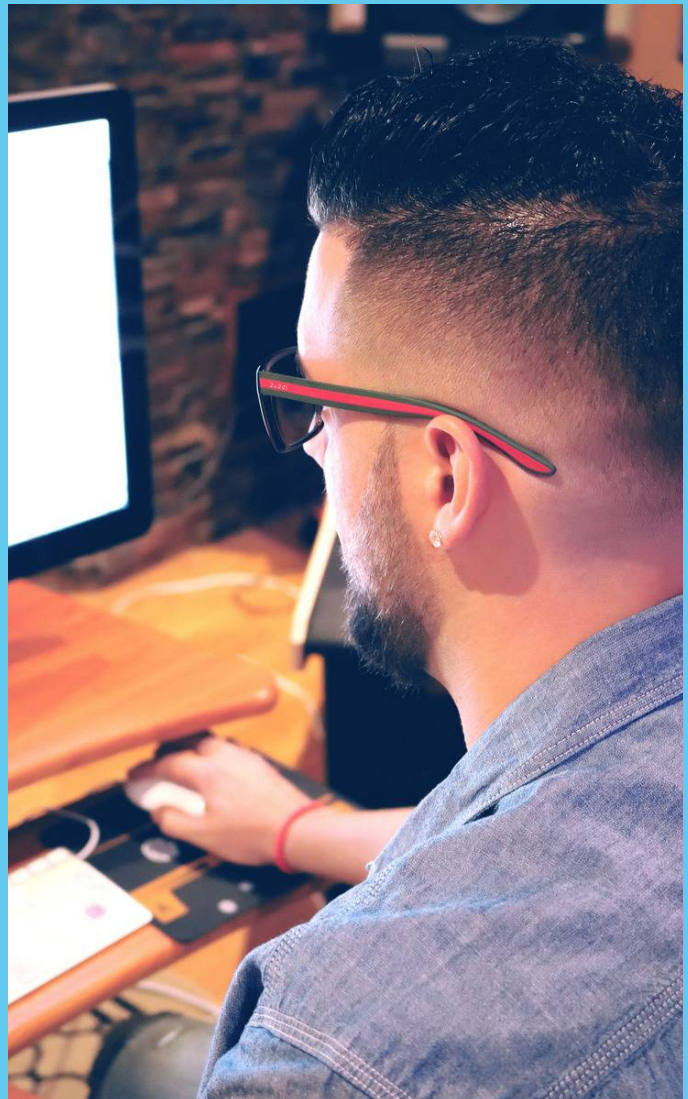
- Lighthouse Labs: Web Development Bootcamp
- SAIT: Python Programming Certificate

Course Duration

- Lighthouse Labs: 10 weeks
- SAIT: 2-4 months

Course Cost

- Lighthouse Labs: \$9,800
- SAIT: \$700-\$900



Occupation Skills Match

70%

Example of Key Upskilling Need

Gain a holistic understanding of QA testing and debugging

Example of Key Upskilling Resources in Calgary

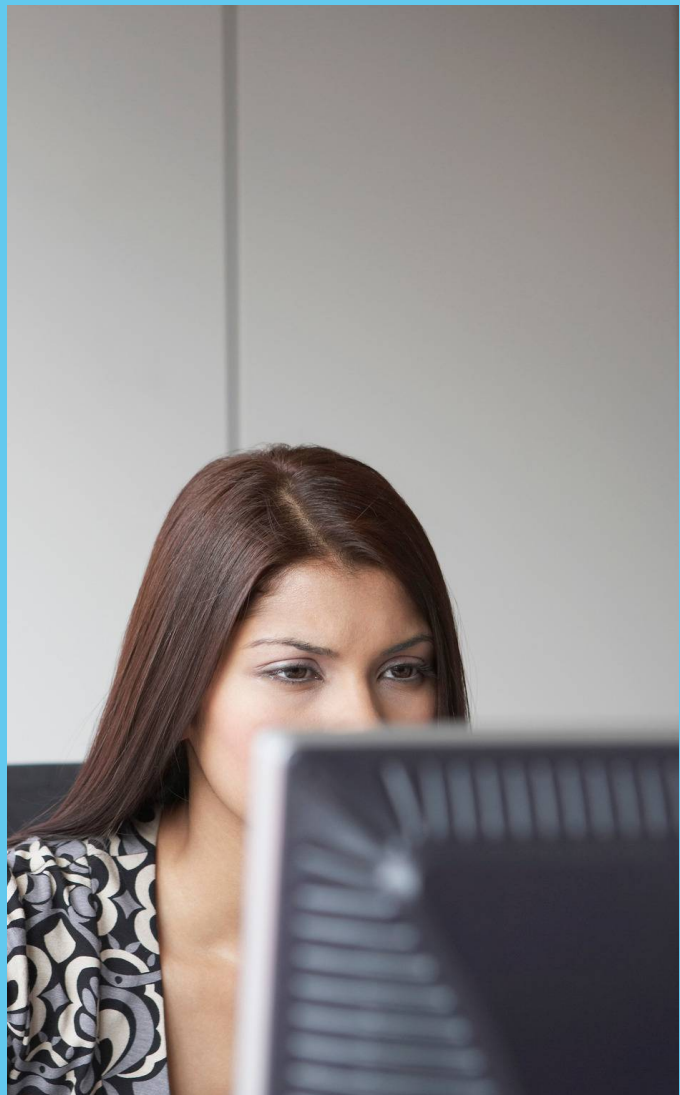
- The Knowledge Academy: Software Testing Training
- University of Calgary: Certificate in IT Fundamentals

