

## Prerequisite Charts for Technological Education

These charts map out all the courses in the discipline and show the link between courses and the possible prerequisites for them. They do not attempt to depict all possible movements from course to course.

### TECHNOLOGICAL EDUCATION

Exploring Technologies  
Grade 9, Open  
TIJ 10

### COMMUNICATIONS TECHNOLOGY

Communications Technology  
Grade 9, Open  
TGJ 10

Communications Technology  
Grade 10, Open  
TGJ 20

Communications Technology  
Grade 11, University/College  
TGJ 3M

Communications Technology  
Grade 11, Open  
TGJ 30

Communications Technology  
Grade 12, University/College  
TGJ 4M

Communications Technology  
Grade 12, Open  
TGJ 40

### COMPUTER TECHNOLOGY

Computer Technology  
Grade 9, Open  
TEJ 10

Computer Technology  
Grade 10, Open  
TEJ 20

Computer Engineering Technology  
Grade 11, University/College  
TEJ 3M

Computer Technology  
Grade 11, Workplace  
TEJ 3E

Computer Engineering Technology  
Grade 12, University/College  
TEJ 4M

Computer Technology  
Grade 12, Workplace  
TEJ 4E

### CONSTRUCTION TECHNOLOGY

Construction Technology  
Grade 9, Open  
TCJ 10

Construction Technology  
Grade 10, Open  
TCJ 20

Construction Technology  
Grade 11, College  
TCJ 3C

Construction Technology  
Grade 11, Workplace  
TCJ 3E

Custom Woodworking  
Grade 11, Workplace  
TWJ 3E

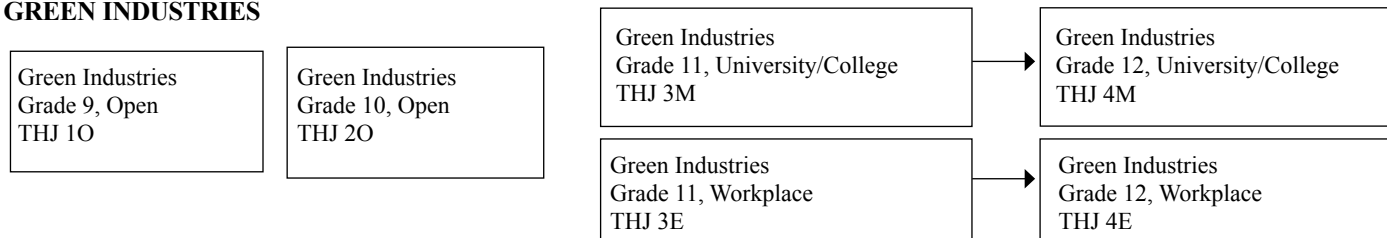
Construction Technology  
Grade 12, College  
TCJ 4C

Construction Technology  
Grade 12, Workplace  
TCJ 4E

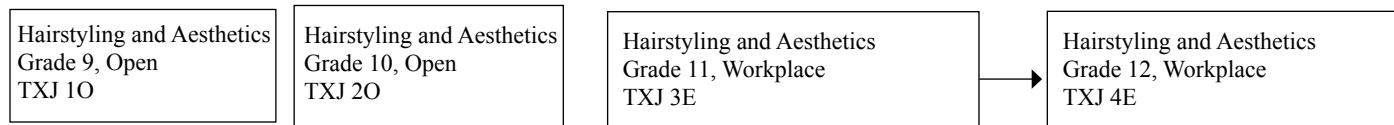
Custom Woodworking  
Grade 12, Workplace  
TWJ 4E

