

Carpentry
Level III Unit Outline
Career Connections Project Book 1 & 2

Unit 1: Agenda Book Review/Classroom Rules

- Class discussion of student agenda book
- Review of classroom rules
- School safety protocols, district drills and emergency evacuations, behavior and meeting locations
- Review expectations and school policies for electronic devices

Unit 2: Safety, First Aid, Personal Protective Equipment and Shop Attire

- Identify, discuss, locate first aid and blood borne kits
- Identify, locate and demonstrate function and purpose of the Emergency Eye Station
- Identify, discuss, locate fire extinguisher
- Identify, distribute and discuss function and uses of protective eyewear, appropriate personal protective equipment (PPE) required in shop, and acceptable shop attire
- Identify, show location and discuss function and uses of the SDS (Safety Data Sheets) and how to interpret the information about paints and aerosols, content precautions, material labeling
- Equipment safety protocols
- Identify, demonstrate shop ventilation systems where applicable
- Identify locate and discuss function of shop flammable cabinet where applicable
- Discuss and demonstrate shop housekeeping of supplies, work stations and room maintenance
- Discuss and identify electrical safety considerations in the shop area
- Compile a safety section in the student shop notebook
- Identify, demonstrate air gauge function and operation where applicable
- Completion of online safety course and successful passing of safety test(s)

Unit 3: Carpentry & Career Connections Construction Project Book I & II

- Learn about heavy construction
- Tote Box and alternate projects (Chapter 7)
- Bird House and alternate projects (Chapter 8)
- Step Stool and alternate projects (Chapter 9)
- Book Case and alternate projects (Chapter 10)
- Tool Box and alternate projects (Chapter 11)
- Sawhorse (II Chapter 3)

- Picnic Table (II Chapter 4)
- Learn the many aspects of Building Trades

Unit 4: Construction Materials I

- Explain about the nature of wood and its properties
- Learn about the process of lumber manufacturing
- Identify difference between softwoods and hardwoods
- Differentiate between the size, shapes and dimensions of lumber

Unit 5: Hand Tools I

- Learn how to layout, measure, and use devices to check a design
- Learn the use of fastening and prying tools
- Learn to use portable sawing and cutting tools
- Learn to use portable, stationary boring and clamping tools
- Learn to use smoothing tools

Unit 6: Power Tools I

- Learn the basic safe use of portable power saws
- Learn the basic use of portable stationary saws
- Learn the use of portable power drills and screwdrivers
- Learn the use of portable power planes, routers, and sanders

Unit 7: Construction Equipment, Job Site Safety, and Working Conditions I

- Learn to use personal safety equipment
- Ability to use construction equipment in a safe working environment
- Ability to use proper judgment to maintain job site safety and working conditions
- Learn to use personal Fall Arrest equipment

Unit 8: Building Design and Print Reading I

- Learn aspects of building designs, plans, and specifications
- Understand the language of plans
- Learn the use and how to read plot plans
- Learn the use and how to read foundation plans
- Learn the use and how to read floor plans
- Ability to understand section views
- Understand details and framing plans

- Understand door, window, and finish schedules

Unit 9: Survey Instruments and Operations I

- Learn the basic knowledge of the builders' level, automatic level, water level, laser level, and transit levels

Unit 10: Foundation and Outdoor Slab Construction I

- Understanding of a building site and foundation layout
- Learn about the different types of foundations used in construction
- Learn the properties of concrete and its many uses
- Learn the different forming methods and materials needed for concrete
- Learn stairway construction and outdoor slab construction
- Learn to reinforce concrete

Unit 11: Floor, Wall, and Ceiling Frame Construction I

- Learn the basic identification of parts associated with floor, wall, and ceiling construction
- Identify points of load
- Learn the basic aspects of floor, wall, and ceiling framing

Unit 12: Roof Frame Construction I

- Learn the basic principles of roof construction
- Distinguish between gable, gambrel, and shed roofs
- Learn the principles of installing roof coverings
- Learn the principles of installing flashing
- Learn the principles of waterproofing

Unit 13: Energy Conservation: Insulation and Construction Methods I

- Learn about temperature control, condensation, and ventilation in buildings
- Learn about thermal insulation and other insulating methods used in construction
- Learn about R-value and sound control in construction
- Learn aspect related to solar “green” energy in construction

Unit 14: Exterior Finish I

- Ability to understand basic exterior finishings
- Understanding the use of vapor barriers
- Learn techniques of exterior door and window installation
- Learn techniques for exterior wall finishes, composites, and natural materials

Unit 15: Interior Finish I

- Learn techniques of interior wall and ceiling finishes; smooth and textured
- Learn techniques of interior doors and hardware finishes
- Learn techniques of cabinet and countertop installations
- Learn techniques of interior trim

Unit 16: Stairway Construction I

- Differentiate between the types of stairways used in construction
- Basic knowledge of stairway parts and components
- Learn about interior and exterior stairway construction
- Learn about handrails and handrail hardware

Unit 17: Post-and-Beam Construction I

- Understand the basic fundamentals of post-and-beam construction
- Understand the basic fundamentals of heavy timber construction
- Learn spans and weight transfer of post and beam construction
- Learn spans and weight transfer of heavy timber construction

Unit 18: Heavy Concrete Construction I

- Learn the basics of foundation design for heavy construction
- Learn the components of concrete
- Precast concrete systems
- Learn concrete placement for heavy construction
- Learn concrete finishes for heavy construction
- Understand Slump tests

Carpentry
New Jersey Student Learning Standards

NJ Learning Standards: CTE.9.3

CONTENT AREA:	STANDARD 9.3 CAREER AND TECHNICAL EDUCATION
ARCHITECTURE & CONSTRUCTION CAREER CLUSTER®	
Number	Standard statement
<i>By the end of Grade 12, Career and Technical Education Program completers will be able to:</i>	
CAREER CLUSTER®:	ARCHITECTURE & CONSTRUCTION (AC)
9.3.12.AC.1	Use vocabulary, symbols and formulas common to architecture and construction.
9.3.12.AC.2	Use architecture and construction skills to create and manage a project.
9.3.12.AC.3	Comply with regulations and applicable codes to establish and manage a legal and safe workplace.
9.3.12.AC.4	Evaluate the nature and scope of the Architecture & Construction Career Cluster and the role of architecture and construction in society and the economy.
9.3.12.AC.5	Describe the roles, responsibilities, and relationships found in the architecture and construction trades and professions, including labor/management relationships.
9.3.12.AC.6	Read, interpret and use technical drawings, documents and specifications to plan a project.
9.3.12.AC.7	Describe career opportunities and means to achieve those opportunities in each of the Architecture & Construction Career Pathways.