

# TECHNOLOGICAL EDUCATION

## **Integrated Technologies, Grade 9**

**(Open)**

**TT110**

This course enables students to understand the technological and computer concepts they need in order to design, develop, and build usable products and/or deliver services, and to pursue further technological studies. Students will use a high level language to develop software programs, the technological design process, and a variety of tools and software to solve problems, compute projects, and strengthen their communication skills.

## **Communications Technology**

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

**TGJ20**

This course requires students to complete a range of communications technology projects. These may include creating printed stationary, short videos, computer-generated animations, and graphical information displays. Students will learn to transfer information using electronic, live, and graphic communications methods. The knowledge and skills they will develop will provide a basis for careers in areas such as publishing, advertising, print production, animation, photography, and journalism.

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

**TGJ3M**

This course examines communications systems and design and production processes in one or more of the areas of electronic, live, and graphic communications. Students will develop knowledge and skills relating to the assembly, maintenance, and repair of the basic and more complex components of a range of communications systems. Students will also study industry standards and regulations and health and safety issues, and will explore careers, the importance of lifelong learning, and the impact of communications technology on society and the environment.

**Suggested Prerequisite: TGJ20**

### **Communications Technology, Grade 11 (Workplace Preparation)**

**TGJ3E**

This course examines communications systems and design and production processes in one or more of the areas of electronic, live, and graphic communications. Students will learn how basic communication systems function and will develop the knowledge and skills needed to assemble, repair, maintain, and test various systems. Students will also study industry standards and regulations and health and safety issues, and will explore careers, the importance of lifelong learning, and the impact of communications technology on society and the environment.

**Suggested Prerequisite: TGJ20**

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

**TGJ4M**

This course examines communications systems and design and production processes in one or more of the areas of electronic, live, and graphic communications. Students will independently create, manage, and distribute complex graphic, electronic, or audiovisual projects. Students will also study industry standards and regulations and health and safety issues, and will explore careers, the importance of lifelong learning, and the impact of communications technology on society and the environment.

**Prerequisite: TGJ3M**

# TECHNOLOGICAL EDUCATION

## Construction Technology

### **Construction Technology, Grade 10**

(Open)

**TCJ20**

This course requires students to design, build, and evaluate projects using design instruments and machine and hand tools. Students will solve technological problems through a variety of media; identify and describe building materials and other resources needed to construct, maintain, and service buildings; identify support systems and components; apply safety rules related to materials, processes, and equipment; identify common architectural styles; and identify careers related to construction technology.

### **Construction Technology, Grade 11**

(College Preparation)

**TCJ3C**

This course focuses on residential, commercial, industrial, and/or recreational construction. Students will learn about the tools, materials, equipment, and methods used in the light construction industry; structural analysis and design; presentation and working drawings; and mechanical systems. They will also estimate materials and labour costs, and study industry standards and building codes, health and safety issues, energy conservation, careers, and the impact of construction technology on society and the environment.

**Suggested Prerequisite: TCJ20**

### **Construction Technology, Grade 11**

(Workplace Preparation)

**TCJ3E**

This course focuses on residential, commercial, industrial, and/or recreational construction, emphasizing practical workplace applications, the development of generic employment skills, and preparation for apprenticeship and training programs. Students will learn about and gain practical experience with various types of materials, processes, labour, tools, and equipment used in the construction industry; technical drawings; and mechanical systems. They will also study industry standards and building codes, consider health and safety issues, and explore careers, the importance of lifelong learning, and the impact of construction technology on society and the environment.

**Suggested Prerequisite: TCJ20**

### **Construction Technology, Grade 12**

(College Preparation)

**TCJ4C**

This course focuses on residential, commercial, industrial, and/or recreational construction. Students will learn about the tools, materials, equipment, and methods used in the light and heavy construction industries; structural analysis and design; presentation and working drawings; and mechanical systems. They will also estimate materials and labour costs, study industry standards and building codes, consider health and safety issues, and explore energy conservation, careers, and the impact of construction technology on society and the environment.

**Prerequisite: TCJ3C**

### **Construction Technology, Grade 12**

(Workplace Preparation)

**TCJ4E**

This course focuses on residential and heavy construction, emphasizing advanced practical workplace applications and the development of generic employment skills and independent learning skills. Students will examine the materials, processes, labour, tools, and equipment used in the construction industry; technical drawings; mechanical systems; and landscaping. They will also study industry standards and building codes, consider health and safety issues, and explore careers, lifelong learning opportunities, and the impact of construction technology on society and the environment.

**Prerequisite: TCJ3E**

# TECHNOLOGICAL EDUCATION

## Transportation Technology

**PLEASE NOTE:** *The Transportation Technology classes are offered at St. Joseph's Secondary School and are available to Senior Holy Trinity Students (grade 11 and 12 students) provided certain conditions exist. Contact the guidance office for more information.*

### **Transportation Technology, Grade 10**

**(Open)**

**TTJ2O**

This course requires students to build projects and to learn service procedures related to different modes of transportation. Students will learn about support systems for transporting people and products; measurement systems and methods; the analysis, design and construction of a system to convert and make practical use of energy; the function of major vehicle system components; the impact of transportation systems on the environment; communication skills; and transportation-related careers.

