Automation and Instrumentation Engineering Technology

MACPHAIL SCHOOL OF ENERGY

Overview

The Instrumentation Engineering Technology program is designed to give you comprehensive theoretical and hands-on training in the operation and maintenance of automated process control and measurement systems.

Instrumentation and control engineering systems are essential in producing a range of commodities, offering various career opportunities.

In this program, you will:

- gain proficiency in managing automated process control systems that are pivotal in modern manufacturing and production
- acquire skills to install, troubleshoot, calibrate and repair electrical/electronic measurement and control instruments
- delve into pneumatic devices, control valves, electronic instruments, digital logic devices and computer-based process controls
- learn to design robust control systems, including Fieldbus™ SCADA, PLC and distributed control systems
- master interfacing industrial microcomputer control systems with actual processes for seamless operation
- carry out pilot-scale or trial-run processes within modern laboratory facilities, including a fully equipped control room
- become an adept technician in personal computer applications relevant to instrumentation and process control systems.

As a graduate, you can pursue a career in control engineering, engineering design, instrumentation sales and industrial process plants across sectors such as power production, oil and gas, fertilizer production, petrochemicals, food processing and more.

With an impressive employment rate for graduates, the program opens doors to a prosperous career in instrumentation and control engineering technology.

This program spans over two years, with each academic year comprising two 15-week semesters. It's offered exclusively full-time. We recommend attending an information session to learn more about the curriculum, meet instructors and understand the career pathways available after graduation.

Embrace the opportunity to become a skilled professional in a field integral to the efficiency and success of the industrial sector.

Traits, skills and aptitudes

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

You need:

- aptitude in math, chemistry and physics
- the ability to visualize 3D objects from 2D drawings
- persistence
- speaking and listening skills
- people skills to work in teams
- hands-on mechanical skills to troubleshoot equipment in the field.

You should enjoy doing precise work, analyzing test results, finding innovative solutions and taking a methodical approach to your work.

Practicum, Co-op and Work Integrated Learning

You'll complete a capstone project to prepare you to work with all project elements, from managing and planning, to work breakdown structures and scheduling.

Accreditations, designations and certifications

This program is nationally accredited by Technology Accreditation Canada (TAC) at the Engineering Technologist level.

Students and graduates are eligible to join the Association of Science and Engineering Technology Professionals in Alberta (ASET) and the International Society of Automation (ISA).

Credentials

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

Admission requirements

Applicants educated in Canada

All applicants must demonstrate English language proficiency and meet the following requirements 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 20, and
- at least 60% in Chemistry 20.

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 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

2026/27 tuition and fees

The following estimated costs are effective as of July 1, 2026.

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	$5,910	$1,764.50	$7,674.50
2	2	$5,910	$1,764.50	$7,674.50
			Total cost:	**$15,349**

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 2026/27 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

Year	Number of semesters	Tuition fees	Additional fees	Total per year
1	2	$20,580	$1,764.50	$22,344.50
2	2	$20,580	$1,764.50	$22,344.50
			Total cost:	**$44,689**

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 approximately $1,000 - $1,500 per full-time year.

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

Find your booklist on the SAIT Bookstore's website. The booklist will be available closer to the program start date.

Can't find your program or course? The bookstore didn't receive a textbook list. Contact your program directly to determine if they're still refining course details or if you're in luck; no textbook purchase is required this term.

Required equipment/tools

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

Required personal protective equipment (PPE)

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

PPE is required in various labs. You'll need CSA-approved (green triangle) protective footwear and CSA Z94.3 (class 1) safety glasses with side shields.