

COURSE INFORMATION:

Course Prefix/No.:	BCT 105
Course Title:	Tool Usage & Safety
Lecture Hours/Week:	1.0
Lab Hours/Week:	3.0
Credit Hours/Semester:	2.0

[*Distance Learning Attendance/VA Statement*](#)
[*Textbook Information*](#)

COURSE DESCRIPTION:

This course covers tool skills and their safe use in construction.

COURSE COMPETENCIES:

Upon successful completion of this course, the student should be able to:

Module 1 - Job Site Safety

- Discuss both safe and unsafe work practices.
- Discuss both safe and unsafe working conditions.
- Define OSHA and its purpose.
- Discuss employer and employee responsibilities.
- Name different types of PPE and discuss the environments in which they are necessary.
- Discuss the Hazard Communication Standard.
- Discuss basic fire safety.
- Discuss basic trench safety.
- Discuss basic electrical safety.

Module 2 - Measurement Tools, Chalk Lines, and Levels

- Use both the metric system and the English system of measurement.
- Demonstrate the proper use of a tape measure.
- Demonstrate the proper use of a framing square.
- Demonstrate the proper use of a speed square.
- Demonstrate the proper use of a combination square.
- Demonstrate the proper use and care of a chalk line reel.
- Demonstrate the proper use and care of a spirit level.
- Demonstrate the proper use of a line level.
- Demonstrate the proper care and use of a laser level.
- Demonstrate the proper use of a plumb bob.

Module 3 - Striking Tools, Bars, and Pullers

- Discuss the differences and demonstrate the proper use and care for the following hammers:
 - Claw hammer
 - Framing hammer
 - Bricklayer's hammer
 - Sledgehammer
- Discuss the differences and demonstrate the proper use and care for the following pulling bars:
 - Wrecking bar (Crow bar)
 - Flat bar
 - Cat's claw

Module 4 - Drivers, Pliers, and Wrenches

- Discuss basic screwdriver fundamentals.
- Discuss the differences and demonstrate the proper use and care for the following drivers:
 - Stubby screwdriver
 - Square-shank screwdriver
 - Round-shank screwdriver
 - Holding screwdriver
 - Magnetic screwdriver
 - Offset screwdriver
 - Ratcheting screwdriver
 - Torque screwdriver
 - Nut driver
- Discuss the differences and demonstrate the proper use and care for the following pliers:
 - Electrician's (Linemen's)
 - Needle nose
 - Wire Cutters (Diagonals)
 - Slip-joint
 - Tongue-and-groove (Channellocks®)
 - Locking (Vise Grips®)
- Discuss the differences and demonstrate the proper use and care for the following wrenches:
 - Open end
 - Box end
 - Combination
 - Adjustable
 - Pipe
 - Basin
 - Socket

Module 5 - Cutting Tools

- Discuss the differences and demonstrate the proper use and care for the following hand saws:
 - Hacksaw
 - Crosscut
 - Ripsaw
 - Coping
 - Wallboard (Sheetrock)
- Safely demonstrate the proper use and care of a utility knife.
- Demonstrate the proper use of a tubing or pipe cutter.

Module 6 - Power Tool Inspection, Selection, Use, and Care

- Properly inspect power tools for unsafe conditions prior to use.
- Understand and discuss the importance of insulating and grounding power tools.
- Discuss the differences, advantages, and disadvantages when comparing corded and cordless power tools.
- Discuss the differences and demonstrate the proper use and care for the following power tools:
 - Portable Circular Saw
 - Saber Saw (Jigsaw)
 - Reciprocating Saw
 - Drills
 - Hammer Drills

STANDARDS:

Assignments and attendance must be completed as designated in "Evaluation Strategies/Grading." Criteria for minimal acceptable performance will be provided by the instructor.

REQUIREMENTS:

Attendance Policy

The college attendance policy stated in the college handbook will be honored. The

Academic Honesty

Students are expected to adhere to the college policy regarding student conduct as stated in the college handbook.

Assignments

Students are expected to complete all assignments and any supplementary exercises designated by the instructor.

EVALUATION STRATEGIES/GRADING:

Students must complete all modules, including assignments, projects, labs, and tests. Students must earn at least a "C" in order for the course to serve as a prerequisite and for the course to apply towards a certificate.

Grading Scale:

A = 90 - 100
B = 80 - 89.9
C = 70 - 79.9
D = 60 - 69.9
F = 0 - 59.9

Evaluation Method:

Tests/Projects (minimum of four total)	8.33% for each Module
Work Attitude	4.16% for each Module
Lab	4.16% for each Module

16.67% X 6 modules = 100% Final Grade

Work Attitude is defined as:

- Participation
- Cooperation
- Appearance
- Effort
- Safety
- Responsibility
- Professionalism
- Attendance
- Self Motivation
- Works Independently

ENTRY LEVEL SKILLS:

The student must be able to read and solve basic mathematical equations.

PREREQUISITES/CO-REQUISITES:

Prerequisite:

RDG 031 or equivalent

Co-requisite:

None

METHODS OF INSTRUCTION:

Lectures, reading assignments, projects, discussions, video presentations, multi-media presentations, and web content are the major teaching methods used in this course. See instructor for specifics.

LAB EXERCISES (See addendum or instructor for additional details)

Module 1 - Job Site Safety

- Demonstrate safe work practices.
- Evaluate working conditions in the lab.
- Use PPE in the environments in which they are necessary.
- Review the MSDS.
- Locate fire extinguishers and practice evacuation procedures.
- Practice lock-out / tag-out procedures.

Module 2 - Measurement Tools, Chalk Lines, and Levels

- Demonstrate the proper use of a tape measure.
- Demonstrate the proper use of a framing square.
- Demonstrate the proper use of a speed square.
- Demonstrate the proper use of a combination square.
- Demonstrate the proper use and care of a chalk line reel.
- Demonstrate the proper use and care of a spirit level.
- Demonstrate the proper use of a line level.
- Demonstrate the proper care and use of a laser level.
- Demonstrate the proper use of a plumb bob.

Module 3 - Striking Tools, Bars, and Pullers

- Demonstrate the proper use and care for the claw hammer
- Demonstrate the proper use and care for a flat bar and the cat's claw.

Module 4 - Drivers, Pliers, and Wrenches

- Practice basic screwdriver fundamentals.
- Demonstrate the proper use and care for the following drivers:
 - Stubby screwdriver
 - Square-shank screwdriver
 - Round-shank screwdriver
 - Holding screwdriver
 - Offset screwdriver
 - Ratcheting screwdriver
 - Torque screwdriver
 - Nut driver

- Demonstrate the proper use and care for the following pliers:
 - Electrician's (Linemen's)
 - Needle nose
 - Side Cutters (Diagonals)
 - Slip-joint
 - Tongue-and-groove (Channellocks®)
 - Locking (Vise Grips®)
- Demonstrate the proper use and care for the following wrenches:
 - Open end
 - Box end
 - Combination
 - Adjustable
 - Socket

Module 5 - Cutting Tools

- Demonstrate the proper use and care for the following hand saws:
 - Hacksaw
 - Crosscut
 - Wallboard (Sheetrock)
- Safely demonstrate the proper use and care of a utility knife.
- Demonstrate the proper use of a tubing or pipe cutter.

Module 6 - Power Tool Inspection, Selection, Use, and Care

- Properly inspect power tools for unsafe conditions prior to use.
- Discuss the differences and demonstrate the proper use and care for the following power tools:
 - Portable Circular Saw
 - Saber Saw (Jigsaw)
 - Reciprocating Saw
 - Drills
 - Hammer Drills