

Industrial & Manufacturing Engineers

A guide for newcomers to British Columbia



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Financé par :



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1. Working as an Industrial & Manufacturing Engineer

Job Description

Industrial and manufacturing engineers help companies become more productive by studying their operations and suggesting more efficient ways of doing things.

You perform the following duties:

- plan and design plant layouts and facilities
- develop manufacturing systems and procedures and find ways to make them more efficient
- analyze costs of production
- develop maintenance standards, schedules and programs
- create programs and carry out studies to improve industrial health and safety
- determine human resource and skill requirements and develop training programs
- supervise technicians, technologists, analysts, administrative staff and other engineers

Sources:

- WorkBC, Career Profiles at <http://workbc.ca/Careers> [search NOC 2141]
- *Career Cruising database* [profile for Industrial Engineer]
Available from the VPL Digital Library | Explore our Digital Library page
<http://www.vpl.ca/digital-library/career-cruising>

Industry Overview

Industrial and manufacturing engineers are expected to be in demand in BC through 2022.

Job Outlook in BC

Industrial and manufacturing engineers



Chart from Work BC

WorkBC provides job openings in one BC region from 2015-2025:

Region	Expected # of Job Openings	Average Annual Employment Growth	Expected Increase in Employment
Lower Mainland / Southwest	370	1.4%	130

Learn more about working as an industrial and manufacturing engineer from:

- **WorkBC, Career Profiles** at <http://workbc.ca/Careers> [search NOC 2141]
- **Career Cruising** database [profile for Industrial Engineer]
Available from the VPL Digital Library | Explore our Digital Library page
<http://www.vpl.ca/digital-library/career-cruising>

Types of Employers

Industrial and manufacturing engineers work for:

- consulting firms
- manufacturing and processing companies
- government
- financial, health care, fast food restaurants and other institutions

You may also be self-employed.

Salary

In BC, the median annual salary is \$74,872. Your salary is affected by your level of education. If you have a bachelor's degree in engineering you tend to earn less than if you have a master's degree or PhD.

In addition to your salary, full-time civil engineers often receive benefits such as pension plans, dental coverage, sick leave, and paid vacations. You may receive regular, performance-based bonuses that can increase your annual income.

Sources: WorkBC & Career Cruising

In BC regions, Industrial and Manufacturing Engineers can expect to earn:

Location	Wage (\$/hr)		
	Low	Median	High
British Columbia	21.21	35.90	60.62
Lower Mainland - Southwest Region	20.90	36.88	65.55

Source: Job Bank Canada, <http://www.jobbank.gc.ca>

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In its *2016 Report on Members' Compensation and Benefits*, Engineers & Geoscientists British Columbia (formerly APEGBC) provides these salary figures:

Total Annual Compensation

	# of responses	Mean	Lower Quartile	Median	Upper Quartile
Industrial/Manufacturing Consulting	13	\$101,827	N/S	\$95,000	N/S
Heavy Manufacturing	83	\$90,319	\$65,000	\$82,000	\$110,000
Light Manufacturing	18	\$117,194	N/S	\$91,000	N/S

Source: <https://www.egbc.ca/Careers/Compensation-Survey>

Working Hours

You generally work between 8 and 10 hours a day, 40 to 50 hours a week. You may have to work nights and weekends to meet project deadlines.

2. Skills, Education and Experience

Skills

- Critical thinking and problem solving
- Analytical and detail oriented
- Decision making
- Project management and team work
- Proposal writing and presentations
- Financial management
- Committee work - industry ethics

Education and Experience

- Bachelor's degree in industrial engineering or a related engineering discipline is required
- Master's degree or doctorate in a related engineering discipline **may be** required

Qualifications

This occupation is regulated in British Columbia.

*Entry level engineering positions **do not** require professional designation in BC.*

You must be registered with Engineers & Geoscientists British Columbia (formerly APEGBC) to use the title *Professional Engineer* in BC.