## Prerequisite Charts for Technological Education (cont'd)

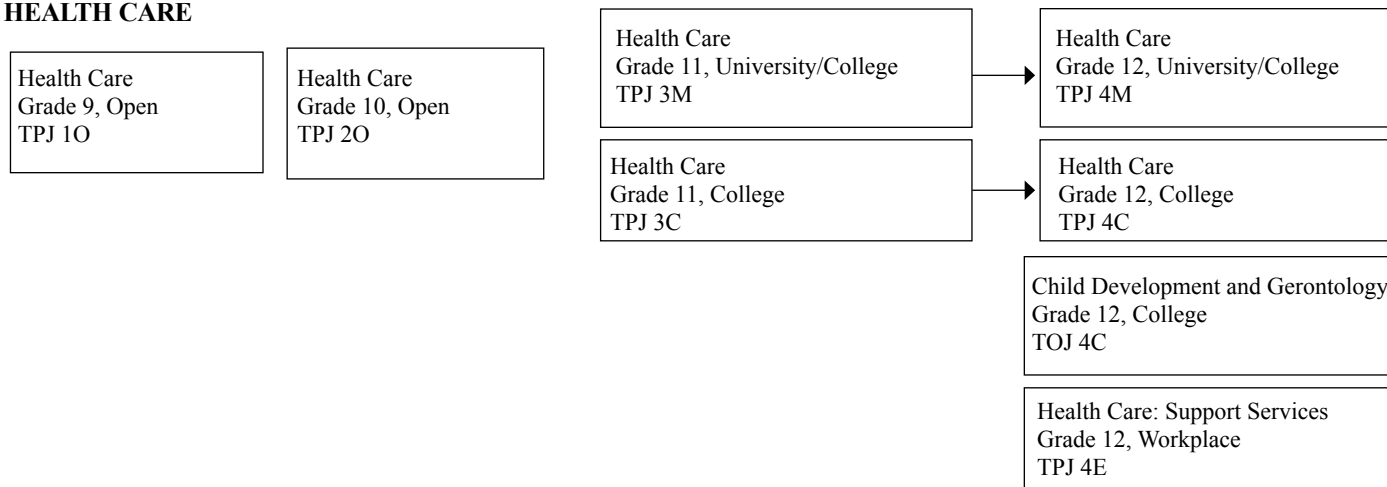
### GREEN INDUSTRIES



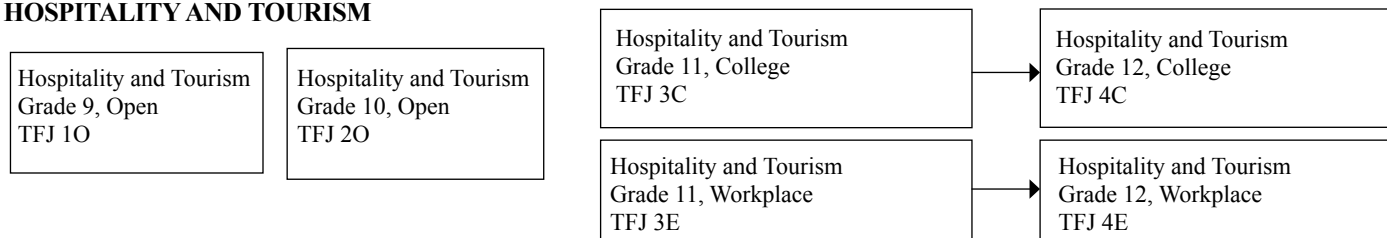
### HAIRSTYLING AND AESTHETICS



### HEALTH CARE

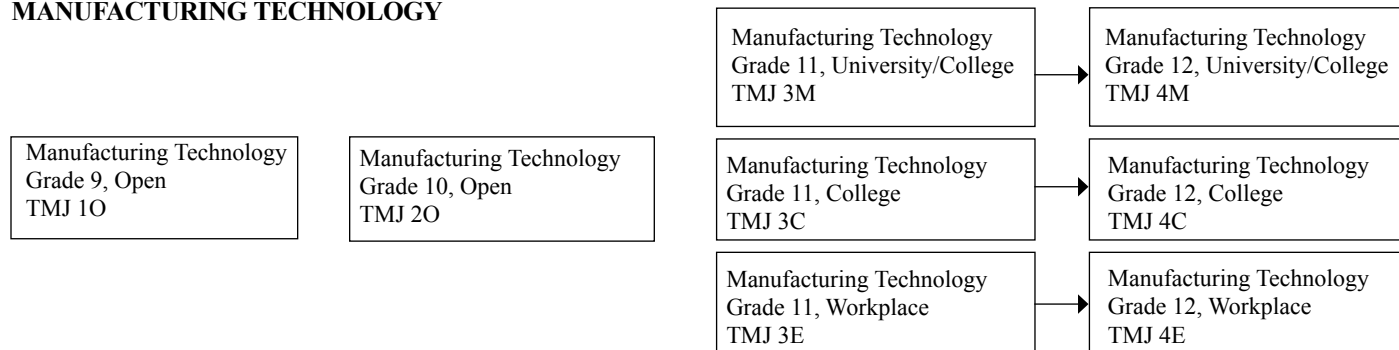


### HOSPITALITY AND TOURISM

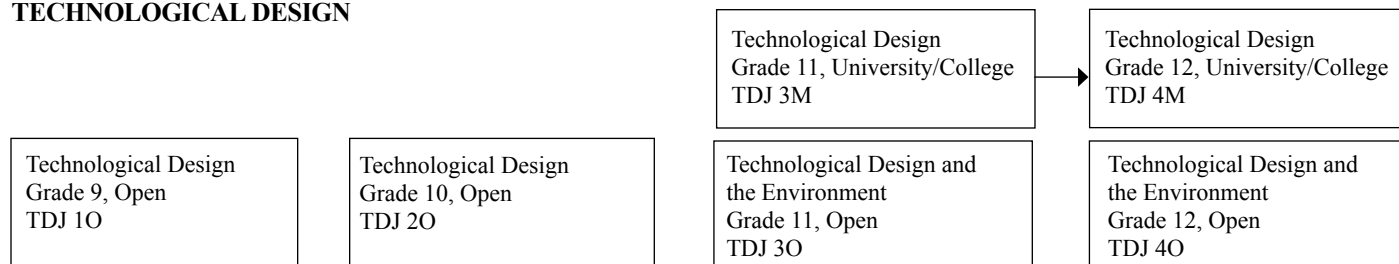


## Prerequisite Charts for Technological Education (cont'd)

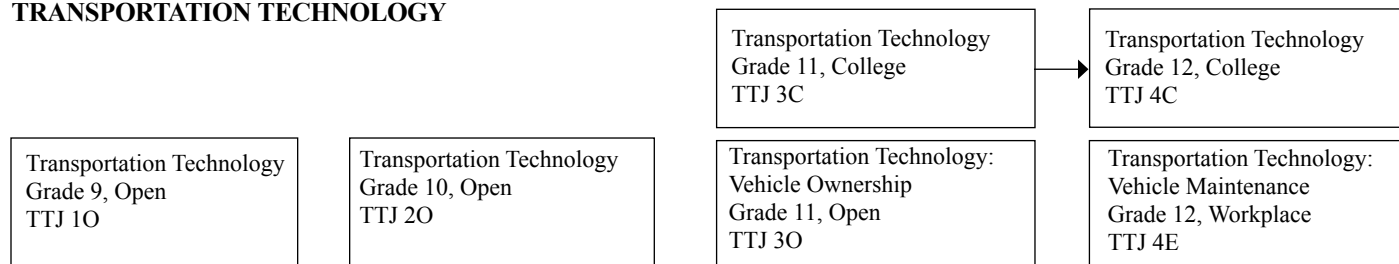
### MANUFACTURING TECHNOLOGY



### TECHNOLOGICAL DESIGN



### TRANSPORTATION TECHNOLOGY



## Technological Education

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### **Exploring Technologies, Grade 9, Open** (TIJ 10)