### **Transportation Technology, Grade 11**

**(College Preparation)**

**TTJ3C**

This course examines the infrastructure required for the operation of land, air, and/or marine vehicles. Students will design, construct, and modify vehicles, and apply safe work practices and procedures using current technology. They will also develop effective communication and teamwork skills when developing solutions to managing vehicle support systems; investigate the educational requirements for career opportunities in the transportation sector; and analyze the impact of transportation technology on society and the environment.

**Suggested Prerequisite: TTJ2O**

### **Transportation Technology, Grade 11**

**(Workplace Preparation)**

**TTJ3E**

This course examines the various types of land, air, and/or marine vehicles and vehicle systems found within the transportation sector. Students will acquire identification, troubleshooting, repairing, and testing skills that meet industry standards and government regulations. In addition to developing employability and technical skills, they will explore the broad range of career opportunities within this sector, and will examine the impact of the transportation sector on people, society, and the environment.

**Suggested Prerequisite: TTJ2O**

### **Transportation Technology, Grade 12**

**(College Preparation)**

**TTJ4C**

This course examines the alternative modes of mass transit to enable students to develop the specialized knowledge and skills required to work with sophisticated land, air, and/or marine vehicles and transportation systems. Students will solve problems related to vehicles and transportation systems; examine transportation-related issues such as energy conversion, power transfer, control systems, and environmental and societal impact; and investigate the educational requirements of career opportunities in the transportation sector.

**Prerequisite: TTJ3C**

# TECHNOLOGICAL EDUCATION

## **Transportation Technology, Grade 12 (Workplace Preparation) TTJ4E**

This course examines the commonalities of land, air, and/or marine vehicles and transportation systems. Students will develop safe workplace habits and business management skills and will use diagnostic, hand, and power tools effectively to service and repair vehicles to meet industry standards and safety inspections. They will also research the entry requirements for apprenticeship training programs and develop the employability and technical skills required for entry into the workplace.

**Prerequisite: TTJ3E**

## **Computer and Information Science**

### **Computer and Information Science, Grade 10 (Open) TIK2O**

This course introduces students to computer science concepts. Students will learn about the stages in software design; the fundamental programming constructs of sequence, selection, and repetition; the functions of internal and external computer components; the relationship among networks, operating systems, and application software and their uses; and how programming languages evolve. Students will also develop an awareness of computer-related careers.

### **Computer and Information Science, Grade 11 (University/College Preparation) ICS3M**

This course helps students examine computer science concepts. Students will outline stages in software development, define standard control and data structures, identify on- and off-line resources, explain the functions of basic computer components, and develop programming and problem-solving skills by using operating systems and implementing defined practices. As well as identifying careers in computer science, students will develop an understanding of the ethical use of computers and the impact of emergent technologies on society.

**Suggested Prerequisite: TIK2O**

### **Computer and Information Science, Grade 12 (University/College Preparation) ICS4M**

This course helps students use programming and software engineering principles to design and develop algorithms and programs. Students will use software development and diagnostic tools, implement data structures and algorithms, and use file management techniques in project settings. They will also develop an understanding of the ethics of computer use and the impact of information technology on the community, and will explore postsecondary education and career paths in computer science.

**Prerequisite: ICS3M**

# TECHNOLOGICAL EDUCATION

## Hospitality and Tourism

### **Hospitality, Grade 11**

**(College Preparation)**

**TFT3C**

This course helps students understand the features, trends, and guidelines of the hospitality industry, as well as learn the basic requirements of serving customers. Students will acquire skills related to advanced methods of preparing and presenting food, evaluating facilities, controlling inventory, and marketing special events. They will also learn about economic and environmental impacts, health and safety standards, and career opportunities related to the hospitality industry

## Computer Engineering

### **Computer Engineering, Grade 11**

**(University/College Preparation)**

**ICE3M**

This course helps students understand how computer hardware and software are used to solve computer-related problems from an engineering perspective. Students will explore ways of connecting computers, interfaces, and peripherals using their knowledge of logic gates, computer components, peripherals, programming, networks, and operating systems. Students will also construct systems that use computer programs to interact with hardware, install and configure key computer hardware and software components, develop an understanding of the ethical use of computers, and explore careers in computer engineering.

**Suggested Prerequisite: TTI10**

### **Computer Engineering, Grade 12**

**(University/College Preparation)**

**ICE4M**

This course helps students understand and apply computer engineering concepts. Students will analyze and design computer components such as logic circuits and interfaces; develop and construct systems and write the associated computer programs to drive real-world devices such as traffic lights, models, and robots; and explore networking hardware, protocols, and configurations. As well as developing project management skills, students will examine the ethics of computer use and explore related educational requirements and careers.

**Prerequisite: ICE3M**