Cornwall Collegiate and Vocational School

**Construction Technology Course Outline**

Course Code: TCJ-2O Course Level: Open

Credit Value: One credit Room: 105

Textbook: Wood Technology & Processes Pre-requisite: None

Teacher: Mr. J. Wilson Program Leader: Mr. J.Wilson

## Course Description

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.

Units of Study

|  |  |  |
| --- | --- | --- |
| Unit 1 | Construction Technology Fundamentals | ~ 20 hours |
| Unit 2 | Design, Layout and Planning Skills | ~ 20 hours |
| Unit 3 | Fabrication, Assembly and Finishing Skills | ~ 40 hours |
| Unit 4 | Technology, The Environment and Society | ~ 20 hours |
| Unit 5 | Professional Practice and Career Opportunities | ~ 10 hours |
| Culminating Task – Final Project | Working on throughout semester |

**Contacting the Instructor:**

I may be reached at the school at 932-8360 ext. 4105 and also by e‑mail at: Jeffrey.wilson@ucdsb.on.ca

## Assessment and Evaluation

Each unit will be evaluated using the Ministry of Education’s Achievement Chart for Technology (attached). You will be assessed and evaluated in the areas of your knowledge/understanding, thinking/inquiry skills, communication and ability to apply your knowledge to new problems. Methods of assessing and evaluating students will be in the form of quizzes, tests, project plans, project fabrication, class presentations then a Final Culminating Project with Plans and a final Written Evaluation.

**Course Breakdown by Achievement Category**

|  |  |
| --- | --- |
| Knowledge and Understanding | 25% |
| Thinking and Inquiry | 25% |
| Communication | 25% |
| Application | 25% |

**Final Grade Determination**

|  |  |
| --- | --- |
| Term Work | 70% |
| Culminating Project with Plans | 20% |
| Final Research Project  | 10% |
| **TOTAL** | 100% |

**Overall Expectations**

|  |  |
| --- | --- |
| **Strand** | **Overall Expectations** |
|
| Construction Technology Fundamentals**Students will:** | **A1.** describe the components and systems of buildings, the properties of various building materials,and the processes in which those materials are used;**A2.** demonstrate an understanding of the safe and correct use of construction tools, equipment,and techniques;**A3.** use correct terminology to describe building components and construction materials, tools,equipment, and processes. |
| Design, Layout and Planning Skills**Students will:** | **B1.** design construction projects, individually or in small groups, applying a design process to planand develop the projects and other problem-solving processes to address various related problemsand challenges;**B2.** use drawings to represent design ideas and solutions to technological challenges, and interpretdrawings accurately when working on construction projects;**B3.** apply the mathematical skills required in the planning and building of construction projects. |
| Fabrication, Assembly and Finishing Skills**Students will:** | **C1.** use tools, equipment, and techniques correctly and safely when preparing materials for a project;**C2.** use fabrication and assembly techniques safely, accurately, and in the correct sequence;**C3.** prepare surfaces and apply finishing products, trim, and hardware correctly and safely. |
| Technology, The Environment and Society**Students will:** | **D1.** demonstrate an understanding of ways in which the construction industry affects the environment;**D2.** describe ways in which the construction industry affects society. |
| Professional Practice and Career Opportunities**Students will:** | **E1.** identify and follow health and safety regulations, standards, and procedures related to theconstruction industry;**E2.** identify career opportunities in the construction industry, and describe the training required forthese careers. |

**Evaluation of Achievement of Overall Expectations**

All curriculum expectations must be accounted for in instruction, but evaluation focuses on students’ achievement of the overall expectations. A student’s achievement of the overall expectations is evaluated on the basis of his or her achievement of related specific expectations. The overall expectations are broad in nature, and the specific expectations define the particular content or scope of the knowledge and skills referred to in the overall

expectations. Teachers will use their professional judgement to determine which specific expectations should be used to evaluate achievement of the overall expectations, and which ones will be covered in instruction and assessment (e.g., through direct observation) but not necessarily evaluated.