This course enables students to further explore and develop technological knowledge and skills introduced in the elementary science and technology program. Students will be given the opportunity to design and create products and/or provide services related to the various technological areas or industries, working with a variety of tools, equipment, and software commonly used in industry. Students will develop an awareness of environmental and societal issues, and will begin to explore secondary and postsecondary education and training pathways leading to careers in technology-related fields.

*Prerequisite: None*

## Communications Technology

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### **Exploring Communications Technology** (TGJ 10)

This exploratory course introduces students to concepts and skills in communications technology, which encompasses television/video and movie production, radio and audio production, print and graphic communications, photography, and animation. Students will develop an awareness of related environmental and societal issues and will begin to explore secondary and postsecondary pathways leading to careers in the field.

*Prerequisite: None*

### **Communications Technology, Grade 10, Open** (TGJ 20)

This course introduces students to communications technology from a media perspective. Students will work in the areas of TV/video and movie production, radio and audio production, print and graphic communications, photography, and animation. Student projects may include computer-based activities such as creating videos, editing photos, working with audio, cartooning, developing animations, and designing web pages. Students will also develop an awareness of environmental and societal issues related to communications technology and explore secondary and postsecondary education and training pathways and career opportunities in the various communications technology fields.

*Prerequisite: None*

### **Communications Technology, Grade 11, University/College Preparation** (TGJ 3M)

This course examines communications technology from a media perspective. Students will develop knowledge and skills as they design and produce media projects in the areas of live, recorded, and graphic communications. These areas may include TV, video, and movie production; radio and audio production; print and graphic communications; photography; digital imaging; broadcast journalism; and interactive new media. Students will also develop an awareness of related environmental and societal issues and explore college and university programs and career opportunities in the various communications technology fields.

*Prerequisite: None*

### **Communications Technology: Broadcast and Print Production, Grade 11, Open** (TGJ 3O)

This course enables students to develop knowledge and skills in the areas of graphic communication, printing and publishing, audio and video production, and broadcast journalism. Students will work both independently and as part of a production team to design and produce media products in a project-driven environment. Practical projects may include the making of signs, yearbooks, video and/or audio productions, newscasts, and documentaries. Students will also develop an awareness of related environmental and societal issues and explore secondary and postsecondary education and training pathways and career opportunities in the various communications technology fields.

*Prerequisite: None*

### **Communications Technology, Grade 12, University/College Preparation** (TGJ 4M)

This course enables students to further develop media knowledge and skills while designing and producing projects in the areas of live, recorded, and graphic communications. Students may work in the areas of TV, video, and movie production; radio and audio production; print and graphic communications; photography; digital imaging; broadcast journalism; and interactive new media. Students will also expand their awareness of environmental and societal issues related to communications technology and will investigate career opportunities and challenges in a rapidly changing technological environment.

*Prerequisite: Communications Technology, Grade 11, University/College Preparation*

## **Communications Technology: Digital Imagery and Web Design, Grade 12, Open (TGJ 40)**

This course enables students to develop knowledge and skills in the areas of photography, digital imaging, animation, 3D modelling, and web design. Students will work both independently and as part of a production team to design and produce media products in a project-driven environment. Practical projects may include photo galleries, digital images, animations, 3D models, and websites. Students will also expand their awareness of environmental and societal issues related to communications technology and explore postsecondary education, training, and career opportunities.

*Prerequisite: None*

## **Computer Technology**

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### **Exploring Computer Technology (TEJ 10)**

This exploratory course introduces students to concepts and skills in computer technology, which encompasses computer systems, networking, interfacing, and programming, as well as electronics and robotics. Students will develop an awareness of related environmental and societal issues and will begin to explore secondary and postsecondary pathways leading to careers in the field.

*Prerequisite: None*

### **Computer Technology, Grade 10, Open (TEJ 20)**

This course introduces students to computer systems, networking, and interfacing, as well as electronics and robotics. Students will assemble, repair, and configure computers with various types of operating systems and application software. Students will build small electronic circuits and write computer programs to control simple peripheral devices or robots. Students will also develop an awareness of environmental and societal issues related to the use of computers, and learn about secondary and postsecondary pathways to careers in computer technology.

*Prerequisite: None*

### **Computer Technology, Grade 11, Workplace Preparation (TEJ 3E)**

This course enables students to develop knowledge and skills related to computer hardware, networks, operating systems, and other software. Students will use utility and application software and learn proper procedures for installing, maintaining, and troubleshooting computer systems and networks. Students will develop an awareness of environmental and societal issues related to the use of computers, and will learn about apprenticeships and other employment opportunities in the field of computer technology that they may choose to pursue after graduation.