Course Duration

- The Knowledge Academy: 2 days
- University of Calgary: 12 months

Course Cost

- The Knowledge Academy: \$2,989
- University of Calgary: \$3,300-\$4,125



ELECTRICAL ENGINEER → FULL STACK DEVELOPER

Occupation Skills Match

46%

Example of Key Upskilling Need

Gain a holistic understanding of front-end and back-end development

Example of Key Upskilling Resources in Calgary

- SAIT: Object-oriented Software Development Certificate
- EvolveU: Full stack Developer Program

Course Duration

- SAIT: 8 months
- EvolveU: 4 months

Course Cost

- SAIT: \$13,039
- EvolveU: \$13,500



ENGINEERING MANAGER → DATA SCIENTIST

Occupation Skills Match

45%

Example of Key Upskilling Need

Gain a holistic understanding of data science and machine learning, big data analytics, and modern programming languages

Example of Key Upskilling Resources in Calgary

- SAIT: Big Data and Analytics Course
- New Horizons Computer Learning Centre: SQL Querying Fundamentals

Course Duration

- SAIT: 3-4 months
- New Horizons Learning Centre: 1 day

Course Cost

- SAIT: \$700
- New Horizons Learning Centre: \$500

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);
sold_taxes = $taxes;
$pa_tax = array();
$sort_order = array();
$results = $this->model_extension->getExtensions('
foreach ($results as $key => $value) {
    if (isset($value['code'])) {
        $code = $value['code'];
    } else {
        $code = $value['key'];
    }
    $sort_order[$key] = $this->config->get($code . '_sort_order');
}
array_multisort($sort_order, SORT_ASC, $results);
foreach ($results as $result) {
    if (isset($result['code'])) {
        $code = $result['code'];
    } else {
        $code = $result['key'];
    }
    if ($this->config->get($code . '_status')) {
        $this->load->model('extension/total/' . $code);
        // We have to put the totals in an array so that they
        // are by reference.
        $this->model_extension_total_ . $code->getTotal(
            total_data);
        if (!empty($totals[count($totals) - 1]) && !isset($totals[
            count($totals) - 1]['code'])) {
            $totals[count($totals) - 1]['code'] = $code;
        }
    }
    $tax_difference = 0;
    foreach ($taxes as $tax_id => $value) {
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Occupation Skills Match

50%

Example of Key Upskilling Need

Gain a holistic understanding of project management

Example of Key Upskilling Resources in Calgary

- University of Calgary: Project Management Fundamentals Certificate
- Mount Royal University: Project Management Certificate

Course Duration

- University of Calgary: 12 - 24 months
- Mount Royal University: 12 - 24 months

Course Cost

- University of Calgary: \$8,000-\$10,000
- Mount Royal University: \$7,000-\$8,000



PETROLEUM ENGINEER → QA TESTER

Occupation Skills Match

52%

Example of Key Upskilling Need

Gain a holistic understanding of QA testing and debugging, including experience with test automation and debugging

Example of Key Upskilling Resources in Calgary

- IT Institute of Calgary: Fast-track Test Automation
- SAIT: Introduction to JavaScript & jQuery