**STRANDS IN THE TECHNOLOGICAL EDUCATION CURRICULUM**

The overall and specific expectations for each course in the technological education curriculum are typically organized in four distinct but related strands. As students move up through the grades, the expectations within these strands will increase in complexity and depth. These strands are as follows:

***Fundamentals:*** Students develop foundational knowledge and skills related to the design and fabrication of products or the provision of services in the particular broad-based technological subject area.

***Skills:*** Students develop the technological skills required for responding to a variety of practical challenges.

***Technology, the Environment, and Society:*** Students develop an understanding of the interrelationship between the technology or industry sector and the environment, and between the technology and various aspects of society. (In subject areas that relate to services, this strand is entitled Industry Practices, the Environment, and Society.)

***Professional Practice and Career Opportunities:*** Students develop an understanding of health and safety standards in the industry, professional concerns and issues, and the Essential Skills and work habits valued in the sector, and explore career opportunities and the education and training required for them.

**Reporting on Demonstrated Learning Skills**

The report card provides a record of the learning skills (see attached chart) demonstrated by the student in every course, in the following five categories: Works Independently, Teamwork, Organization, Work Habits, and Initiative. The learning skills are evaluated using a four-point scale (E–Excellent, G–Good, S–Satisfactory, N–Needs Improvement). The separate evaluation and reporting of the learning skills in these five areas reflects their critical role in students’ achievement of the curriculum expectations.

**Achievement Chart – Grades 11 and 12, Technology**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Category | 50-59% (Level 1)  | 60-69% (Level 2) | 70-79% (Level 3) | 80-100% (Level 4) |
| Knowledge/ Understanding | **The student:** |
| knowledge of facts, technical terminology, procedures, and standards | demonstrates limited knowledge of facts, technical terminology, procedures, and standards | demonstrates some knowledge of facts, technical terminology, procedures, and standards | demonstrates considerable knowledge of facts, technical terminology, procedures, and standards | demonstrates thorough knowledge of facts, technical terminology, procedures, and standards |
| understanding of concepts (e.g., uses of computer operating systems) | demonstrates limited understanding of concepts | demonstrates some understanding of concepts | demonstrates considerable understanding of concepts | demonstrates thorough and insightful understanding of concepts |
| understanding of relationships between concepts (e.g., energy conservation and manufacturing processes) | demonstrates limited understanding of relationships between concepts | demonstrates some understanding of relationships between concepts | demonstrates considerable understanding of relationships between concepts | demonstrates thorough and insightful understanding of relationships between concepts |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Category | 50-59% (Level 1) | 60-69% (Level 2) | 70-79% (Level 3) | 80-100% (Level 4) |
| Thinking/ Inquiry | **The student:** |
| thinking skills (e.g., evaluating professional practices and principles) | uses thinking skills with limited effectiveness | uses thinking skills with moderate effectiveness | uses thinking skills with considerable effectiveness | uses thinking skills with a high degree of effectiveness |
| inquiry/design skills (e.g., identifying the problem; formulating questions; planning; selecting strategies and resources; analysing and interpreting information; forming conclusions) | applies few of the skills involved in an inquiry/design process | applies some of the skills involved in an inquiry/design process | applies most of the skills involved in an inquiry/design process | applies all or almost all of the skills involved in an inquiry/design process |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Category | 50-59% (Level 1) | 60-69% (Level 2) | 70-79% (Level 3) | 80-100% (Level 4) |
| **Communicating** | **The student:** |
| communication of information (e.g., computer and technical specifications) | communicates information with limited clarity and precision | communicates information with some clarity and precision | communicates information with considerable clarity and precision | communicates information with a high degree of clarity and precision |
| use of language, symbols, and visuals (e.g., computer programming and technical drawing) | uses language, symbols, and visuals with limited accuracy and effectiveness | uses language, symbols, and visuals with some accuracy and effectiveness | uses language, symbols, and visuals with considerable accuracy and effectiveness | uses language, symbols, and visuals with a high degree of accuracy and effectiveness |
| communication for different audiences and purposes (e.g., tourism, construction) | communicates with a limited sense of audience and purpose | communicates with some sense of audience and purpose | communicates with a clear sense of audience and purpose | communicates with a strong sense of audience and purpose |
| use of various forms of communication (e.g., presentation software, technical reports) | demonstrates limited command of the various forms | demonstrates moderate command of the various forms | demonstrates considerable command of the various forms | demonstrates extensive command of the various forms |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Category | 50-59% (Level 1) | 60-69% (Level 2) | 70-79% (Level 3) | 80-100% (Level 4) |
| **Application** | **The student:** |
| application of ideas and skills in familiar contexts (e.g., demonstrating good customer service practices) | applies ideas and skills in familiar contexts with limited effectiveness | applies ideas and skills in familiar contexts with moderate effectiveness | applies ideas and skills in familiar contexts with considerable effectiveness | applies ideas and skills in familiar contexts with a high degree of effectiveness |
| transfer of concepts, skills, and procedures to new contexts (e.g., applying scientific principles to health care and personal services) | transfers concepts, skills, and procedures to new contexts with limited effectiveness | transfers concepts, skills, and procedures to new contexts with moderate effectiveness | transfers concepts, skills, and procedures to new contexts with considerable effectiveness | transfers concepts, skills, and procedures to new contexts with a high degree of effectiveness |
| application of procedures, equipment, and technology (e.g., use of design instruments, machine and hand tools) | uses procedures, equipment, and technology safely and correctly only with supervision | uses procedures, equipment, and technology safely and correctly with some supervision | uses procedures, equipment, and technology safely and correctly | demonstrates and promotes the safe and correct use of procedures, equipment, and technology |
| making connections, (e.g., between personal experiences and the subject, between subjects, between subjects and the world outside the school) | makes connections with limited effectiveness | makes connections with moderate effectiveness | makes connections with considerable effectiveness | makes connections with a high degree of effectiveness |