*Prerequisite: None*

### **Computer Engineering Technology, Grade 11, University/College Preparation (TEJ 3M)**

This course examines computer systems and control of external devices. Students will assemble computers and small networks by installing and configuring appropriate hardware and software. Students will develop knowledge and skills in electronics, robotics, programming, and networks, and will build systems that use computer programs and interfaces to control and/or respond to external devices. Students will develop an awareness of environmental and societal issues related to the use of computers, and will learn about college and university programs leading to careers in computer engineering.

*Prerequisite: None*

### **Computer Technology, Grade 12, Workplace Preparation (TEJ 4E)**

This course enables students to further develop their practical understanding of computer hardware, software, networks, and operating systems. Students will use utility and application software, and will follow proper procedures for installing, maintaining, and troubleshooting computer systems and networks. In addition to demonstrating an understanding of the ethical use and environmental effects of computers, students will develop marketable skills and assess career opportunities in the field.

*Prerequisite: Computer Technology, Grade 11, Workplace Preparation*

## **Computer Engineering Technology, Grade 12, University/College Preparation (TEJ 4M)**

This course extends students' understanding of computer systems and computer interfacing with external devices. Students will assemble computer systems by installing and configuring appropriate hardware and software, and will learn more about fundamental concepts of electronics, robotics, programming, and networks. Students will examine environmental and societal issues related to the use of computers, and explore postsecondary pathways leading to careers in computer engineering and related fields.

*Prerequisite: Computer Engineering Technology, Grade 11, University/College Preparation*

## **Construction Technology**

### **Exploring Construction Technology (TCJ 10)**

This exploratory course introduces students to concepts and skills in construction technology, which encompasses plumbing, electrical wiring, masonry, heating/cooling, carpentry, and woodworking. Students will develop an awareness of related environmental and societal issues and will begin to explore secondary and postsecondary pathways leading to careers in the field.

*Prerequisite: None*

### **Construction Technology, Grade 10, Open (TCJ 20)**

This course introduces students to building materials and processes through opportunities to design and build various construction projects. Students will learn to create and read working drawings; become familiar with common construction materials, components, and processes; and perform a variety of fabrication, assembly, and finishing operations. They will use a variety of hand and power tools and apply knowledge of imperial and metric systems of measurement, as appropriate. Students will develop an awareness of environmental and societal issues related to construction technology, and will explore secondary and postsecondary pathways leading to careers in the industry.

*Prerequisite: None*

### **Construction Engineering Technology, Grade 11, College Preparation (TCJ 3C)**

This course focuses on the development of knowledge and skills related to residential construction. Students will gain hands on experience using a variety of construction materials, processes, tools, and equipment; learn about building design and planning construction projects; create and interpret working drawings and sections; and learn how the Ontario Building Code and other regulations and standards apply to construction projects. Students will also develop an awareness of environmental and societal issues related to construction technology, and explore career opportunities in the field.

*Prerequisite: None*

### **Construction Technology, Grade 11, Workplace Preparation (TCJ 3E)**

This course enables students to develop technical knowledge and skills related to carpentry, masonry, electrical systems, heating and cooling, and plumbing for residential construction. Students will gain hands on experience using a variety of materials, processes, tools, and equipment to design, lay out, and build projects. They will create and read technical drawings, learn construction terminology, interpret building codes and regulations, and apply mathematical skills as they develop construction projects. Students will also develop an awareness of environmental and societal issues related to construction technology, and explore postsecondary and career opportunities in the field.

*Prerequisite: None*

### **Construction Engineering Technology, Grade 12, College Preparation (TCJ 4C)**

This course enables students to further develop knowledge and skills related to residential construction and to explore light commercial construction. Students will gain hands on experience using a variety of materials, processes, tools, and equipment and will learn more about building design and project planning. They will continue to create and interpret construction drawings and will extend their knowledge of construction terminology and of relevant building codes and regulations, as well as health and safety standards and practices. Students will also focus on environmental and societal issues related to construction engineering technology, and explore career opportunities in the field.

*Prerequisite: Construction Engineering Technology, Grade 11, College Preparation*

## **Construction Technology, Grade 12, Workplace Preparation (TCJ 4E)**

This course enables students to further develop technical knowledge and skills related to residential construction and to explore light commercial construction. Students will continue to gain hands on experience using a variety of materials, processes, tools, and equipment; create and interpret construction drawings; and learn more about building design and project planning. They will expand their knowledge of terminology, codes and regulations, and health and safety standards related to residential and light commercial construction. Students will also expand their awareness of environmental and societal issues related to construction technology and explore entrepreneurship and career opportunities in the industry that may be pursued directly after graduation.

*Prerequisite: Construction Technology, Grade 11, Workplace Preparation*

## **Custom Woodworking, Grade 11, Workplace Preparation (TWJ 3E)**

This course enables students to develop knowledge and skills related to cabinet making and furniture making. Students will gain practical experience using a variety of the materials, tools, equipment, and joinery techniques associated with custom woodworking. Students will learn to create and interpret technical drawings and will plan, design, and fabricate projects. They will also develop an awareness of environmental and societal issues related to the woodworking industry, and explore apprenticeships, postsecondary training, and career opportunities in the field that may be pursued directly after graduation.

*Prerequisite: None*

## **Custom Woodworking, Grade 12, Workplace Preparation (TWJ 4E)**

This course enables students to further develop knowledge and skills related to the planning, design, and construction of cabinets and furniture for residential and/or commercial projects. Students will gain further experience in the safe use of common woodworking materials, tools, equipment, finishes, and hardware, and will learn about the entrepreneurial skills needed to establish and operate a custom woodworking business. Students will also expand their awareness of health and safety issues and environmental and societal issues related to woodworking, and will explore career opportunities that may be pursued directly after graduation.

