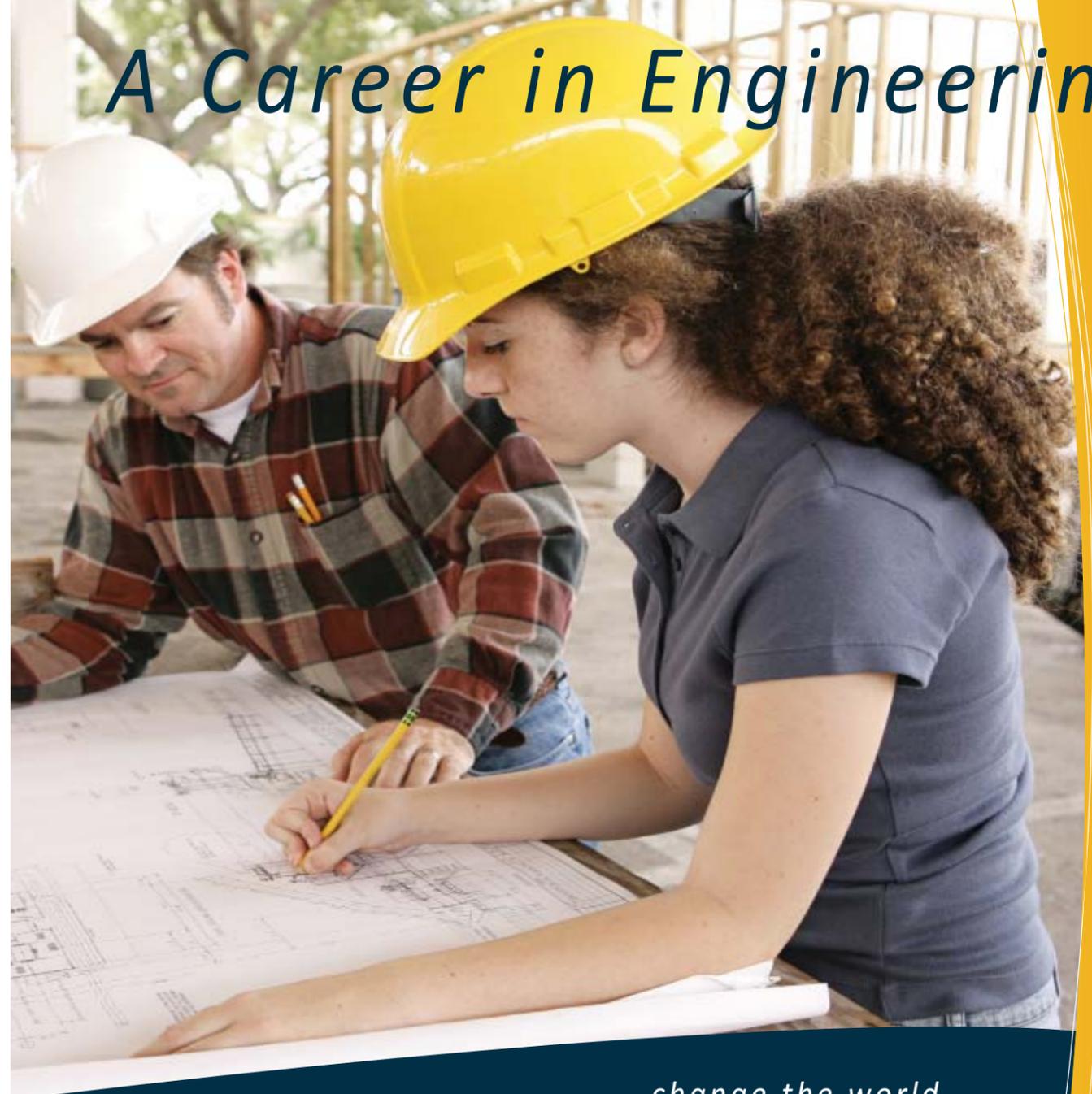


# A Career in Engineering



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.....change the world

*Whether you're constructing a building, designing a microchip circuit or simply inventing a solution to a problem, you are helping to make the world a more safe and functional place.*

#### DISCIPLINES

- Biological
- Chemical
- Civil
- Computer
- Electrical
- Environmental
- Industrial
- Materials
- Mechanical
- Mineral Resource



### What do engineers do?

Engineers use their imagination, creativity and expertise to create new and improved products and processes. Engineers solve problems, we design, implement, construct and recommend solutions to any given problem by using the knowledge and tools we have learned. If you enjoy using your hands and your head, become an engineer! Speak to your local guidance counselor today!

## A career with a future

You could be involved in challenging opportunities and providing solutions for the future! You could become the CEO of a company, manager, supervisor, specialist or generalist. Careers in engineering are innovative and exciting. Men and women who are bright, knowledgeable and creative are needed for these positions.