**Note: A student whose achievement is below 50% at the end of a course will not obtain a credit for the course.**

**Learning Skills Chart**

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| --- | --- |
| **Learning Skill** | **Look Fors** |
| ***Organization***The student demonstrates ability to organize and manage information, by: | * prioritizing work when faced with a number of tasks
* devising and following a coherent plan to complete tasks
* following specific steps to reach goals or to make improvements
* using appropriate information technologies to organize information and tasks
* arriving on time, with required notes, equipment and resources
 |
| ***Collaboration***The student works respectfully to achieve the goals of the group or class, by: | * working willingly and cooperatively to build healthy peer-to-peer relationships through personal and media-assisted interactions
* accepting various roles such as motivating and encouraging others to participate and taking on an equitable share of the work
* listening actively without interrupting and responding with respect, empathy and sensitivity to the needs of others
* paraphrasing points of view and asking questions to clarify meaning and to promote understanding
* sharing information, resources, and expertise and promoting critical thinking to solve problems and make decisions
 |
| ***Initiative***The student seeks new learning opportunities and responds to challenges by: | * looking for and acting on new ideas and opportunities for learning
* demonstrating the capacity for innovation and a willingness to take risks
* demonstrating curiosity and interest in learning
* approaching new tasks with a positive attitude
* recognizing and advocating appropriately for the rights of self and others to seek assistance when needed and utilizing appropriate supports
 |
| ***Responsibility***The student takes ownership for their learning by: | * fulfilling responsibilities and commitments within the learning environment
* completing and submitting class work, homework, and assignments according to agreed-upon timelines
* taking responsibility for and managing own behaviour
* putting forth consistent effort with assessment and evaluation tasks
* showing attention to detail in producing quality work
 |
| ***Self-regulation***The student reflects and responds to their learning environment by: | * setting own individual goals and monitoring progress towards achieving them
* seeking clarification or assistance when needed
* assessing their own strengths, needs and interests
* identifying learning opportunities, choices and strategies to meet personal needs and achieve goals
* persevering and making an effort when responding to challenges
 |
| ***Independent Work***The student practices self-direction in learning, by | * using prior knowledge or experiences to solve problems and making decisions
* demonstrating perseverance in bringing tasks to completion
* independently monitoring, assessing, and revising plans to complete tasks and meet goals
* using class time appropriately to complete tasks
* following instructions with minimal supervision
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**BASIC GUIDELINES / EXPECTATIONS FOR THE CCVS CLASSROOM**