*Prerequisite: Custom Woodworking, Grade 11, Workplace Preparation*

# Green Industries

## **Exploring Green Industries (THJ 10)**

This exploratory course introduces students to concepts and skills related to the green industries – agriculture, forestry, horticulture, and landscaping. Students will develop an awareness of related environmental and societal issues and will begin to explore secondary and postsecondary pathways leading to careers in the field.

*Prerequisite: None*

## **Green Industries, Grade 10, Open (THJ 20)**

This course introduces students to the various sectors of the green industries – agriculture, forestry, horticulture, floristry, and landscaping. Using materials, processes, and techniques commonly employed in these industries, students will participate in a number of hands-on projects that may include plant or animal propagation; production, maintenance, and harvesting activities; the development of floral or landscaping designs; and/or related construction activities. Students will also develop an awareness of environmental and societal issues related to green industry activities, learn about safe and healthy working practices, and explore secondary and postsecondary education and training pathways and career opportunities in the various industry sectors.

*Prerequisite: None*

## **Green Industries, Grade 11, Workplace Preparation (THJ 3E)**

This course enables students to develop knowledge and skills related to agriculture, floristry, forestry, horticulture, and landscaping. Students will learn to identify a broad range of plant and animal species; examine factors that affect the growth of plants and animals and the quality of products derived from them; and develop process, design, and maintenance skills required in the green industries. Students will also learn about safe and healthy working practices, develop an awareness of environmental and societal issues related to green industry activities, and learn about apprenticeships and other postsecondary education and training opportunities, as well as employment opportunities that may be pursued directly after graduation.

*Prerequisite: None*

**Green Industries,  
Grade 11, University/College Preparation (THJ 3M)**

This course enables students to develop knowledge and skills related to agriculture, forestry, horticulture, and landscaping. Students will study the identification, growth, and management of plants and animals and develop process, design, and management skills required in the green industries. Students will also examine social and economic issues related to the green industries, learn about safe and healthy working practices, study industry standards and codes, and explore postsecondary education programs and career opportunities.

*Prerequisite: None*

**Green Industries,  
Grade 12, Workplace Preparation (THJ 4E)**

This course enables students to gain further experience with a variety of industry procedures and operations and to acquire additional industry-specific skills. Students will study more complex processes, develop more advanced design and maintenance skills, and explore ways of enhancing environmental sustainability. They will also examine social and economic issues related to the green industries, learn about safe and healthy working practices, study industry standards and codes, and explore career opportunities in the various industries. The knowledge and skills acquired in this course will prepare students for the workplace and apprenticeship training.

*Prerequisite: Green Industries, Grade 11, Workplace Preparation*

**Green Industries,  
Grade 12, University/College Preparation (THJ 4M)**

This course focuses on more complex concepts and skills related to the green industries. Students will focus on developing process skills, design and management techniques, and ways of enhancing environmental sustainability. They will also examine social and economic issues related to the green industries, learn about safe and healthy working practices, study industry standards and codes, and explore career opportunities. The knowledge and skills acquired in this course will prepare students for more specialized studies at the college and university level.

*Prerequisite: Green Industries, Grade 11, University/College Preparation*

## Hairstyling and Aesthetics

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**Exploring Hairstyling and Aesthetics (TXJ 10)**

This exploratory course introduces students to concepts and skills related to hairstyling and aesthetics, including hair, nail, and skin care applications. Students will develop an awareness of related environmental and societal issues and will begin to explore secondary and postsecondary pathways leading to careers in the field.

*Prerequisite: None*

**Hairstyling and Aesthetics,  
Grade 10, Open (TXJ 20)**

This course presents hairstyling, make-up, and nail care techniques from a salon/spa perspective. Through a variety of school and community-based activities, students learn fundamental skills in hairstyling, giving manicures and facials and providing hair/scalp analyses, and treatments. Students also consider related environmental and societal issues and explore secondary and postsecondary pathways leading to careers in the field of hairstyling and aesthetics.

*Prerequisite: None*

**Hairstyling and Aesthetics,  
Grade 11, Workplace Preparation (TXJ 3E)**

This course enables students to develop knowledge and skills in cosmetology and offers a variety of applications that will equip students to provide services for a diverse clientele. Students identify trends in the hairstyling and aesthetics industry, learn about related health and safety laws, and expand their communication and interpersonal skills through interactions with peers and clients. Students consider environmental and societal issues related to the industry and acquire a more detailed knowledge of apprenticeships and direct entry work positions.

*Prerequisite: None*

# Technological Education

## **Hairstyling and Aesthetics, Grade 12, Workplace Preparation (TXJ 4E)**

This course enables students to develop increased proficiency in a wide range of hairstyling and aesthetics services. Working in a salon/spa team environment, students strengthen their fundamental cosmetology skills and develop an understanding of common business practices and strategies in the salon/spa industry. Students expand their understanding of environmental and societal issues and their knowledge of postsecondary destinations in the hairstyling and aesthetics industry.

*Prerequisite: Hairstyling and Aesthetics, Grade 11, Workplace Preparation*

## **Health Care**

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### **Exploring Health Care (TPJ 10)**

This exploratory course introduces students to concepts and skills related to health care, which encompasses personal health promotion, child and adolescent health concerns, and various medical services, treatments, instruments, and technologies. Students will develop an awareness of related environmental and societal issues and will begin to explore secondary and postsecondary pathways leading to careers in the field.

