Materials and Joining Engineering Technology

SCHOOL OF MANUFACTURING & AUTOMATION

Overview

Build foundational skills in materials inspection, engineering analysis, and advanced welding technologies. This two-year program integrates emerging technologies equipping you with future-focused skills and knowledge to lead in high-impact roles.

You'll design, test and manage the processes that join materials to create safe and durable structures. You'll also learn to oversee production, ensure quality and safety, supervise skilled trades teams and prepare technical reports, drawings and documentation.

If you're interested in pursuing career options as a welding engineering technologist, materials engineering technologist, robotics or automation technician, manufacturing technologist, asset integrity professional, chief inspector and more, this program will help you gain the experience needed for success after graduation.

You'll learn in state-of-the-art facilities, with structured classes closely aligned with industry expectations. The workload for this program is consistent with a full-time diploma, and you can expect a blend of classroom theory and hands-on learning in computer, welding robotics and materials testing labs.

You'll develop specialized skills by choosing one of two streams within the program.

Advanced Manufacturing and Robotic Welding

Build the skills needed to support and lead advanced manufacturing and automated fabrication environments through the integration of robotics, lean systems, specialized welding processes and digital manufacturing tools. You'll also learn to operate, program and troubleshoot robotic systems safely and effectively.

Advanced Inspection and Asset Integrity

Specialize in inspection, corrosion assessment, risk-based integrity management and inspection program governance. Gain experience using artificial intelligence, additive manufacturing, robotics and drones. Asset integrity plays a critical role across diverse sectors, including oil and gas, nuclear energy, wind power and advanced manufacturing.

Traits, skills and aptitudes

Those who work in this field tend to enjoy doing precise work with tools, finding creative solutions and can work individually or with a team. You need:

- mechanical inclination
- strong communication skills
- to enjoy hands-on work
- to be a self-starter
- an interest in working with processes and equipment
- to enjoy solving problems
- the ability to take a step-by-step approach to your work
- respect for workplace safety.

SAIT program pathways

Upon successful completion of this program, you'll have the foundational experience to move or transfer into SAIT's Non-Destructive Testing Certificate. Courses from this program give credit towards the welding apprenticeship pathway.

Accreditations, designations and certifications

By completing this program, you'll receive the ASET Certified Engineering Technologist certification.

This program is nationally accredited with Technology Accreditation Canada (TAC). Upon completion, you'll be eligible to receive the ASET Certified Engineering Technologist certification and the CWB Level 1 Inspector industry designation.

Credentials

Upon successful completion of this program, you will receive a SAIT Materials and Joining Engineering Technology diploma.

Admission requirements

Domestic requirements

Applicants must demonstrate English language proficiency and completion of the following courses or equivalents:

- at least 60% in Math 30-1 or at least 70% in Math 30-2, and
- at least 60% in English Language Arts 30-1 or 70% in English Language Arts 30-2, and
- at least 60% in Chemistry 20 or Science 30.

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

International requirements

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

2027/28 Tuition and fees

The following costs are an estimate as of July 1, 2027.

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	$11,970	$1,764.50	$13,734.50
2	2	$11,400	$1,764.50	$13,164.50
			Total cost:	**$26,899**

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 2027/28 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	$21,121	$1,764.50	$23,941.50
2	2	$22,177	$1,764.50	$22,885.50

Year	Number of semesters	Tuition fees	Additional fees	Total per year
			Total cost:	**$46,827**

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 $1000 for year one and $1600 for year two.

This is a bring-your-own-device program with a custom 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 close to your 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 for that term.