However, you can work in engineering, even if you haven't been licensed by a professional engineering association, as long as you are supervised by a professional engineer (P.Eng).

Only licensed engineers are permitted to undertake and assume responsibility for engineering projects in BC. Licensing is required to approve engineering drawings and reports, and to practise as a Professional Engineer (P. Eng.)

In order to become a registered member of Engineers & Geoscientists British Columbia you require:

- graduation from an accredited educational program
- four years of supervised work experience in engineering
- passing a professional practice examination
- completion of the law and ethics seminar

For more information:

- **Engineers & Geoscientists British Columbia - Become a Member**
<https://www.egbc.ca/Become-a-Member>

Internationally Trained Engineers

If you are an internationally trained engineer you may qualify for membership with Engineers & Geoscientists British Columbia if you meet all requirements including: education, work experience, language skills, good character, professionalism and ethics.

For more information:

- **Engineers & Geoscientists British Columbia Online Resource for Internationally Trained Engineers and Geoscientists :**
 - Self assessment tool: <http://engtechnbc.ca/>
 - Job Mentoring Programs:
<https://www.egbc.ca/For-Members/Mentoring-Program>

- **A Roadmap to Engineering in Canada. Engineers Canada**
<http://newcomers.engineerscanada.ca/>

- **International agreements** between professional engineering associations
<http://www.engineerscanada.ca/mobility-international>

- **Introduction to Engineering in BC – Langara College**
These courses are designed to provide you with industry specific skills in order to find employment in an engineering environment. They also help you gain a good understanding of Canadian workplace culture.
<http://www.langara.bc.ca/continuing-studies/programs-and-courses/programs/introduction-to-engineering-in-bc/index.html>

3. Finding Jobs

You'll find job advertisements in local newspapers, trade journals, and electronic sources, as well as through professional associations' publications.

Local Newspapers

You can look at the *Vancouver Sun* & *The Province* at Vancouver Public Library for free. Check the job postings daily and the careers section in the *Vancouver Sun* on Wednesdays and Saturdays and in *The Province* on Sundays.

Job White Pages

Available in print at the Central Library or online at

<http://www.vpl.ca/digital-library/jobfreewaycom>

(see categories 1630-2019, 'Science/Engineering Professionals')

Available from the VPL Digital Library | Explore our Digital Library page

Access at VPL locations only

Online Job Postings

- **Engineering Central Canada**

<http://www.engcen.ca/>

- **Indeed.com**

http://ca.indeed.com/advanced_search

Find jobs posted on a multitude of company career sites and job boards.

- **Skilled Workers.com**

http://www.skilledworkers.com/search_job/search.php

- **TechJobs.ca**

<http://www.technicaljobs.ca/en>

Professional Associations' Career Resources

- **Association of Consulting Engineering Companies British Columbia (ACEC-BC)**
<http://www.acec-bc.ca/resources/>
- **Engineers & Geoscientists British Columbia Employment Centre**
<https://www.egbc.ca/Careers/Career-Listings>
- **Engineering Institute of Canada**
<http://www.engineeringcareers.ca/>

Identifying the Right Position

When you browse job advertisements, you'll find a range of different job titles that are relevant.

For industrial and manufacturing engineers, look for these related job titles (from NOC 2141):

- engineer, computer integrated manufacturing (CIM)
- fire prevention engineer
- industrial engineer
- manufacturing engineer
- plant engineer
- production engineer
- quality control engineer
- safety engineer
- work measurement engineer

Source: <http://noc.esdc.gc.ca/English/noc/welcome.aspx?ver=16>

Creating a List of Potential Employers

You can use directories to produce lists of employers in Vancouver or the Lower Mainland. Contact them directly to find out if they're hiring.

