



Professional Engineers
Ontario

Licensing as a Professional Engineer

Answers to Frequently
Asked Questions for
Software Practitioners

Licensing as a Professional Engineer

Q What is a professional engineer?

A A professional engineer is a person holding a professional engineering licence granted by a provincial engineering licensing body such as PEO. Holders of a valid licence are allowed to use the title “P.Eng.”

Q What’s the difference between an engineer and a professional engineer?

A There is no difference. Under the Professional Engineers Act, only licensed professional engineers may legally use the term “engineer” in their job title, or any other term, title or description that may lead to the belief that they are authorized to practise professional engineering.

Q I have an engineering degree, but don’t have my P.Eng. I’m an engineer, right?

A Wrong. Legally speaking, you’re an engineering graduate. An engineering education is only the first step to earning your licence. To use the P.Eng. title and be able to take responsibility for professional engineering work, you must additionally acquire four years of acceptable work experience and pass an examination on engineering law and ethics.

Q I work in software. Do I need a P.Eng. licence?

A It depends. If the work you do falls within the definition of professional engineering, you must be licensed by PEO unless someone else who is a licensed engineer takes responsibility for your work.

Q What is professional engineering?

A In the Professional Engineers Act, the practice of professional engineering is defined as:

“Any act of designing, composing, evaluating, advising, reporting, directing or supervising wherein the safeguarding of life, health, property or the public welfare is concerned and that requires the application of engineering principles, but does not include practising as a natural scientist.”

Q If I’m not sure whether what I do is professional engineering, why should I bother getting licensed?

A Besides giving you the right to use the word “engineer” in your job title, a professional engineer licence demonstrates to employers and clients that you have met a rigorous educational standard; been through a demanding, hands-on internship process;

and are obligated to adhere to a strict code of ethics that puts the public interest first. It shows that you are a true professional who’s serious about increasing your responsibility within your company. With software such an integral and often invisible part of modern life, the public credibility afforded by the P.Eng. should not be underestimated. By earning your P.Eng., you’ll join a group of over 63,000 Ontario men and women who are committed to learning, collaborating, and improving the quality of life around the world, and you’ll earn the same respect they have earned.

Q What is Professional Engineers Ontario (PEO)?

A Professional Engineers Ontario (PEO) licenses Ontario’s more than 63,000 professional engineers and sets standards for and regulates engineering practice in the province. It is mandated under the Professional Engineers Act to serve and protect the public interest where the practice of engineering is concerned.

Q What do I need to do to become licensed as a professional engineer?

A What you need to do depends on which of the following three categories you fall into:

1. You are enrolled in a Canadian software engineering programme that has requested accreditation by the Canadian Engineering Accreditation Board.

Subject to your programme being accredited, on graduation you will have fulfilled the academic requirements for licensing. All that will be left is for you to gain four years of acceptable work experience, at least one year of which must be in Canada, and pass PEO’s Professional Practice Examination, which covers engineering law and ethics. For more detailed information on work experience requirements, see the PEO publication *Guide to the Required Work Experience for Licensing as a Professional Engineer*.

2. You have an undergraduate degree from an accredited Canadian engineering programme, but not in the software field.

PEO will examine your work experience in the software field and information on any supplementary academic courses you have taken to determine whether they demonstrate that you have a satisfactory understanding of the fundamentals of software engineering. These fundamentals are in the areas of: **systems and control, digital systems design, computer architecture, program design and data structures, operating systems, software development and software engineering**. Your work experience must also have provided you a strong, working knowledge of at least three of the following areas of

information technology: **real-time systems, advanced object-oriented analysis and design, analysis and design of user interfaces, software project management, software development for large-scale systems, computer communications networks, security in computing, software evolution and reengineering, computer graphics, artificial intelligence and expert systems, distributed systems, introduction to compilers, foundations of modeling and simulation, image processing, parallel computing, microprocessor-based systems, and software quality engineering.**

You may be required to pass assigned examinations to fill any identified gaps in your required knowledge. In some cases, you may be able to take a course in lieu of writing an assigned examination.

3. You do not have an undergraduate degree from an accredited Canadian engineering programme.

PEO will evaluate your academic transcripts to determine the extent to which your education has provided you with knowledge of the requisite engineering fundamentals, basic sciences and mathematics. For example, knowledge in the areas of: **discrete mathematics, probability and statistics, electric circuits and power, advanced mathematics, and digital logic circuits**, is mandatory. The evaluation will also look at whether you have acquired knowledge of the software engineering fundamentals mentioned above, and a strong working knowledge of three of the areas of information technology mentioned above, as well as engineering economics.

If you have more than five years of work experience, your experience will automatically be considered in determining whether

you have acquired the necessary knowledge. You may be required to pass assigned examinations to fill in any identified gaps in your required knowledge.

If your work experience has not been evaluated before you are assigned exams (i.e. you've been working for less than five years), you may request that it be assessed after exams are assigned to see whether any of the assigned exams can be waived. In some cases, you may also be able to take a course in lieu of writing an assigned examination.

Like those in the first category, those falling into the second and third categories must also acquire four years of acceptable work experience, at least one year of which must be in Canada. For more detailed information on work experience requirements, see the PEO publication *Guide to the Required Work Experience for Licensing as a Professional Engineer*. You will also need to pass PEO's Professional Practice Examination, which covers engineering law and ethics.



How can I get a licence application?



You may request that an application form be sent to you by contacting:

Professional Engineers Ontario
25 Sheppard Ave. West, Suite 1000
Toronto, ON M2N 6S9
Tel.: 416-224-1100, 1-800-339-3716
(Ontario only)
Fax: 416-224-8168, 1-800-268-0496
email: webmaster@peo.on.ca

Or you may visit PEO's website at www.peo.on.ca to print out an application form.