### EMPLOYMENT OPPORTUNITIES

What engineers design, build and find impacts our daily lives, technology is advancing at a rapid rate, highly skilled, qualified professionals are needed to meet these advances now and make our world a better place to live.

### LET'S TALK \$\$\$

Salaries for new Graduates range between \$40,000 and \$44,000. As engineers gain experience, they become more valuable to employers. Their compensation rises with experience and the value of their contribution.

## Education

A degree in engineering normally requires four to five years of university education, depending on the area of specification. The program for a degree in Engineering is discipline specific and often includes the equivalent of one year of paid, supervised work experience through co-op work terms or internships.

You require a grade 12 level academic English and four additional university preparatory courses. Courses should include physics, chemistry and advanced or pre-calculus math.

Entrance requirements vary slightly between universities, so you should con-

discount received for insurance benefits through TD Meloche Monnex Insurance. Engineers Nova Scotia ensures that only those licensed or registered with the association are permitted under the law to practice engineering in Nova Scotia.

As a member of the Association, whether as a Student Member, an Engineer in Training, a Professional Engineer or a Corporate Member. There are several benefits that can be taken advantage of, such as:

- First and foremost is the ability to legally practice engineering in the province of Nova Scotia.
- Reduced home, life and auto insurance rates through TD Meloche Monnex insurance.
- Reduced professional liability insurance rates through Encon insurance.
- Reduced membership rate at DalPlex and Dartmouth Sportsplex.
- Receipt of all Engineers Nova Scotia publications.
- Eligibility to join a variety of Engineers Nova Scotia Committees.
- The use of other services such as the Career Opportunities service on our website.

For more information about Engineers Nova Scotia, please contact the office at 902.429.2250 or toll free at 888.802.7367.



### Did you know?

Engineers Nova Scotia has a Scholarship available to the Sons and Daughters of Engineers Nova Scotia Members. Please contact the office for more information.

Engineers Nova Scotia is a strong supporter of organizations such as Math Olympiad, Girl Guides, the Discovery Centre, Science fairs, Youth Experience and Universities to name a few.

Engineers Nova Scotia works closely with the schools and universities to assist with providing information to students about engineering.

# Engineers Nova Scotia

## WHO WE ARE

Engineers Nova Scotia is the licensing and regulatory body for the more than 5000 Professional Engineers (P.Eng.'s) and Engineers-in-Training (EIT's) practising in Nova Scotia or on Nova Scotia Projects.

## MISSION

Engineers Nova Scotia's mission is to serve and protect the public interest, to advance and promote the value and proficiency of the Engineering Profession, and to support the members in their professional practice.

## SCHOLARSHIPS & AWARDS

Engineers Nova Scotia provides support to engineering students and annually awards up to 25 scholarships valued in total at \$30,000. These awards include: (please contact the office for values of the awards listed below)

- Engineers Nova Scotia Awards
- Engineers Nova Scotia Prize
- Engineers Nova Scotia Senior Project Award
- Engineers Nova Scotia Convocation Award
- Marc Garneau, Ph.D., P.Eng. Scholarships
- Engineers Nova Scotia Entrance Scholarships

## ADDITIONAL SUPPORT

Engineers Nova Scotia also contributes \$20,000 annually in support of various engineering student activities and events.

## COMMITTEE INVOLVEMENT

Engineers Nova Scotia supports many committees, which are comprised of volunteer members of the Association. We are constantly working to improve and/or implement services offered by the association.

The Student Affairs Committee promoted the engineering profession and Engineers Nova Scotia to students at all levels.

The Publications Committee is working to ensure that publications released from the Engineers Nova Scotia office reflect the message of the association to protect the public.

The National Engineering Month Committee works to ensure that the general public is aware of the fact that engineering and technology affect all parts of our daily lives.

The Environment Committee keeps the membership and the general public informed of the impact of environmental issues such as Climate Change.

The Act Enforcement Committee ensures that every engineer who practices engineering in the province of Nova Scotia is licensed to do so under the association's Act and By-Laws.

## MEMBERSHIP

Recent advances in the Engineers Nova Scotia Student Membership program are such that a student who is registered with the Faculty of Engineering at Dalhousie University and any of the Associated university can automatically register as a student member upon providing the office with contact information. One of the major benefit to becoming a Student Member is the

tact the appropriate university department for information on student quotas and required average grades.

## SCHOLARSHIPS & AWARDS

Scholarship information is available on the Engineers Nova Scotia website at [www.engineersnovascotia.ca](http://www.engineersnovascotia.ca) under Student Services. Visit university websites or contact the university registrar's office for additional information. You may be able to obtain scholarship and awards information from your school office.

