Power Engineering Technology

MACPHAIL SCHOOL OF ENERGY

Overview

Our comprehensive two-year Power Engineering Technology diploma will equip you with the knowledge and skills to obtain your Third-Class Power Engineer certification.

If you are passionate about energy systems and industrial processes, this program is for you.

As a student, you will:

- study the principles of generating thermal and electrical energy efficiently and safely, knowledge that is essential for operating and maintaining power and process plant equipment
- gain in-depth knowledge of applied thermodynamics, the laws governing heat, energy and work, which are vital for understanding, managing and optimizing energy conversion processes in the power generation and chemical process industry
- gain practical experience operating energy and process equipment, such as boilers, turbines, electrical generators, pumps, compressors, internal combustion engines, chillers and air handling units
- prepare to write the Alberta Boilers Safety Association (ABSA) exams required to attain the Third-Class Power Engineering certification, an important credential in this field
- become familiar with the ABSA standards for the safe operation of pressure equipment in Alberta.

With this diploma, you can explore career prospects as a plant operator, plant shift supervisor, or chief plant engineer across various industries such as power generation, petrochemical, refining, and pulp and paper. The skills you will acquire can also open doors to other opportunities in the energy and process industries, including positions in safety, management, and technical sales.

By the end of this program, you will have the foundation to thrive in the power engineering field.

Traits, skills and aptitudes

Those in power engineering tend to be objective, innovative, and methodical.

You need:

- mechanical and some electrical aptitude
- good vision, hearing, and eye-hand coordination
- manual dexterity
- communication skills
- organizational and decision-making skills
- the ability to work with others in a team environment.

Power engineers and process operators control and operate complex systems manually and through automation. You should be analytical and enjoy problem-solving, while adhering to efficiency and safety standards and codes.

Some employers may require colour-blind testing.

Wearing a hard hat and other PPE in the lab is mandatory. Holding a valid driver's license is strongly encouraged.

Academic path

Graduates of this program can prepare to write the required ABSA exams to achieve their Second- and First-Class Power Engineering certification by taking our flexible Continuing Education courses.

Professional designations and certifications

Graduates are eligible for registration in the Alberta Society of Engineering Technologists.

This program is currently under review by Technology Accreditation Canada (TAC.)

Credentials

After successfully completing this program, you'll receive a SAIT Power Engineering Technology diploma.

Admission requirements

Applicants educated in Canada

Applicants must demonstrate English language proficiency and meet one of the below requirement options.

Option A

Completion of all the following courses or equivalents:

- at least 60% in Math 30-1 or 75% in Math 30-2, and
- at least 60% in English Language Arts 30-1 or 75% in English Language Arts 30-2, and
- at least 60% in Physics 30.

Option B

Completion of all the following or equivalents:

- SAIT Power and Process Operations certificate program and
- at least 60% in Physics 30.

SAIT accepts high school course equivalents for admission for applicants educated outside Alberta.

Applicants educated outside of Canada

All applicants who were educated outside of Canada must demonstrate English language proficiency and provide proof they meet the program admission requirements outlined above with an international document assessment. Find accepted educational documents and assessment options.

SAIT may also accept courses completed at certain international post-secondary institutions.

Costs

2025/26 tuition and fees

The following estimated costs are effective as of July 1, 2025.

The estimated total cost of tuition and fees is based on the suggested schedule of study. Following a modified schedule will impact the fees you pay per semester and may alter final costs.

Domestic Students

Year	Number of semesters	Tuition fees	Additional fees	Total per year
1	2	$6,360	$1,668.60	$8,028.60
2	2	$6,678	$1,668.60	$8,346.60
			Total cost:	**$16,375.20**

The estimated total cost of tuition and fees for domestic students is based on the recommended course load per year.

International Students

The program total is based on the estimated amount you will pay if you enter this program during the 2025/26 academic year. The

program total amount listed on your letter of admission may appear higher. This amount is your maximum tuition guarantee for the program. SAIT will not exceed this maximum, regardless of changes in tuition and fees between academic years.

Year	Number of semesters	Tuition fees	Additional fees	Total per year
1	2	$21,450	$1,668.60	$23,118.60
2	2	$22,522.50	$1,668.60	$24,191.10
			Total cost:	**$47,309.70**

The estimated total cost of tuition and fees for international students is based on the recommended course load per year.

Books and Supplies

Books and supplies are currently $1,600 per full-time year.

This is a bring-your-own-device program with standard computer hardware and software requirements. See the specific requirements on our computers and laptops page.

You'll require the following books and reading materials for the program, which can be purchased from PanGlobal:

- Power Engineering Fourth Class Textbook Set - Part A, Part B and Academic Supplements (used in PENG 201, PENG 203, PENG 251, PENG 253, THRM 208, and THRM 258)
- Power Engineering Third Class Textbook Set (used in ELCT 304, PENG 301, and PENG 351)
- Power Engineering Second Class Textbook - Part B3 (used in ELCT 354)
- Power Engineering Fourth Class Textbook Set - Part A (used in SFTY 215)

AMEC356 will require Mott, Robert L; Untener, J. A. (2015): *Applied Fluid Mechanics* (7th in SI Units ed.), Pearson, which can be purchased from the SAIT Bookstore.

Required personal protective equipment (PPE)

The industry-approved PPE you'll need will be discussed during your first few days of classes.

We recommend wearing CSA-approved (green triangle, above the ankle) protective footwear in our labs. A hard hat and safety glasses will be provided to you. Hard hats are required to be worn in the lab.

Required equipment/tools

You'll require a scientific calculator capable of performing linear regression.