

TECHNOLOGICAL EDUCATION

Computer and Information Science – Programming

ICS2OR
Grade 10, (Open)

This course introduces students to computer programming. Students will plan and write simple computer programs by applying fundamental programming concepts, and learn to create clear and maintainable internal documentation. They will also learn to manage a computer by studying hardware configurations, software selection, operating system functions, networking, and safe computing practices. Students will also investigate the social impact of computer technologies, and develop an understanding of environmental and ethical issues related to the use of computers. Students may program in VB6 or C++ Console or C++ Windows.

Prerequisite: None

Introduction to Computer Science – Programming ICS3UR

Grade 11, (University Preparation)

This course introduces students to computer science. Students will design software independently and as part of a team, using industry-standard programming tools and applying the software development life-cycle model. They will also write and use subprograms within computer programs. Students will develop creative solutions for various types of problems as their understanding of the computing environment grows. They will also explore environmental and ergonomic issues, emerging research in computer science, and global career trends in computer-related fields. Students may program in VB6 or C++ Console or C++ Windows.

Prerequisite: None

Recommended: Grade 10 Computer and Information Science (ICS2OR) or Communications Technology (TGJ2OR)

Introduction to Computer Programming ICS3CR

Grade 11, (College Preparation)

This course introduces students to computer programming concepts and practices. Students will write and test computer programs, using various problem-solving strategies. They will learn the fundamentals of program design and apply a software development life-cycle model to a software development project. Students will also learn about computer environments and systems, and explore environmental issues related to computers, safe computing practices, emerging technologies, and postsecondary opportunities in computer-related fields. Students may program in VB6 or C++ Console or C++ Windows.

Prerequisite: None

Recommended: Grade 10 Computer and Information Science (ICS2OR) or Communications Technology (TGJ2OR)

Computer Science – Programming ICS4UR

Grade 12, (University Preparation)

This course enables students to further develop knowledge and skills in computer science. Students will use modular design principles to create complex and fully documented programs, according to industry standards. Student teams will manage a large software development project, from planning through to project review. Students will also analyse algorithms for effectiveness. They will investigate ethical issues in computing and further explore environmental

issues, emerging technologies, areas of research in computer science, and careers in the field. Students may program in VB6 or C++ Console or C++ Windows.

Prerequisite: *Grade 11 Computer and Information Science, University Preparation (ICS3U)*

**Computer
ICS4CR**

Programming

Grade 12, (College Preparation)

This course further develops students' computer programming skills. Students will learn Object-oriented programming concepts, create object-oriented software solutions, and design graphical user interfaces. Student teams will plan and carry out a software development project using industry-standard programming tools and proper project management techniques. Students will also investigate ethical issues in computing, and expand their understanding of environmental issues, emerging technologies, and computer-related careers. Students may program in VB6 or C++ Console or C++ Windows.

Prerequisite: *Grade 11 Computer and Information Science College Preparation (ICS3CR)*

Construction Technology

TCJ2OR

Grade 10, (Open)

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
TCJ3ER**

Technology

Grade 11, (Workplace Preparation)

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, layout, 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*

Recommended: *Grade 10 Construction, Open (TCJ2OR)*

**Construction
TCJ4ER**

Technology

Grade 12, (Workplace Preparation)

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: *Grade 11 Construction Technology, Workplace Preparation (TCJ3ER)*

Technological	Design	–	Exploring	the	Trades
----------------------	---------------	---	------------------	------------	---------------

TDJ3O (Female only)

Grade 11, (Open)

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	–			Engineering
----------------------	---------------	---	--	--	--------------------

TDJ3MR

Grade 11, (University/College Preparation)

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. Students will learn about inventions and new technologies, with emphasis on the communication of design ideas (CAD, interpreting and creating blueprints).

Prerequisite: *None*

Recommended: Grade 10 Communications Technology (TGJ2OR)

Technological	Design	-			Engineering
----------------------	---------------	---	--	--	--------------------

TDJ4MR

Grade 12, (University/College Preparation)

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 research, design, and test solutions for residential or commercial architecture, industrial engineering, and manufacturing. Students will enhance their problem solving and communication skills, and explore career opportunities and the postsecondary education and training requirements for them.

Prerequisite: *Technological Design, Grade 11, University/College Preparation (TDJ3MR)*

Hospitality and Tourism Technology

TFJ2OR
Grade 10, (Open)

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
TFJ3CR		

Grade 11, (College Preparation)

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

Recommended: Grade 10 Hospitality and Tourism (TFJ2OR)

Hospitality	and	Tourism
TFJ3ER		

Grade 11, (Workplace Preparation)

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

Recommended: Grade 10 Hospitality and Tourism (TFJ2OR)

Hospitality	and	Tourism
TFJ4CR		

Grade 12, (College Preparation)

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: *Grade 11 Hospitality and Tourism, Workplace Preparation (TFJ3CR)*

Hospitality
TFJ4ER

and

Tourism

Grade 12, (Workplace Preparation)

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: *Grade 11 Hospitality and Tourism, Workplace Preparation (TFJ3ER)*

Communications Technology

TGJ2OR

Grade 10, (Open)

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. Projects will include the use of digital photography, digital video, digital sound editing, desktop publishing, graphic design and animation.

Prerequisite: *None*

Communications
TGJ3MR

Technology

Grade 11, (University/College Preparation)

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. The course is divided into four units: Graphic Promotion and Communication; Studio Production; Digital Video and Imaging; and Interactive Media.