- **Association of Consulting Engineering Companies British (ACEC-BC),**
Directory of Member Firms

<http://www.acec-bc.ca/membership/directory-of-members.aspx>

- **Engineers & Geoscientists British Columbia**

<https://www.egbc.ca/Member-Directories>

- **Business in Vancouver. Book of Lists.**

Biggest Engineering Firms in BC

Available at the Central Library 338.9711 B97b and online at

<http://www.biv.com/lists>

- **Canadian Company Capabilities**

Search by NAICS Code "541330" [Engineering Services]

<http://www.ic.gc.ca/app/ccc/srch/cccBscSrch.do?lang=eng&prtl=1>

- **Reference Canada**

<http://www.vpl.ca/digital-library/reference-canada>

Click on "Start Search" beside Canadian Businesses, then select the "Advanced Search" button. Select both "Keyword/SIC/NAICS" under Business Type and "City" under Geography. In the top search box enter "engineer" and click SEARCH. Select the appropriate headings. Lower down, select the Province, choose the cities, and click the "View Results" button.

Available from the VPL Digital Library | Explore our Digital Library page

NOTE: *You can access this database from a Library computer. If you are using a computer from outside the Library, you will need a Vancouver Public Library card to login to this database. After clicking on the database name, you will be asked to enter your library card number and PIN (usually last four digits of your telephone number).*

4. Applying for a Job

In Canada, employers usually expect to receive a resume (curriculum vitae) and a cover letter that identifies the position you are applying for and summarizes your relevant experience.

Use the library catalogue, <http://vpl.bibliocommons.com/> to find books on writing resumes and cover letters specific to your industry.

To learn about applying for jobs in Canada, use the following pathfinders which are available in print at the Central Library or online at <http://skilledimmigrants.vpl.ca/>.

- **Writing Resumes and Cover Letters**

Go to <http://skilledimmigrants.vpl.ca>

[Search Writing Resumes and Cover Letters]

- **Getting Canadian Work Experience**

Go to <http://skilledimmigrants.vpl.ca>

[Search Getting Canadian Work Experience]

- **Networking for Employment**

Go to <http://skilledimmigrants.vpl.ca>

[Search Networking for Employment]

- **Learn More About Working in BC and Canada**

Go to <http://skilledimmigrants.vpl.ca>

[Search Learn More About Working in BC and Canada]

5. Getting Help from Industry Sources

Industry Associations

Associations for professional engineers in BC and Canada provide information and assistance. Registration and fees are usually required for membership.

- **Association of Consulting Engineers Companies of British Columbia**
<http://www.acec-bc.ca/>
- **Engineers & Geoscientists British Columbia (formerly APEGBC)**
<http://www.egbc.ca/>
- **Engineering Institute of Canada (EIC)**
<http://www.eic-ici.ca/>
- **Engineers Canada, Canadian Council of Professional Engineers (CCPE)**
<http://www.engineerscanada.ca/>
- **Society of Internationally Trained Engineers of British Columbia (SITE)**
<http://www.sitebc.ca/>
- **Society of Punjabi Engineers and Technologists of British Columbia**
<http://www.speatbc.org/>

Industry Journals

Search the Vancouver Public Library catalogue for journals related to your profession. Examples at the Central Library:

- **Canadian Consulting Engineer** / Association of Consulting Engineers of Canada Available at VPL Central Library, 620.5 C212 and online at:
<http://www.canadianconsultingengineer.com/>
- **Innovation** / Engineers & Geoscientists British Columbia Available at VPL Central Library, 620.5 B86 and online at:
<https://www.egbc.ca/Resources/News-and-Publications/Innovation-Magazine/Innovation-Past-Issues>
- **Journal of Achievements in Materials and Manufacturing Engineering** Available at the Central Library as an electronic resource and online at:
<http://www.journalamme.org/>

Questions? Please ask the Information Staff in the Central Library, Vancouver Public Library or telephone 604-331-3603.

Please note that the information in this guide is also available online through the Skilled Immigrant InfoCentre website at <http://skilledimmigrants.vpl.ca/>.