

Professional Engineers (General)

A guide for newcomers to British Columbia



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Contents

1. Working as a Professional Engineer	2
2. Skills, Education and Experience	8
3. Finding Jobs.....	11
4. Applying for a Job.....	14
5. Getting Help from Industry Sources	15

1. Working as a Professional Engineer [NOC 2148]

Job Description

This group includes agricultural and bio-resource engineers, biomedical engineers, engineering physicists and engineering scientists, marine and naval engineers, textile engineers and other specialized engineering occupations.

Agricultural and bio-resource engineers

- design and develop machinery, equipment and systems related to agriculture and food processing

Biomedical engineers

- design and develop medical diagnostic and clinical equipment and procedures
- develop devices to assist persons with disabilities
- advise hospital administrators on planning and use of medical equipment
- modify and install or supervise installation of equipment

Engineering physicists and engineering scientists

- conduct research and develop processes, programs and equipment to expand knowledge in the applied sciences and engineering and to support advanced engineering and scientific applications

Marine and naval engineers (or naval architects)

- design and develop marine vessels, floating structures and associated marine power plants; design and develop propulsion systems and equipment
- oversee the building, maintenance and repair of vessels and marine systems

Textile engineers

- design and develop processes, equipment and procedures for the production of fibers, yarns and textiles

Source: National Occupation Classification 2148

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

Industry Overview

Job Opportunities for qualified and experienced engineers in all sectors are expected to be good throughout BC beyond 2022.

The demand for engineers in BC is currently driven by the resource industries, especially oil and gas, mining and forestry and some projects in the health care sector.

There is now a trend among engineering consulting firms to only hire new people on a contract, or project-by-project, basis.

Job Outlook in BC

Professional engineers General, NOC 2148



Chart from WorkBC

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WorkBC provides job openings in BC regions from 2015-2025:

Region	Expected # of Job Openings	Average Annual Employment Growth	Expected Increase in Employment
Vancouver Island	50	0.5%	10
Lower Mainland / Southwest	330	1.5%	140

You can learn more about working as a Professional Engineer BC from

- **WorkBC, Career Profiles** [search NOC 2148]
<http://workbc.ca/Careers>
- **Career Cruising database** [search Engineer to locate various career profiles]
Available from the VPL Digital Library | Explore our Digital Library page:
<http://www.vpl.ca/digital-library/career-cruising>

Types of Employers

Engineers work for:

- consulting engineering firms
- manufacturing companies
- construction companies
- government
- many other types of industries

You may also be self-employed.

Engineers often work in a multidisciplinary environment. This work experience helps you acquire the knowledge and skills that allow you to practice in associated areas of science, sales, marketing or management.

Salary

In BC, the median annual salary for professional engineers is \$82,110. Your salary depends on education, experience, industry and employer. You generally earn more if you have a master's degree or PhD.

Most full-time engineers also receive benefits such as dental coverage, paid sick days and vacation time, and pension plans.

Source: *Career Cruising* database (Profile for Engineer)

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In BC regions you can expect to make:

Location	Wage (\$/hr)		
	Low	Median	High
British Columbia	24.04	39.37	74.52
<u>Lower Mainland - Southwest Region</u>	24.04	41.03	81.36
<u>Vancouver Island and Coast Region</u>	24.04	39.37	74.52

Source: Job Bank, Wage Report http://www.jobbank.gc.ca/wage-outlook_search-eng.do?reportOption=wage

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

	Mean	Lower Quartile	Median	Upper Quartile
All engineer sectors	\$102,834	\$74,000	\$94,000	\$120,000
Industrial/Manufacturing	\$101,827	N/S	\$95,000	N/S
Marine/Naval	\$84,142	N/S	\$79,500	N/S
Materials Handling	\$98,437	N/S	\$76,750	N/S

Source: <http://www.egbc.ca/services/employmentcentre/compensationsurvey.html>

Working Hours

You generally work between 8 and 10 hours a day, 40 to 50 hours a week. However, you may have to work nights and weekends if an important deadline is approaching or if an urgent problem arises.

Source: *Career Cruising* database (Profile for Engineer)

2. Skills, Education and Experience

Skills

- You should be creative, innovative, analytical, and detail-orientated
- Good at problem solving
- Strong critical thinking abilities
- Experience with project management
- Able to work well individually and as part of a team
- Ability to write proposals and make presentations
- Committee work- industry ethics

Education and Experience

To work as a Professional Engineer you require:

- a Bachelor's degree in chemical engineering or in a related engineering discipline
- licensing by Engineers & Geoscientists British Columbia in order to practise as a *Professional Engineer (P.Eng)*

You may also require:

- a Master's degree or doctorate in a related engineering discipline

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 professional engineer you may qualify for provisional 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://engtechinbc.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, electronic sources, and through professional associations.

Local Newspapers

You can look at the Vancouver Sun and 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>

NOTE: *You can only access this database from the Central Library or VPL branch libraries. Access is NOT available from home or outside the Library.*

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 professional engineers (general), look for these related job titles (from NOC 2148):

- food processing engineer
- clinical engineer
- biomedical engineer
- agricultural engineer
- naval engineer
- marine engineer

Creating a List of Potential Employers

You can use directories to produce lists of companies in the Lower Mainland or BC in the engineering services sector. Contact them directly to find out if they're hiring.

- **Association of Consulting Engineering Companies British (ACEC-BC),**
Directory of CEBC Member Firms
<http://www.acec-bc.ca/membership/directory-of-members.aspx>
- **Engineers & Geoscientists British Columbia Membership Directory**
<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 "civil engineering" or NAICS Code "541330" [Engineering Services]
<http://www.ic.gc.ca/app/ccc/srch/cccBscSrch.do?lang=eng&prt1=1>
- **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 "Engineers" or "Marine Engineers" 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:
<http://www.vpl.ca/digital-library/reference-canada>

NOTE: You can access this database from the Central Library or at our branches. If you are using a computer from home or 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 & assistance. Registration and fees are 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 and specific engineering disciplines. Examples at Central include:

- **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>

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/>