Prerequisite: *None*

Recommended: *Grade 10 Computer and Information Science (ICS2OR) or Grade 10 Communications Technology (TGJ2OR)*

Communications TGJ4MR			Technology
--	--	--	-------------------

Grade 12, (University/College Preparation)

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. This course will provide each student with a portfolio required by most postsecondary schools in this field.

Prerequisite: *Grade 11 Communications Technology, University/ College Preparation (TGJ3MR)*

Communications TGG3MR	Technology	–	Yearbook
--	-------------------	---	-----------------

Grade 11, (University/College Preparation)

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. The course is divided into four units: Graphic Promotion and Communication; Studio Production; Digital Video and Imaging; and Interactive Media. This course will be geared to producing the High School Yearbook.

Prerequisite: *None*

Recommended: *Grade 10 Communications Technology (TGJ2OR)*

Communications TGG4MR	Technology	–	Yearbook
--	-------------------	---	-----------------

Grade 12, (University/College Preparation)

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. This course will provide each student with a portfolio required by most postsecondary schools in this field. This course will be geared to producing the High School Yearbook.

Prerequisite: *Grade 11 Communications Technology - Yearbook, University/ College Preparation (TGG3MR)*

Exploring Technologies

TIJ1OR

Grade 9, (Open)

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.

Manufacturing Technology**TMJ2OR**
Grade 10, (Open)

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 molding. 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
TMJ3ER**Technology****Grade 11, Workplace Preparation**

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 industry standard 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

Recommended: Grade 10 Manufacturing Technology, Open (TMJ2OR)

Manufacturing
TMJ4ER**Technology****Grade 12, (Workplace Preparation)**

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: Grade 11 Manufacturing Technology, Workplace (TMJ3ER)

Health Care New

TPJ20R

Grade 10, (Open)

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

TPJ3MR

Grade 12, (University/College Preparation)

This course enables students to develop their understanding of basic health care procedures, including the safe use of appropriate instruments, equipment, and materials. Students will focus on health care fundamentals, including the anatomical features and physiology of the major body systems and the factors that affect homeostasis in the human body. Students will develop an awareness of health and safety issues in the health care field, analyse environmental and societal issues related to health care, and learn about professional practice standards and career opportunities in the field.

Prerequisite: None

Health Care

TPJ4MR

Grade 12, (University/College Preparation)

This course focuses on the development of a range of skills needed to analyse and interpret clinical findings. Students will learn about accepted health care practices and demonstrate an understanding of basic procedures and the use of appropriate instruments and equipment. They will acquire an understanding of basic concepts related to the function of the human immune system and explore the relationship between pathology and disease prevention and treatment. Students will expand their awareness of workers' health and safety issues, analyse environmental and societal issues related to health care, and further explore professional practice standards and postsecondary destinations in the field.

Prerequisite: Health Care, Grade 11, University/College Preparation (TPJ3MR)

Transportation Technology – Auto Mechanics

TTJ201

Grade 10, (Open)

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 – Small Engines

TTJ202

Grade 10, (Open)

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
TTJ3OR

Grade 11, (Open)

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

Recommended: Grade 10 Transportation Technology (TTJ2O1)

Transportation
TTJ4ER

Technology

Grade 12, (Workplace Preparation)

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

Technological Design (Woodworking)

TDJ2OR

Grade 10, (Open)

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. Students will be introduced to the safe use of woodworking machinery and put into practice skills they will develop throughout the semester, enabling them to design and build unique and interesting projects.

Prerequisite: None

**Custom
TWJ3ER**

Woodworking

Grade 11, (Workplace Preparation)

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

Recommended: Grade 10 Technological Design (Woodworking) (TDJ2OR)

**Custom
TWJ4ER**

Woodworking

Grade 12, (Workplace Preparation)

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 (TWJ3ER)

**Green
THJ2OR**

Industries

Grade 10, (Open)

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. Using materials, processes, and techniques commonly employed in the landscape industry, students will participate in a number of hands-on projects that may include the development of landscape concepts and design; plant propagation and care; landscape maintenance; and/or related construction activities.

Prerequisite: None

**Green
THJ3ER**

Industries

Grade 11, (Workplace Preparation)

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. The focus of this course will have students using materials, processes, and techniques commonly employed in the landscape industry, where they will participate in a number of hands-on projects that may include the development of landscape concepts and design; plant propagation and care; landscape maintenance; and/or related construction activities.

Prerequisite: None

Green
THJ3MR

Industries

Grade 11, (University/College Preparation)

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 will explore postsecondary education programs and career opportunities. The focus of this course will have students using materials, processes, and techniques commonly employed in the landscape industry, where they will participate in a number of hands-on projects that may include the development of landscape concepts and design; plant propagation and care; landscape maintenance; and/or related construction activities.

Prerequisite: None

Green
THJ4ER

Industries

Grade 12, (Workplace Preparation)

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. The focus of this course will have students using materials, processes, and techniques commonly employed in the landscape industry, where they will participate in a number of hands-on projects that may include the development of landscape concepts and design; plant propagation and care; landscape maintenance; and/or related construction activities.

Prerequisite: None

Recommend: *Green Industries, Grade 11, Workplace (THJ3ER)*

Green
THJ4MR

Industries

Grade 11, (University/College Preparation)

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. The focus of this course will have students using materials, processes, and techniques commonly employed in the landscape industry, where they will participate in a number of hands-on projects that may include the development of

landscape concepts and design; plant propagation and care; landscape maintenance; and/or related construction activities.

Prerequisite: *Green Industries, Grade 11, University/College Preparation (THJ3MR)*