*Prerequisite: None*

### **Health Care, Grade 10, Open (TPJ 20)**

This course introduces students to personal health promotion, child and adolescent health concerns, and a variety of medical services, treatments, and technologies. Students will become familiar with various instruments and equipment and will learn about human anatomy, organs, and body chemistry, as well as the effects that lifestyle choices can have on personal well-being. They will plan recreational activities for youth, perform a dietary analysis, and evaluate health care practices. Students will develop an awareness of environmental and societal issues related to health care and will explore secondary and postsecondary pathways leading to careers in the field.

*Prerequisite: None*

### **Health Care, Grade 11, College Preparation (TPJ 3C)**

This course focuses on the development of knowledge and skills that will benefit students planning a career in the health care field. Students will learn about human anatomy and physiology, homeostasis, vital signs, disease prevention and treatment, how lifestyle choices affect health and well-being, and conventional and complementary methods of disease prevention and treatment. Students will develop an awareness of health and safety issues, environmental and societal issues related to health care, and career opportunities in the field.

*Prerequisite: None*

### **Health Care, Grade 11, University/College Preparation (TPJ 3M)**

This course focuses on the development of knowledge and skills that will benefit students planning a career in the health care field. Students will learn about human anatomy and physiology, homeostasis, vital signs, disease prevention and treatment, how lifestyle choices affect health and well-being, and conventional and complementary methods of disease prevention and treatment. Students will develop an awareness of workers' health and safety issues, environmental and societal issues related to health care, and career opportunities in the field.

*Prerequisite: None*

### **Health Care, Grade 12, College Preparation (TPJ 4C)**

This course focuses on the development of clinical skills needed to assess general health status. Students will learn about accepted health care practices and about how to perform various basic procedures, using appropriate instruments and equipment. They will learn about the human immune system, pathology, and disease prevention and treatment. Students will also expand their awareness of workers' health and safety issues, environmental and societal issues related to health care, and postsecondary destinations in the field.

*Prerequisite: Health Care, Grade 11, College Preparation*

## **Health Care, Grade 12, University/College Preparation (TPJ 4M)**

This course focuses on the development of clinical skills needed to assess general health status. Students will learn about accepted health care practices and about how to perform various procedures, using appropriate instruments and equipment. They will learn about the human immune system, pathology, and disease prevention and treatment. Students will also expand their awareness of workers' health and safety issues, environmental and societal issues related to health care, and postsecondary destinations in the field.

*Prerequisite: Health Care, Grade 11, University/College Preparation*

## **Child Development and Gerontology, Grade 12, College Preparation (TOJ 4C)**

This course enables students to examine the stages of child development and the aging process. Students will study the processes of disease and factors contributing to health and well-being in early and later life, and will develop skills required to meet the needs of children and older adults (care skills). Students will also learn about legislation governing the care of children and older adults; evaluate social and recreational activities, programs, and services for improving quality of life; and develop an awareness of health and safety issues, environmental and social issues, and career opportunities related to child care and gerontology.

*Prerequisite: None*

## **Health Care: Support Services, Grade 12, Workplace Preparation (TPJ 4E)**

This course enables students to develop the basic skills needed for careers in a range of health care support services. Students will practise and apply a variety of clinical procedures and infection control skills as they learn about principles of infection control, service excellence, and the nature of the health care industry. Students will also investigate workers' health and safety issues, environmental and societal issues related to health care, and career opportunities in the field.

*Prerequisite: None*

# Hospitality and Tourism

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## **Exploring Hospitality and Tourism (TFJ 1O)**

This exploratory course introduces students to concepts and skills related to hospitality and tourism, focusing on the areas of food handling, food preparation, the origins of foods, event planning, and local tourism. Students will develop an awareness of related environmental and societal issues and will begin to explore secondary and postsecondary pathways leading to careers in the field.

*Prerequisite: None*

## **Hospitality and Tourism, Grade 10, Open (TFJ 2O)**

This course provides students with opportunities to explore different areas of hospitality and tourism, as reflected in the various sectors of the tourism industry, with an emphasis on food service. Students will study culinary techniques of food handling and preparation, health and safety standards, the use of tools and equipment, the origins of foods, and event planning, and will learn about tourism attractions across Ontario. Students will develop an awareness of related environmental and societal issues and will explore secondary and postsecondary pathways leading to careers in the tourism industry.

*Prerequisite: None*

## **Hospitality and Tourism, Grade 11, Workplace Preparation (TFJ 3E)**

This course enables students to acquire knowledge and skills related to the food and beverage services sector of the tourism industry. Students will learn how to prepare, present, and serve food using a variety of tools and equipment and will develop an understanding of the fundamentals of providing high quality service to ensure customer satisfaction and the components of running a successful event or activity. Students will develop an awareness of health and safety practices, environmental and societal issues, and career opportunities in the food and beverage services sector.

*Prerequisite: None*

## **Hospitality and Tourism, Grade 11, College Preparation (TFJ 3C)**

This course enables students to develop or expand knowledge and skills related to hospitality and tourism, as reflected in the various sectors of the tourism industry. Students will learn about preparing and presenting food, evaluating facilities, controlling inventory, and marketing and managing events and activities, and will investigate customer service principles and the cultural and economic forces that drive tourism trends. Students will develop an awareness of health and safety standards, environmental and societal issues, and career opportunities in the tourism industry.