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| **GOAL #1: STUDENTS WILL REMAIN IN THEIR ASSIGNED CLASSROOM FOR THE ENTIRE PERIOD.** |

**This implies:**

* The student arrives prepared with binder, pens, pencils, paper and all other learning materials necessary for class. The student WILL NOT be permitted to go to their locker.
* The student has taken care of personal business during the break periods in between classes. (In certain circumstances students may have to leave for health reasons.)
* WITH PERMISSION, the student may only leave class for the washroom 20 minutes after the class has begun or 20 minutes prior to the period ending on an individual basis. (One student at a time.)

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| **GOAL #2: THE CLASSROOM LEARNING ENVIRONMENT WILL BE CONDUCIVE TO LEARNING.** |

**This implies:**

* The student will arrive on time for every class.
* A seating plan will exist for every class; students will remain in their seats at all times until the very end of the period.
* During class learning time, the student will demonstrate respect for their learning environment by:
* raising their hand
* remaining quiet while others speak
* respecting quiet time such as Literacy Periods and presentations

**Course Requirements**

1. Students and teachers are to be treated with respect in this room and everywhere else in the school community.

2. Students must abide by the CCVS Attendance Policy.

3. Help for this course will be available at lunch on specified days (TBA).

4. Students who miss an evaluation task for a valid reason will complete a parallel form of the evaluation task at a mutually agreed upon time and location.

5. Evaluation tasks are due at the beginning of the class on the due date to avoid distraction during the regular class time. Students who do not submit evaluation tasks on time will enter into a contract with the subject teacher so that the task may be completed in a timely fashion.

6. For health and safety reasons, food and drinks are not permitted in this classroom (except for water in bottles).

7. Class time that is not being used for instruction or completion of labs is to be used to complete the assigned class work/homework.

8. If you wish to listen to music when completing homework, you **must** use headphones. If the music is too loud you will receive a warning. If the problem recurs, the headphones will be removed and kept by me until the end of the period.

9. To maximize student learning, students will not be permitted to leave the room ***during a lesson*** to go to the washroom, get a drink of water etc. Only after the lesson will permission be granted. Students who abuse this privilege, for example by asking to use the washroom every day (unless warranted by some medical condition), will lose the privilege to use the washroom during class time. In addition, the school policy regarding washroom breaks states that students are not to leave the classroom during the first and last 20 minutes of the class.

10. Cell-phones are to be OFF and out of sight in the classroom. Use of cell phones during class time will be dealt with according to school policy.

**Completion Contract for Outstanding Evaluation Tasks**

|  |
| --- |
| Student Name: |
| Teacher Name: | Course Code: |
| Name of Evaluation Task: |
| Description of Evaluation Task |
| Overall Expectation(s) Addressed |
| Original Due Date: |
| Renegotiated Due Date: |
| Accommodations made to Evaluation Task |

Student Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_

Parent / Guardian Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_

Teacher Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_

**\*\* Students who do not fulfill the conditions of the Completion Contact**

**understand that they will receive a "NO MARK" for this evaluation task which may put their term mark in jeopardy, i.e. level R (40) or R‑ (20). \*\***