

PROGRAM QUALIFIERS (AS DETERMINED BY CAREERS, INDUSTRY AND POST-SECONDARY)

- Full-time high school student
- 95% attendance in school
- Regularly on time for classes
- Have an average or superior academic standing, particularly in math and science
- Successful completion of or be currently enrolled in:
 - Math 10 (Pure or Applied)
 - Science 10
 - English Language Arts 10-1 or 10-2
- On track to graduate from high school
- Mechanical and electrical aptitude
- Good vision, hearing, manual dexterity and eye-hand coordination
- Good communication skills in person and in writing
- Good organizational and decision-making skills
- The ability to work well with others in a team environment
- Participate in a successful interview by an industry sponsor
- Excellent school citizen



Industry is in critical need of trained and experienced power engineers, and offers lucrative employment to individuals who have successfully mastered the education, training and skill requirements in power engineering.

To learn more about becoming a power engineer, go to www.alis.gov.ab.ca and read the occupational profile

ABOUT POWER ENGINEERS

Power engineers are responsible for the safe operation and maintenance of industrial equipment such as boilers, steam and gas turbines, generators, gas and diesel internal combustion engines, pumps, condensers, compressors, pressure vessels and related controls.

Power engineers may be employed in any industry in which boilers are used. For example, they may be employed in gas plants, power generating plants, heavy oil plants, petrochemical plants, pulp mills, refineries, hospitals, hotels, and other institutions.

There are five levels of provincial certification for power engineers: 5th, 4th, 3rd, 2nd and 1st Class. Power engineers who work with high-pressure boilers require a 4th Class Power Engineering Certificate.

Earnings for power engineers vary according to the level of certificate held and the responsibilities of the position.

PATHWAY AND MENTORSHIP PARTNERS

- Post-secondary Institutions
- Regional and Local Employing Industry
- Schools and School Systems
- Alberta Boiler Safety Association
- Alberta Education / Advanced Education

CAREERS:

The Next Generation



CAREERS:
THE NEXT GENERATION

INTRODUCING HIGH SCHOOL STUDENTS TO THE POWER ENGINEERING CAREER PATHWAY

4TH CLASS POWER ENGINEERING PATHWAY AND MENTORSHIP PROGRAM



*A future worth working for...
An exciting Career
Exploration Opportunity*

PATHWAY OVERVIEW

The 4th Class Power Engineering pathway and mentorship program provides an opportunity for suitably qualified and motivated students to enroll in a Power Engineering technical training program while attending high school. Through the three-year program, students receive credits toward a high school diploma and at the same time have opportunity to meet requirements for a 4th Class Power Engineering certificate.

HOW IT WORKS

A student spends all or most of the first and second semester in grade 10, 11 and 12 completing a full course load. That is, students will complete both academic (core) course requirements and optional (complementary) courses that address theory components of the power engineering program.

Successful achievement in both core and complementary school courses enables the student to spend up to 320 internship hours each summer as a full-time paid worker in a local heating or power plant.

Program delivery is shared among partnering schools, post-secondary institutions and industries. A hybrid model for instruction is used involving distance and online learning combined with face-to-face mentoring, followed by practical real-time workplace experience.



Power engineers ensure that equipment and processes operate at maximum efficiency. They also write reports about plant operation.

YEAR I

- Complete 11 CTS credits of theory coursework; topics of study include Legislation and Safety, Materials, Welding and Piping, and Boiler Design and Operation
- Conditional upon successful completion of theory coursework, develop practical competencies through a paid summer internship of up to 320 hours; credits are earned in Career Internship 10 and Work Experience 15 courses

YEAR II

- Complete 12 CTS credits of theory coursework; topics of study include Engines, Pumps and Compressors, Principles of Electricity, Controls and Instrumentation, and Hot Water and Steam Boilers
- Conditional upon successful completion of theory coursework, develop practical competencies through a paid summer internship of up to 320 hours; credits are earned in Work Experience 25 courses

YEAR III

- Complete 10 CTS credits of theory coursework; topics of study include Heating Systems and Controls, Refrigeration and Air Conditioning, and Boilers and Powerhouse Maintenance
- Conditional upon successful completion of theory coursework, develop practical competencies through a paid summer internship of up to 320 hours; credits are earned in Work Experience 35 courses

NOTE: Safety training is an important component in each summer internship learning experience.



Duties of a power engineer include monitoring alarms, gauges and other instruments associated with plant operations.

THE OPPORTUNITY

The Power Engineering pathway and mentorship program prepares high school students, upon graduation, to meet requirements for a 4th Class Power Engineering certificate. In doing so, students who participate in the program will:

- Link their classroom learning with future workplace careers
- Earn high school credits toward graduation
- Acquire paid summer internships in each year of their high school program
- Upon graduation, be well-prepared to a career pathway in the power engineering industry
- Become attached to a committed industry and prospective employer
- Build essential employability skills
- Receive post-secondary credit transferable to possible further study in the field of power engineering.

HOW TO GET STARTED

- ⇒ Attend a CAREERS Information Workshop at your school
- ⇒ Meet with your school-based Off-Campus Coordinator
- ⇒ Ensure you meet the program qualifiers
- ⇒ Plan your high school program
- ⇒ Complete a program application