*Prerequisite: None*

## **Hospitality and Tourism, Grade 12, Workplace Preparation (TFJ 4E)**

This course enables students to further develop knowledge and skills related to the food and beverage services sector of the tourism industry. Students will demonstrate proficiency in using food preparation and presentation tools and equipment; plan nutritious menus, create recipes, and prepare and present finished food products; develop customer service skills; and explore event and activity planning. Students will expand their awareness of health and safety practices, environmental and societal issues, and career opportunities in the food and beverage services sector.

*Prerequisite: Hospitality and Tourism, Grade 11, Workplace Preparation*

## **Hospitality and Tourism, Grade 12, College Preparation (TFJ 4C)**

This course enables students to further develop knowledge and skills related to the various sectors of the tourism industry. Students will demonstrate advanced food preparation and presentation skills; increase health and wellness knowledge; develop tourism administration and management skills; design and implement a variety of events or activities; and investigate principles and procedures that contribute to high-quality customer service. Students will expand their awareness of health and safety issues, environmental and societal issues, and career opportunities in the tourism industry.

*Prerequisite: Hospitality and Tourism, Grade 11, College Preparation*

# Manufacturing Technology

## **Exploring Manufacturing Technology (TMJ 10)**

This exploratory course introduces students to concepts and skills related to manufacturing technology, which encompasses technical drawing, properties and preparation of materials, manufacturing techniques, and control systems. Students will develop an awareness of related environmental and societal issues and will begin to explore secondary and postsecondary pathways leading to careers in the field.

*Prerequisite: None*

## **Manufacturing Technology, Grade 10, Open (TMJ 2O)**

This course introduces students to the manufacturing industry by giving them an opportunity to design and fabricate products using a variety of processes, tools, and equipment. Students will learn about technical drawing, properties and preparation of materials, and manufacturing techniques. Student projects may include a robotic challenge, a design challenge, or a fabrication project involving processes such as machining, welding, vacuum forming, or injection moulding. Students will develop an awareness of environmental and societal issues related to manufacturing and will learn about secondary and postsecondary pathways leading to careers in the industry.

*Prerequisite: None*

## **Manufacturing Technology, Grade 11, Workplace Preparation (TMJ 3E)**

This hands-on, project-based course is designed for students planning to enter an occupation or apprenticeship in manufacturing directly after graduation. Students will work on a variety of manufacturing projects, developing knowledge and skills in design, fabrication, and problem solving and using tools and equipment such as engine lathes, milling machines, and welding machines. In addition, students may have the opportunity to acquire industrystandard certification and training. Students will develop an awareness of environmental and societal issues related to manufacturing and will learn about secondary school pathways that lead to careers in the industry.

*Prerequisite: None*

# Technological Education

## **Manufacturing Technology, Grade 11, College Preparation (TMJ 3C)**

This course enables students to develop knowledge and skills through hands-on, project-based learning. Students will acquire design, fabrication, and problem-solving skills while using tools and equipment such as lathes, mills, welders, computer-aided machines, robots, and control systems. Students may have opportunities to obtain industry-standard certification and training. Students will develop an awareness of environmental and societal issues related to manufacturing and will learn about pathways leading to careers in the industry.

*Prerequisite: None*

## **Manufacturing Engineering Technology, Grade 11, University/College Preparation (TMJ 3M)**

This course enables students to develop knowledge and skills related to design, process planning, control systems, and quality assurance. Students will use a broad range of tools and equipment and will combine modern manufacturing techniques and processes with computer-aided manufacturing as they develop critical decision-making, problem-solving, and project-management skills. Students will develop an awareness of environmental and societal issues related to manufacturing and will learn about pathways leading to careers in the industry.

*Prerequisite: None*

## **Manufacturing Technology, Grade 12, Workplace Preparation (TMJ 4E)**

This project-driven, hands-on course builds on students' experiences in manufacturing technology. Students will further develop knowledge and skills related to the use of engine lathes, milling machines, welding machines, and other related tools and equipment as they design and fabricate solutions to a variety of technological challenges in manufacturing. Students may have opportunities to acquire industry-standard training and certification. Students will expand their awareness of environmental and societal issues and of career opportunities in the manufacturing industry.

*Prerequisite: Manufacturing Technology, Grade 11, Workplace Preparation*

## **Manufacturing Technology, Grade 12, College Preparation (TMJ 4C)**

This course enables students to further develop knowledge and skills related to machining, welding, print reading, computer numerical control (CNC), robotics, and design. Students will develop proficiency in using mechanical, pneumatic, electronic, and computer control systems in a project-based learning environment and may have opportunities to obtain industry-standard training and certification. Students will expand their awareness of environmental and societal issues and career opportunities in the manufacturing industry.

*Prerequisite: Manufacturing Technology, Grade 11, College Preparation*

## **Manufacturing Engineering Technology, Grade 12, University/College Preparation (TMJ 4M)**

This course enables students to further develop knowledge and skills related to design, process planning, control systems, project management, quality assurance, and business operations. Students will use a broad range of tools and equipment, enhance their skills in computer-aided design, and collaborate in managing a project. Students will critically analyse and solve complex problems involved in manufacturing products. Students will expand their awareness of environmental and societal issues and of career opportunities in the manufacturing industry.

*Prerequisite: Manufacturing Engineering Technology, Grade 11, University/College Preparation*

# Technological Design

## **Exploring Technological Design (TDJ 10)**

This exploratory course introduces students to concepts and skills related to technological design, which involves the development of solutions to various design challenges and the fabrication of models or prototypes of those solutions. Students will develop an awareness of related environmental and societal issues and will begin to explore secondary and postsecondary pathways leading to careers in the field.

