ASTTBC TECHNOLOGY PROFESSIONALS

Technologist profile

Applied Science Technologist (AScT) is a protected title; these professionals are graduates of an accredited diploma program or equivalent in engineering or applied science technology who have completed two or more years of progressive experience in an area of work directly related to the program of study. The type of work experience considered at the technologist level includes but is not limited to:

- Routinely engaged in designing, developing, testing and commissioning of engineered products processes, buildings, infrastructure, facilities, systems and services.
- Demonstrates a broad depth of knowledge and effective communication skills to undertake a variety of technical assignments.
- Conducts technical work involving analysis, performance assessment and applying judgement resulting in operational decisions on technical teams.
- Develops technical documentation, procedures, or training materials to support and guide the engineering team, clients and other professionals. Provides direction tailored to the needs and technical understanding of the intended audience to resolve engineering problems.
- Implements applied problem-solving techniques to design, develop, manufacture, commission, operate and maintain products, equipment, facilities, processes and services.
- Identify, formulate, research literature and analyze broadly defined engineering problems reaching substantiated conclusions using established analytical methods, processes and/or principles appropriate to the engineering/applied science discipline or area of specialization.
- Applies engineering and scientific principles to independently solve complex technical problems within a defined scope. Operates with broad direction and collaborates with other professionals, seeking approval where required.

As a result of their education, training and experience in the application of known principles of applied science and engineering technology, technologists are professionals capable of assuming and exercising independent professional judgment to develop and manage technology.

Technologists may perform a wide range of complex work either independently or under general direction in a variety of fields, such as applied research, building and construction technology, infrastructure development, geomatics, biosciences, allied health and resource or systems management. Typical activities include design and drafting, maintenance, planning, production, testing, quality control, estimating, surveying, inspection, diagnostic evaluation, supervision, management, technical sales and teaching. Such activities may be carried out in association with other professionals.

Technologists use a structured approach based on a comprehensive understanding of established practices and principles of engineering and applied science, to evaluate assignments, determine procedures and implement solutions, schedule work to meet objectives, participate in short and long-range planning and may become involved in developing and promoting conceptual change.

Technologists may assume managerial or administrative responsibility for a wide range of technical endeavours. They may supervise and/or coordinate a diverse working group, including training for other technical and professional staff. They may be responsible for making decisions on part or all of one or more broadly defined engineering or applied science technology activities.

Technologist – typical activities	
Role	Leads/carries out advanced technical work to resolve broadly defined applied science and engineering technology problems.
Scope of work	Design, analysis, project management and/or coordination.
Judgement/knowledge	Applies standard methodologies with broad direction. Exercises judgement and interprets codes/standards. Works on broadly defined engineering problems that cannot be resolved without engineering knowledge which may include: • Specialist knowledge that provides theoretical frameworks and bodies of knowledge for an accepted sub-discipline. • Knowledge about efficient resource use, environmental impacts, whole-life cost, re-use of resources, net zero carbon and similar concepts, that supports engineering design and operations. Utilizes conceptually based mathematics, numerical analysis, data analysis, statistics and formal aspects of computer and information science to support detailed consideration and use of applicable models. Possesses specialized engineering knowledge that provides theoretical frameworks and bodies of knowledge for an accepted sub-discipline.
Design and drafting	Prepares complete technical designs and plans. Designs components, systems, or processes to meet specifications. Uses CAD/BIM, simulation tools and industry standards. Involve the use of new materials, techniques or processes in non-standard ways.

Inspection and testing	Plans and conducts field reviews/inspections and analyzes inspection and test data; prepares inspection reports for quality assurance/quality control compliance. Makes recommendations. Liaise with engineers to recommend repair or maintenance solutions.
Problem solving	Develops and implements solutions to complex technical problems. Uses well-proven analysis techniques and models. Conducts experiments, interprets data and validates solutions. Involves a variety of conflicting technical, non-technical issues, such as ethical, sustainability, legal, political, economic, societal and consideration of future requirements. Design solutions for applied science and engineering technology problems and contribute to the design of systems, components or processes to meet identified needs with appropriate consideration for public health, safety, whole-life cost and environmental considerations as required.
Examples of work	Design/drafting and analysis. Site investigations and reports. Commissioning of operating and control systems/facilities. Supervise field technicians and ensure adherence to industry standards such as the: • American Society for Testing and Materials (ASTM) • Canadian Council of Independent Laboratories (CCIL) • Canadian Standards Association (CSA) • National Fire Protection Association (NFPA) • Underwriters Laboratories Canada (ULC) • and others.

	Perform commissioning tests for a variety of systems including electrical, building and fire protection, mechanical and HVAC, renewable energy to name a few. Industrial controls work such as the design, development and programming of: • Programmable Logic Controller (PLC)-based automation and control systems • Human Machine Interface (HMI) systems • Supervisory Control and Data Acquisition (SCADA) systems Ensuring work conforms to regulatory compliance requirements.

Qualifications & experience

Title & practice restrictions licensing
Under the *Professional Governance Act*, only individuals who are appropriately registered may use the restricted title **Applied Science Technologist (AScT)**.

Registration may also be required to lawfully perform certain regulated scopes of practice. For example, AScTs may serve as qualified environmental professionals (QEP) under the Riparian Areas Protection Regulation where they meet all QEP requirements.

Education & training required after high school

Approximate duration including work experience: four years.
Typical classroom contact hours & credential: 2,000 hours, diploma of engineering or applied science technology or equivalent.
Typical education content/focus: theoretical, academic, technical, business.

Required work experience

A minimum of two years of work experience, including at least one year at the technologist level.

Technologist registration requirements can be found in the ASTTBC Bylaws.