

Industrial & Manufacturing Engineers

A guide for newcomers to British Columbia



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1. Working as an Industrial & Manufacturing Engineer **[NOC 2021: 21321 / NOC 2016: 2141]**

Job Description

Industrial and manufacturing engineers carry out studies, and develop and supervise programs to best use equipment, human resources, technology, materials and procedures to improve efficiency and productivity

You perform the following duties:

- plan and design plant layouts and facilities
- study new machinery and facilities, and recommend or select efficient combinations
- develop flexible or combined manufacturing systems and procedures
- carry out studies and put into use programs to determine the best inventory levels for production, and the best use of machinery, materials and resources
- analyze costs of production
- design, develop and carry out time studies and work simplification programs
- develop performance standards, evaluation systems and wage and incentive programs
- carry out studies of the reliability and performance of plant facilities and production or administrative systems

Sources:

- **WorkBC Career Profile for Industrial & Manufacturing Engineers**
<https://www.workbc.ca/Jobs-Careers/Explore-Careers.aspx>
- **Career Cruising** – Profile for 'Industrial Engineer'
<http://www.vpl.ca/digital-library/career-cruising>

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

Job Outlook in BC

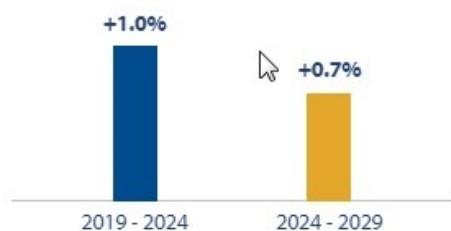
Hard economic times generally do not affect industrial engineers' incomes. Since they help companies compete in the market, they will still get work at these times.

Industrial and manufacturing engineers

B.C. Labour Market Outlook (2019-2029)

Provincial outlook

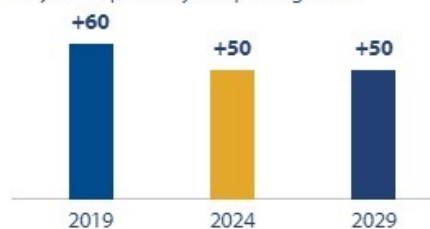
Forecasted average employment growth rate



Source: B.C. Labour Market Outlook

Job openings

10 year expected job openings: **480**



Source: B.C. Labour Market Outlook

Composition of job openings

Replacement of retiring workers:

74.5%
350 openings



New jobs due to economic growth:

25.5%
120 openings

Source: B.C. Labour Market Outlook

Source: WorkBC <https://www.workbc.ca/careers/2141>

WorkBC provides job openings in four BC regions from 2019-2029:

Region	Expected # of Job Openings	Average Annual Employment Growth
Lower Mainland / Southwest	390	0.9%
Vancouver Island / Coast	50	0.8%
Thompson Okanagan	30	1.4%
Cariboo	0	-1.7%

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

- **WorkBC Career Profile for Industrial & Manufacturing Engineers**

<https://www.workbc.ca/Jobs-Careers/Explore-Careers.aspx>

- **Career Cruising** – Profile for 'Industrial Engineer'

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

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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

They may also be self-employed.

Salary

In BC, the median annual salary is \$68,137 with median hourly wage of \$32.67.

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.

Full-time engineers often get benefits as well as a salary; these may include dental coverage, paid vacation days, and paid sick days. There may also be a pension plan.

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You may receive regular, performance-based bonuses that can increase your annual income.

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

Community/Area	Wages (\$/hour)		
	Low	Median	High
Lower Mainland–Southwest Region	22.00	33.16	47.00
British Columbia	22.00	32.67	46.91

Source: JobBank Canada <https://www.jobbank.gc.ca/marketreport/wages-occupation/22438/BC>

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
- Financial management

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.

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

*However, you can work in engineering positions that **do not** require professional designation (e.g. entry level positions) as long as you work under the direct supervision of someone who is a registered professional engineer or professional geoscientist.*

Source: <https://www.egbc.ca/Registration/Individual-Registrants/About>

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 EGBC you require:

- graduation from an accredited educational program - four year full-time bachelor's degree
- four years of supervised work experience in engineering
- successfully passing the professional practice examination
- completion of the law and ethics seminar

Source:
<https://www.egbc.ca/Registration/Individual-Registrants/How-to-Apply/Professional-Membership-and-Licence/Engineer-First-Time-Applying-in-Canada>

For more information:

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

- **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>
 - **Engineers Canada: A Roadmap to Engineering in Canada.**
<http://newcomers.engineerscanada.ca/>
 - **Engineers Canada:** Information for Internationally Trained Engineers
<https://engineerscanada.ca/become-an-engineer/for-internationally-trained-engineers>
 - **International agreements** between professional engineering associations
<https://engineerscanada.ca/become-an-engineer/agreements-on-international-mobility>

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.

Online Job Postings

- **Engineer Jobs.com**
<https://www.engineerjobs.com/jobs/canada/british-columbia/>
- **TechJobs.ca**
<https://www.techjobs.ca/en/>
- **Neuvoo.ca**
<http://neuvoo.ca>
- **BC JobConnect**
<https://www.bcjobconnect.ca> ****must have permanent resident number****
newcomers can post their skills, education and work experience to BC employers looking for workers

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:

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

Source: <https://www.jobbank.gc.ca/marketreport/occupation/22438/BC>

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
<https://www.acec.ca/members/member-directory.html>
- **Engineers & Geoscientists British Columbia**
<https://www.egbc.ca/Registrant-Directory>

- **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>

- **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 EGBC (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 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/>

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- **Innovation** / Engineers & Geoscientists British Columbia
Available at VPL Central Library, 620.5 B86 and online at:
<https://www.egbc.ca/About/Publications/Innovation>
<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/>*

