Ontario

Technology and the Skilled Trades 10

Grade 10, Open (TAS2O), 2024

Overall and Specific Expectations

A STRAND A: Design Processes and Related Skills

Students engage in an engineering design process throughout this strand.

By the end of this course, students will:

A1. Initiating and Planning

demonstrate an understanding of fundamental technological concepts and related skills by initiating and planning projects

A1.1 apply an understanding of fundamental technological concepts, and evaluate their significance in developing products and/or services in a variety of broad-based technology areas

A1.2 apply an understanding of fundamental technological concepts, design considerations, and science, technology, engineering, and mathematics (STEM) concepts as appropriate in developing projects involving the creation of products and/or services

A1.3 investigate design considerations, including accessibility requirements, that are relevant to developing projects, and identify those that are essential to various users or communities

A1.4 communicate design ideas for various purposes and audiences, using appropriate industry terminology and industry-standard formats and techniques

A1.5 establish and justify evaluation criteria for products and/or services being developed, including both qualitative and quantitative measures, making connections to relevant fundamental technological concepts

A1.6 investigate and describe project management skills and approaches that are relevant to developing products and/or services, and explain how they will use these skills in their own projects

A1.7 collect and synthesize information from a variety of sources, including people with diverse perspectives and from various communities, such as First Nations, Métis, and Inuit, to inform their projects

A2. Designing and Performing

develop projects that involve creating products and/or services, using a variety of resources and techniques, and record the development of their projects

A2.1 use project management skills to develop a process to create a product and/or service

A2.2 identify factors that could impact the development of their projects and apply appropriate strategies to increase the probability of a positive outcome

A2.3 select materials and other resources based on their properties or characteristics, including sustainability, and justify their use in the creation of products and/or services

A2.4 select, use, and maintain tools and equipment appropriately as part of creating products and/or delivering services

A2.5 use a variety of industry-related documents to guide the creation of products and/or the delivery of services as part of their projects

A2.6 create products and/or deliver services, documenting their development process using appropriate industry terminology

A2.7 select appropriate units of measure and tools to make accurate measurements using relevant measurement systems, such as the metric and imperial systems, and converting between systems and units

A3. Analyzing and Refining

evaluate and refine processes, products, and/or services

A3.1 identify challenges they encounter in the process of developing their projects and apply critical thinking skills to address these challenges and minimize the probability of their reoccurrence

A3.2 identify various industry-relevant performance standards and quality control methods

A3.3 analyze the performance of products and/or service delivery using quality control methods

A3.4 refine the design of products and/or services based on an analysis of data collected throughout the development process

A3.5 communicate project-related challenges, performance analyses, and refinements for a specific audience, using appropriate formats and terminology

A4. Applying Health and Safety Principles

apply an understanding of health and safety practices and procedures when using materials, tools, and equipment

A4.1 describe relevant health and safety regulations for a variety of settings, including mandated roles and responsibilities

A4.2 identify hazards in their environment, and apply strategies to minimize risks

A4.3 use tools and equipment safely, including using personal protective equipment and safety devices according to safety standards and regulations, as appropriate

A4.4 follow practices that support physical and mental health and well-being

A4.5 follow proper procedures for the safe handling, storage, and disposal of materials and waste products

A4.6 demonstrate a safety mindset by making safety a priority at all times and by engaging in industry-specific safety procedures

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B STRAND B: Technological Development, Impacts, and Careers

By the end of this course, students will:

B1. Fundamentals of Technological Development

demonstrate an understanding of how various needs and underlying social, economic, and environmental factors drive the evolution of technology

B1.1 assess interrelationships between user needs and the development of various technological solutions

B1.2 analyze how the development and application of technologies are impacted by legal, ethical, social, economic, and environmental considerations

B1.3 investigate and describe contributions to technological innovations made by Canadians, including women, and members of diverse groups and communities in Canada, including First Nations, Métis, and Inuit

B1.4 describe ways in which diverse communities, including First Nations, Métis, and Inuit, have drawn on various knowledge systems to find innovative approaches to technological problem solving

B2. Impacts of Technology

analyze impacts of various technologies on individuals, society, the economy, and the environment

B2.1 assess short-term and long-term impacts of various technological innovations on individuals and society, including the impact on their everyday life, and propose ways to mitigate negative impacts and enhance positive ones

B2.2 assess local and global impacts of various technological innovations on the environment and the economy, including the labour market

B2.3 evaluate how positive and negative impacts of various technologies can influence technological evolution, including emerging technologies

B3. Careers and Pathways in Technology and the Skilled Trades

explore and describe careers in technological fields and the skilled trades, and pathways for entering them

B3.1 explore a variety of roles, responsibilities, and opportunities related to current and emerging careers in technological fields, including a variety of broad-based technology areas, and the skilled trades

B3.2 research and identify programs, including in-school job skills programs and community-based programs, related to pathways and careers in technological fields and the skilled trades

B3.3 compare a variety of pathways leading to careers in technological fields and the skilled trades, including their structure and the educational and financial requirements for them

B3.4 evaluate the transferable skills they are developing, identifying areas of strength and growth, and analyze how these skills relate to current and emerging careers in technological fields and the skilled trades