## WORK ATMOSPHERE

As a professional engineer, you have considerable control over what you do and where you work. With a degree in engineering, your career possibilities are endless. Engineers work in a variety of settings. You may find yourself in a research lab, at an oil refinery, in a manufacturing plant or a high tech facility. You could be on a construction site, a ship, or a drilling platform in the middle of the ocean. You may be in a field crew on a mountain top, in the jungle or in the northern tundra. You may be surrounded by massive equipment at a plant site. Or you may find yourself having to explain a proposed project to a community group or justify a project to your CEO.



What skills do you need? Are you naturally curious? A problem solver? Do you like coming up with new ideas and trying them out or finding new ways of getting a job done? Do you want to know why or how? Are you able to work and share your ideas with others? Good communication skills are an important tool in the work of an engineer.

Do you like science and math? These subjects are an essential part of engineering. If you enjoy them, chances are you would enjoy being an engineer.

Engineering is an interesting career that will give you the satisfaction of finding, inventing or building things that benefit people, the community and the environment.



# Which type of engineering is for you?

It isn't necessary for you to decide on your engineering discipline right away. In most cases, you have until the second year of

university to consider the alternatives. Investigate jobs available to graduates of engineering.

## Disciplines

### THE FOLLOWING DISCIPLINES ARE AVAILABLE IN NOVA SCOTIA

#### BIOLOGICAL ENGINEERING

Biological Engineering offers a biosystems and an environmental focus. Biosystems engineers find employment in agriculture, aquaculture, food, machinery manufacturing and all levels of related design and management. Biological engineers practicing in the environmental area deal with challenging problems in air quality, waste management and soil contamination.

#### CHEMICAL ENGINEERING

Chemical Engineering involves a variety of activities such as development of novel processes and products, management of technical operations, and sales. Areas of employment include petroleum and natural gas, environmental control, plastics, pulp and paper, energy conversion, and biotechnology.

#### CIVIL ENGINEERING

Civil Engineering represents some of the oldest engineering disciplines, yet still one of the most challenging. The need to produce clean water, build higher buildings and longer lasting structures, all fall under Civil Engineering. Civil Engineers are also involved in designing environmental protection infrastructures (landfills, remediation of contaminated sites, etc.)

#### COMPUTER ENGINEERING

Computer Engineering is the science and technology of the design, construction, implementation, and maintenance of hardware and software components of modern computing systems and computer-controlled equipment. Computer Engineering complements Computer Science and Electrical Engineering, allowing individuals to practice in a variety of fields, from software development to hardware design.

#### ELECTRICAL ENGINEERING

Electrical Engineering includes activities related to the design, planning, operation and maintenance of a broad spectrum of important systems, including, but not limited to: Wireless Communications and Networks, Control Systems, Electric Power, Energy Systems, Robotics, Microelectronics and IC Design and Fiber Optics, Microprocessors, Signal Processing, Electromagnetics (Satellite), and Radio and Microwave Technology.

#### ENVIRONMENTAL ENGINEERING

Environmental Engineering applies science and engineering principles to reduce the impact of human activities on the environment. Environmental Engineers possess the necessary knowledge and skills in biological, chemical and physical systems to identify, prevent and mitigate the formation of pollutants; and their introduction and movement in the environment.



#### INDUSTRIAL ENGINEERING

Industrial Engineering is also known as systems or management engineering. Graduates design complex systems that help society function effectively, ranging from worldwide supply chains to facility layout, solving problems from material flow to workforce scheduling, in industries ranging from aerospace to health care.

#### MATERIALS ENGINEERING

Materials Engineering graduates design materials for many uses including the production of computer chips, corrosion-resistant surgical implants and environmentally friendly fuel cell vehicles.

#### MECHANICAL ENGINEERING

Mechanical Engineering opens doors to a range of professions in land, sea, air, and space transportation; primary and secondary manufacturing; energy supply, conversion and utilization; environmental control; and industrial management. Work may include design, construction, operation, development, research, planning, sales or management.

#### MINERAL RESOURCE ENGINEERING

Mineral Resource Engineering graduates may design and plan surface/underground working spaces at mine sites or oil/gas wells in petroleum fields, extract minerals in processing plants, process oil/gas in production plants, or become mineral engineering experts in consulting and financial firms and government agencies.



### Want more information?

Talk about it. Your school guidance councillors or teachers can help. Discuss your career plans with your parents. Attend school career events as well. Talk to a professional engineer about what they do.

### Investigate.

Examine university calendars. Attend university open houses. Contact the Registrar of the Faculty that you are interested in to discuss prerequisites and courses required to complete a degree

### Check it out

Visit your school or public library to learn more about these professions. Visit university and other related websites. Visit the Engineers Nova Scotia website at [www.engineersnovascotia.ca](http://www.engineersnovascotia.ca) or [www.jobfutures.ca](http://www.jobfutures.ca)