ATPD-1310: TECHNICAL MEASUREMENTS, HAND & POWER TOOL USE IN PILE DRIVING

Cuyahoga Community College

Viewing: ATPD-1310 : Technical Measurements, Hand & Power Tool Use in Pile Driving

Board of Trustees:
September 2025

Academic Term:
Fall 2025

Subject Code
ATPD - Applied Ind Tech-Pile Driving

Course Number:
1310

Title:
Technical Measurements, Hand & Power Tool Use in Pile Driving

Catalog Description:
Introduction of safe use of pile driving tools. Topics include measurements, tool groups and tool applications.

Credit Hour(s):
2

Lecture Hour(s):
2

Requisites

Prerequisite and Corequisite
ATCT-1301 Introduction to Carpentry, and departmental approval: admission to Pile Driving Technology apprenticeship program.

Outcomes

Course Outcome(s):
Demonstrate correct and safe use of measuring tools, hand and power tools, and apply math concepts as necessary.

Objective(s):
1. Apply math concepts needed for the Pile Driving trade.
2. Identify and demonstrate the correct use of all measuring tools.
3. Demonstrate safe use of all hand and power tools used in industry.

Methods of Evaluation:
1. Quizzes
2. Exams
3. Classroom participation
4. Demonstration of assigned projects.

Course Content Outline:
1. Concepts
   a. Causes of accidents.
   b. Unsafe conditions and acts.
   c. Tool requirements for specific jobs.
   d. Correct tool usage

   i. Layout-measuring marking tools
   ii. Cutting-shaping-shaving tools
   iii. Driving-staking-chopping tools
   iv. Fastening-joining tools
   v. Boring-auguring tools
   vi. Clasping-prying-separating tools
   vii. Contractor supplied tools.
e. Types of electrical and air tools
   i. Basic power tools
   ii. Pneumatic tools
   iii. Power-actuated tools
f. Types of engine-driven tools
   i. 2-cycle gasoline chain saw
   ii. 2-cycle gasoline multi-purpose saw
   iii. Road-portable diesel air compressor.
g. Types of pneumatic tools
   i. In-line air accessories
   ii. Rivet buster
   iii. Chipping gun
   iv. Pneumatic rotary sinker drill
   v. Pneumatic impact wrench
   vi. Pneumatic high
   vii. RPM multi-vane drill motor
h. Applied Math Concepts
   i. Measurements
   ii. Conversions
   iii. Formulas
   iv. Calculations

2. Skills
   a. Computed and direct measurements.
   b. Compute percents and percentages for interest and discounts.
   c. Compute fractions and decimals.
   d. Group hand tools using care in selection.
   e. Oxyacetylene group.
3. Issues
   a. Pre-job planning

Resources

United Brotherhood of Carpenters. *Mathematics and Workbooks.* Second ed. California: United Brotherhood of Carpenters, 2001.

Northern California Pile Drivers. *Pile Driving Technologies.* Second ed. Northern CA: Northern California Pile Drivers, 1990.

Northern California Pile Drivers. *Construction Mathematics for Pile Drivers Bridge Builders.* Fifth ed. California: Northern California Pile Drivers, 1992.

United States Army Corps of Engineers. *Pile Foundations and Pile-drving Formulae*. Legare Street Press, 2022.

Resources Other

Carpenter's International Training Fund. https://www.carpenters.org/citf-training/ . 2024.

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