



Unit Objectives
Construction Technology II
CTE – Career and Technology Education Strand
Averill Park High School

Unit One - Blueprints (3 classes)

- Read and interpret data on title block
- Identify and explain various types of architectural drawings
- Identify various symbols, abbreviations and line types
- Use dimensions to determine location and size of structure components
- Use notes to determine location, size and properties of structure components
- Use tables to determine location, size and properties of structure components
- Use set of blueprints to answer questions about how a building is constructed

Unit Two - The Residential Structure (3 classes)

- Identify substructure and superstructure and their purposes
- Identify styles of residential architecture
- Identify characteristics of styles of residential architecture
- Identify history of styles of residential architecture
- Identify the various systems within a residential structure

Unit Three - Construction Materials (2 class)

- Describe the difference between structural, functional and cosmetic materials
- Identify the different types of construction materials (dimensional lumber, composite, concrete, rebar, pressure treated lumber, hangers and ties, columns and beams, sheathing)
- Interpret information using grade stamps
- Identify tendencies and flaws of materials
- Identify standard material sizes and thicknesses
- Identify nominal and actual lumber sizes

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Unit Four - Fasteners and Connections (1 class)

- Identify various types of fasteners
- Identify characteristics of various types of fasteners
- Identify applications for various types of fasteners
- Identify various types of connections
- Identify applications for various types of connections
- Identify standard fastener sizes
- Identify appropriate fastener sizes for particular applications

Unit Five - Occupational Safety and Health Administration (3 classes)

- Identify the purpose of the Occupational Safety and Health Administration
- Identify what OSHA does
- Identify the various conditions OSHA regulates
- Identify the major safety hazards in the workshop and on the construction site
- Identify ways of minimizing the chances of an accident occurring
- Identify and properly use personal protective equipment
- Navigate 29 CFR 1926 Construction Regulations

Unit Six - International Residential Building Code (3 classes)

- Identify necessity of building codes
- Identify major categories of the ICC Residential Building Codes
- Locate and navigate the ICC Residential Building Codes
- Answer questions using the ICC Residential Building Codes

Unit Seven - Estimating (3 classes)

- Identify necessity of construction estimating
- Identify materials necessary to complete a particular job
- Quantify materials necessary to complete a particular job
- Locate and assign unit costs to materials required to complete a particular job
- Identify the factors involved in estimating labor costs
- Identify overhead costs
- Identify different methods of calculating profit

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- Estimate material costs for a single story residential structure

Unit Eight - Site Work (2 class)

- Read and interpret a site plan
- Identify various types of utilities
- Explain easements and setbacks and their purpose
- Read and interpret contour lines
- Identify tasks involved in preparing a site for construction
- Calculate cut and fill
- Identify OSHA regulations related to site work

Unit Nine - Foundations (4 classes)

- Identify the various components of concrete
- Explain how concrete is made/set
- Identify variables that affect concrete's performance
- Lay out simple and complex structures
- Erect batter boards
- Erect concrete forms
- Explain how the substructure connects to the superstructure
- Explain the necessity for drainage and various drainage techniques
- Identify components of a foundation system
- Identify function of foundation components
- Identify forces acting on a foundation
- Use ICC to design compliant foundation

Unit Ten - Floor Framing (4 classes)

- Identify the components of a floor structure
- Identify forces acting on a floor structure
- Calculate sizes of components of a floor structure
- Calculate quantities of components required to frame a floor structure
- Layout a floor structure
- Layout a rough opening

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- Select appropriate fasteners and quantities for connecting members
- Construct a floor frame
- Layout and install sheathing
- Design, layout and install a cantilever system

Unit Eleven - Stairs (3 classes)

- Identify the components of a stair system
- Use ICC Building Codes to design a stair system
- Calculate appropriate rise, run and number of treads
- Layout a stringer
- Identify components of a railing system

Unit Twelve - Wall Framing (5 classes)

- Identify the components of a wall system
- Identify the forces acting on wall components
- Identify the function of the wall components
- Calculate size of wall components
- Calculate quantity of wall components
- Layout a sole plate
- Use ICC Building Codes to design a wall system
- Layout and install sheathing

Unit Thirteen - Roof Framing (5 classes)

- Identify components of a roof system
- Identify the forces acting on a roof system
- Identify the function of the roof components
- Calculate size of roof components
- Calculate quantity of roof components
- Layout a roof system
- Layout a common rafter
- Identify the purpose and components of a roof truss

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- Use ICC Building Code to design a roof system
- Install roof rafters
- Install roof trusses
- Frame gable ends
- Layout and install roof sheathing

Unit Fourteen - Asphalt Roofing (4 classes)

- Identify components of asphalt roofing system
- Identify purpose of asphalt roofing components
- Install roofing felt
- Install drip edge
- Install ice and water shield
- Install asphalt shingles
- Install ridge vent

Unit Fifteen - Windows and Doors (2 classes)

- Identify various styles of windows
- Identify various styles of doors
- Identify various components of a door/door frame
- Identify various components of a window/window frame
- Properly size a door
- Properly hang a door
- Properly size a window
- Properly hang a window
- Properly install a lockset

Unit Sixteen - Weatherproofing (3 classes)

- Identify purpose of weatherproofing
- Identify components of weatherproofing system
- Install exterior house wrap
- Identify various types of insulation
- Identify characteristics of various types of insulation

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- Install batt insulation
- Identify purpose of interior vapor barrier
- Install interior vapor barrier

Unit Seventeen - Vinyl Siding (4 classes)

- Identify various components of vinyl siding system
- Install f-channel
- Install vinyl soffit
- Install starter strip
- Install corners
- Install j-channel
- Install horizontal siding
- Design and install aluminum fascia wrap

Unit Eighteen - Interior Finish (5 classes)

- Install gypsum wall board
- Tape and mud gypsum wall board
- Install crown moulding
- Install door and window trim
- Install base moulding
- Identify various types of finish floors
- Primer and paint trim and gypsum

Final Unit - Sheds

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