*Prerequisite: None*

# Technological Education

## **Technological Design, Grade 10, Open (TDJ 20)**

This course provides students with opportunities to apply a design process to meet a variety of technological challenges. Students will research projects, create designs, build models and/or prototypes, and assess products and/or processes using appropriate tools, techniques, and strategies. Student projects may include designs for homes, vehicles, bridges, robotic arms, clothing, or other products. Students will develop an awareness of environmental and societal issues related to technological design, and learn about secondary and postsecondary education and training leading to careers in the field.

*Prerequisite: None*

## **Technological Design and the Environment, Grade 11, Open (TDJ 30)**

This course enables students to apply a systematic process for researching, designing, building, and assessing solutions to address specific human and environmental challenges. Through their work on various projects, students will explore broad themes that may include aspects of industrial design, mechanical design, architectural design, control system design, and/or apparel design. Students will develop an awareness of environmental and societal issues related to technological design, and will learn about secondary and postsecondary pathways leading to careers in the field.

*Prerequisite: None*

## **Technological Design, Grade 11, University/College (TDJ 3M)**

This course examines how technological design is influenced by human, environmental, financial, and material requirements and resources. Students will research, design, build, and assess solutions that meet specific human needs, using working drawings and other communication methods to present their design ideas. They will develop an awareness of environmental, societal, and cultural issues related to technological design, and will explore career opportunities in the field, as well as the college and/or university program requirements for them.

*Prerequisite: None*

## **Technological Design in the Twenty-first Century, Grade 12, Open (TDJ 40)**

This course focuses on the relationship between society and technological development. Students will use appropriate tools, techniques, and strategies to research, design, build, and assess prototypes for products and/or processes that respond to society's changing needs. Students will describe how social factors, including culture, media, politics, religion, and environmental concerns, influence technological design. Students will also learn about professional practices in the field, and will research postsecondary pathways leading to careers related to technological design.

*Prerequisite: None*

## **Technological Design, Grade 12, University/College (TDJ 4M)**

This course introduces students to the fundamentals of design advocacy and marketing, while building on their design skills and their knowledge of professional design practices. Students will apply a systematic design process to research, design, build, and assess solutions that meet specific human needs, using illustrations, presentation drawings, and other communication methods to present their designs. Students will enhance their problemsolving and communication skills, and explore career opportunities and the postsecondary education and training requirements for them.

*Prerequisite: Technological Design, Grade 11, University/College Preparation*

# Transportation Technology

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## **Exploring Transportation Technology (TTJ 10)**

This exploratory course introduces students to concepts and skills related to transportation technology, which encompasses the maintenance, servicing, and repair of various types of vehicles, aircraft, and/or watercraft. Students will develop an awareness of related environmental and societal issues and will begin to explore secondary and postsecondary pathways leading to careers in the field.

*Prerequisite: None*

# Technological Education

## **Transportation Technology, Grade 10, Open (TTJ 2O)**

This course introduces students to the service and maintenance of vehicles, aircraft, and/or watercraft. Students will develop knowledge and skills related to the construction and operation of vehicle/craft systems and learn maintenance and repair techniques. Student projects may include the construction of a self-propelled vehicle or craft, engine service, tire/wheel service, electrical/battery service, and proper body care. Students will develop an awareness of related environmental and societal issues and will explore secondary and postsecondary pathways leading to careers in the transportation industry.

*Prerequisite: None*

## **Transportation Technology: Vehicle Ownership, Grade 11, Open (TTJ 3O)**

This general interest course enables students to become familiar with the options and features of various vehicles, issues of registration, and the legal requirements affecting vehicle owners. Students will also learn about vehicle financing and insurance, vehicle maintenance, emergency procedures, and the responsibilities of being a vehicle owner. Students will develop an awareness of environmental and societal issues related to vehicle ownership and use, and will explore career opportunities in the transportation industry.

*Prerequisite: None*

## **Transportation Technology, Grade 11, College Preparation (TTJ 3C)**

This course enables students to develop technical knowledge and skills as they study, test, service, and repair engine, electrical, suspension, brake, and steering systems on vehicles, aircraft, and/or watercraft. Students will develop communication and teamwork skills through practical tasks, using a variety of tools and equipment. Students will develop an awareness of environmental and societal issues related to transportation and will learn about apprenticeship and college programs leading to careers in the transportation industry.

*Prerequisite: None*

## **Transportation Technology: Vehicle Maintenance, Grade 12, Workplace Preparation (TTJ 4E)**

This course introduces students to the servicing, repair, and maintenance of vehicles through practical applications. The course is appropriate for all students as a general interest course to prepare them for future vehicle operation, care, and maintenance or for entry into an apprenticeship in the motive power trades. Students will develop an awareness of environmental and societal issues related to transportation and will learn about careers in the transportation industry and the skills and training required for them.

*Prerequisite: None*

## **Transportation Technology, Grade 12, College Preparation (TTJ 4C)**

This course enables students to further develop technical knowledge and skills as they study, test, service, and repair engine management systems; power trains; steering/control, suspension, brake, and body systems on vehicles, aircraft, and/or watercraft; and/or small engine products. Students will refine communication and teamwork skills through practical tasks, using a variety of tools and equipment. Students will expand their awareness of environmental and societal issues related to transportation and their knowledge of apprenticeship and college programs leading to careers in the transportation industry.

*Prerequisite: Transportation Technology, College Preparation, Grade 11*