Course Duration

- IT Institute of Calgary: 2 months
- SAIT: 3-4 months

Course Cost

- IT Institute of Calgary: \$6,800
- SAIT: \$425



PETROLEUM ENGINEER → UX/UI DESIGNER

Occupation Skills Match

22%

Example of Key Upskilling Need

Gain a holistic understanding of front-end development and design

Example of Key Upskilling Resources in Calgary

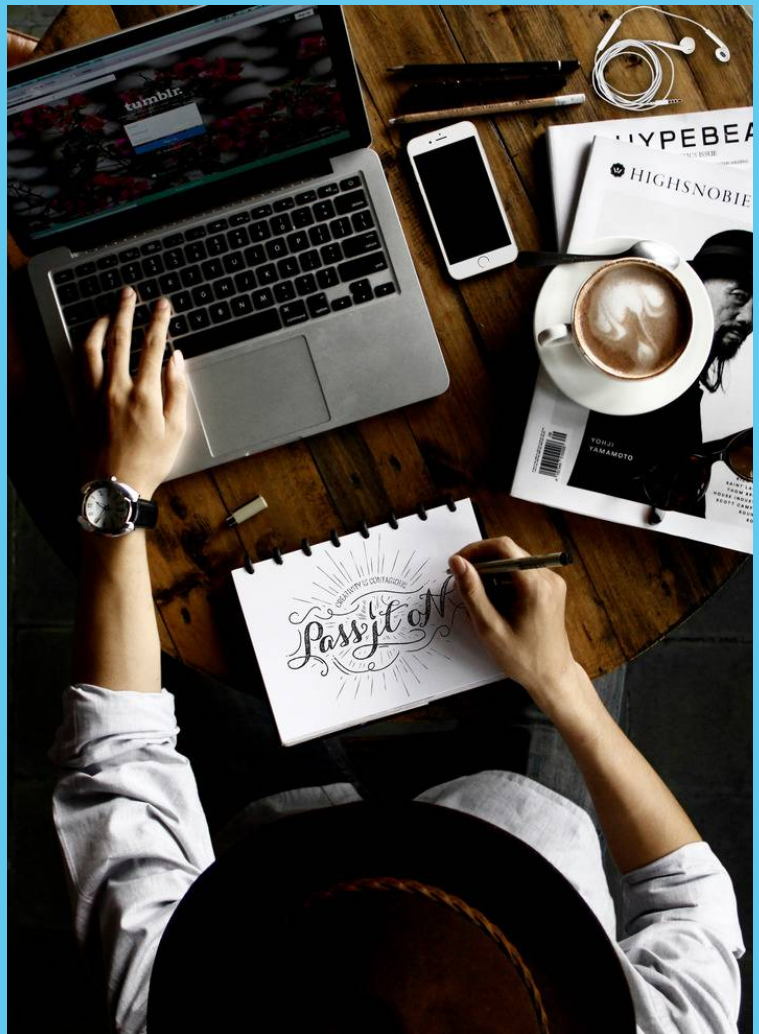
- Lighthouse Labs: Intro into Front-end Development with JavaScript
- Mount Royal University: Digital Communications Extension Certificate

Course Duration

- Lighthouse Labs: 6 weeks
- Mount Royal University: 4+ months

Course Cost

- Lighthouse Labs: \$1,575
- Mount Royal University: \$2,500



GEOSCIENTIST → DATA SCIENTIST

Occupation Skills Match

55%

Example of Key Upskilling Need

Gain a holistic understanding of data science and machine learning, including Agile project management, and database management

Example of Key Upskilling Resources in Calgary

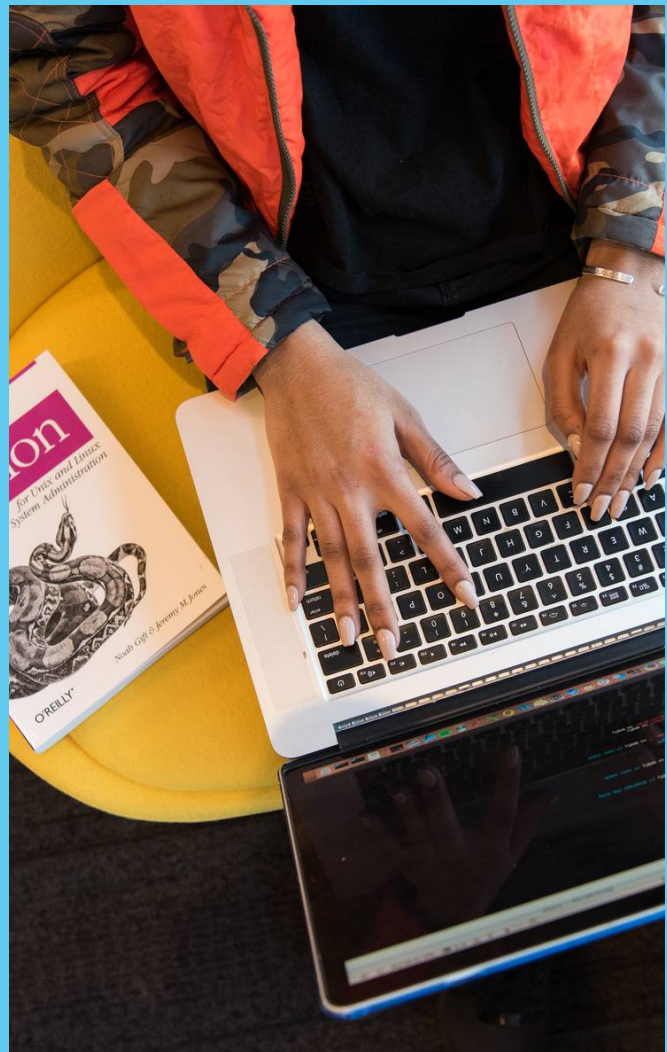
- University of Calgary: Agile Project Management - The Basics
- University of Calgary: Certificate in Database Administration

Course Duration

- University of Calgary: 1 day
- University of Calgary: 12 months

Course Cost

- University of Calgary: \$385
- University of Calgary: \$4,000



Occupation Skills Match

13%

Example of Key Upskilling Need

Gain a holistic understanding of business development and sales

Example of Key Upskilling Resources in Calgary

- **Mount Royal University: Sales Development Certificate**
- **Bow Valley College: Business Development and Sales Professional Certificate**

Course Duration

- **Mount Royal University: 4-8 months**
- **Bow Valley College 6 months**

Course Cost

- **Mount Royal University: \$1,200**
- **Bow Valley College: \$2,700**

