



## COURSE OUTLINE: CTT140 - CONSTRUCTION BASICS

Prepared: Peter Corbett

Approved: Corey Meunier, Chair, Technology and Skilled Trades

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| <b>Course Code: Title</b>   | CTT140: CONSTRUCTION BASICS   |
| <b>Program Number: Name</b>   | 4005: PRE-TRADES TECHNOLOGY   |
| <b>Department:</b>  | PRE-TRADES & TECHNOLOGY   |
| <b>Academic Year:</b>   | 2022-2023   |
| <b>Course Description:</b>  | <p>This course is intended to introduce the student to various activities commonly undertaken in construction and related engineering disciplines. The student will gain understanding in the use of materials, procedures, techniques, tools and equipment commonly encountered in construction engineering projects. Construction is one of the leading industries in Ontario. It takes teamwork to be successful in this profession. This course introduces you to some of the key skills for success in this field. These skills include AutoCAD, scheduling, scaffolding, concrete testing, surveying, estimating and woodworking.</p> |
| <b>Total Credits:</b>   | 3   |
| <b>Hours/Week:</b>  | 3   |
| <b>Total Hours:</b>   | 42  |
| <b>Prerequisites:</b>   | There are no pre-requisites for this course.  |
| <b>Corequisites:</b>  | There are no co-requisites for this course.   |
| <b>Vocational Learning Outcomes (VLO's) addressed in this course:</b> | <p><b>4005 - PRE-TRADES TECHNOLOGY</b></p> <p>VLO 1 Function at a level of mathematics suited to the student's post-secondary program aspirations.</p> <p>VLO 3 Enhance reading and writing skills to college entry standards.</p> <p>VLO 4 Develop effective learning and study skills.</p> <p>VLO 5 Develop effective career planning skills.</p> <p>VLO 6 Become familiar with the college study requirements.</p> <p>VLO 9 Work with others</p>   |
| <b>Essential Employability Skills (EES) addressed in this course:</b> | <p>EES 2 Respond to written, spoken, or visual messages in a manner that ensures effective communication.</p> <p>EES 4 Apply a systematic approach to solve problems.</p> <p>EES 8 Show respect for the diverse opinions, values, belief systems, and contributions of others.</p> <p>EES 9 Interact with others in groups or teams that contribute to effective working relationships and the achievement of goals.</p> <p>EES 10 Manage the use of time and other resources to complete projects.</p> <p>EES 11 Take responsibility for ones own actions, decisions, and consequences.</p>  |



**Course Evaluation:** Passing Grade: 50%, D  
 A minimum program GPA of 2.0 or higher where program specific standards exist is required for graduation.

**Other Course Evaluation & Assessment Requirements:** Grade  
 Definition Grade Point Equivalent  
 A+ 90 - 100% 4.00  
 A 80 - 89%  
 B 70 - 79% 3.00  
 C 60 - 69% 2.00  
 D 50 - 59% 1.00  
 F (Fail) 49% and below 0.00  
 CR (Credit) Credit for diploma requirements has been awarded.  
 S Satisfactory achievement in field /clinical placement or non-graded subject area.  
 U Unsatisfactory achievement in field/clinical placement or non-graded subject area.  
 X A temporary grade limited to situations with extenuating circumstances giving a student additional time to complete the requirements for a course.  
 NR Grade not reported to Registrar's office.  
 W Student has withdrawn from the course without academic penalty.

**Books and Required Resources:** Construction Health & Safety Manual by Infrastructure Health & Safety  
 Edition: 2013  
 ISBN: 9780919665541

**Course Outcomes and Learning Objectives:**

| <b>Course Outcome 1</b>  | <b>Learning Objectives for Course Outcome 1</b>  |
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| 1. Use CAD to create and plot a basic drawing                                      | 1.1 Recognize the hardware and software required for CAD<br>1.2 Understand the use and value of precision in CAD for engineering and construction<br>1.3 Use CAD to extract information from a drawing   |
| <b>Course Outcome 2</b>  | <b>Learning Objectives for Course Outcome 2</b>  |
| 2. Use basic mathematics to solve problems found in the construction industry.     | 2.1 Review of basic algebra and geometry<br>2.2 Review of imperial measurement<br>2.3 Define perimeter, area and volume related to various geometric shapes<br>2.4 Review of the Pythagorean Theorem and its practical application<br>2.5 Apply basic mathematics to solve construction related problems   |
| <b>Course Outcome 3</b>  | <b>Learning Objectives for Course Outcome 3</b>  |
| 3. Describe methods and procedures required for scaffold erection and dismantling. | 3.1 List required personal protective equipment<br>3.2 Interpret related occupational health and safety legislation<br>3.3 Interpret material list requirements<br>3.4 Identify scaffolding system and components<br>3.5 Describe pre-installation inspection procedures for scaffolding system and components<br>3.6 Describe area layout procedures for scaffold base<br>3.7 Describe the procedures to check alignment during |

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|   | installation<br>3.8 Demonstrate basic installation procedures for scaffolding systems   |
| <b>Course Outcome 4</b>   | <b>Learning Objectives for Course Outcome 4</b>   |
| 4. Describe the methods and procedures required for selecting and mixing concrete ingredients and testing for slump and strength. | 4.1 Identify various types of cement and describe their use<br>4.2 Identify types of concrete admixtures and describe their uses<br>4.3 Identify concrete curing methods and materials<br>4.4 Identify concrete testing methods<br>4.5 Perform slump testing of concrete  |
| <b>Course Outcome 5</b>   | <b>Learning Objectives for Course Outcome 5</b>   |
| 5. Describe the use of survey measurement devices for construction.   | 5.1 Identify surveying equipment, including: tripod, level, transit, laser level<br>5.2 Interpret the use of a tripod, level and rod<br>5.3 Define the term bench mark, back sight, foresight and height of instrument<br>5.4 Illustrate the set up of a level on a tripod<br>5.5 Illustrate the use of the instrument in calculating levels and heights<br>5.6 Describe the use of grade through the use of a bench mark |
| <b>Course Outcome 6</b>   | <b>Learning Objectives for Course Outcome 6</b>   |
| 6. Understand the use of Estimating in construction.  | 6.1 Identify different types of estimates<br>6.2 Recognize the different construction divisions   |
| <b>Course Outcome 7</b>   | <b>Learning Objectives for Course Outcome 7</b>   |
| 7. Construct a woodworking project according to specifications provided.  | 7.1 Sizing material as per specifications on drawings provided<br>7.2 Training of the safe use of tools required to complete the project  |

**Evaluation Process and Grading System:**

| <b>Evaluation Type</b> | <b>Evaluation Weight</b> |
|------------------------|--------------------------|
| Attendance             | 15%                      |
| Projects and Labs      | 50%                      |
| Tests and Assignments  | 35%                      |

**Date:**

December 15, 2022

**Addendum:**

Please refer to the course outline addendum on the Learning Management System for further information.

