Department of Teaching & Learning
Parent/Student Course Information

Carpentry
(VO8602)
Three Credits, One Year
Grades 10 - 12

Counselors are available to assist parents and students with course selections and career planning. Parents may arrange to meet with the counselor by calling the school's guidance department.

COURSE DESCRIPTION
In this course, students learn the use and maintenance of hand and power tools utilized in the field of carpentry. The kinds, grades, and characteristics of building materials are covered in depth, as well as the proper method of cutting, shaping and joining. This course also includes reading blueprints; building foundations; framing floors, walls, stairs and roofs; installing windows and doors; and applying exterior and interior finishes.

CERTIFICATION
Skills Connect: Carpentry

STUDENT ORGANIZATION
SkillsUSA is a co-curricular organization for all students enrolled in trade and industrial education programs. SkillsUSA is a partnership of students, teachers and industry working together to ensure America has a skilled workforce. SkillsUSA helps students excel by providing educational programs, events and competitions that support career and technical education (CTE) in the nation's classrooms. Students are highly encouraged to participate.

PREREQUISITE
Construction Technology

OPTIONS FOR NEXT COURSE
None

REQUIRED STUDENT TEXTBOOK
None

<div align="center">**COMPETENCIES FOR CARPENTRY**</div>

Demonstrating Workplace Readiness Skills: Personal Qualities and People Skills
1   Demonstrate positive work ethic.
2   Demonstrate integrity.
3   Demonstrate teamwork skills.
4   Demonstrate self-representation skills.
5   Demonstrate diversity awareness.
6   Demonstrate conflict-resolution skills.
7   Demonstrate creativity and resourcefulness.

Demonstrating Workplace Readiness Skills: Professional Knowledge and Skills
8   Demonstrate effective speaking and listening skills.
9   Demonstrate effective reading and writing skills.
10   Demonstrate critical-thinking and problem-solving skills.
11   Demonstrate healthy behaviors and safety skills.
12   Demonstrate an understanding of workplace organizations, systems, and climates.
13   Demonstrate lifelong-learning skills.
14   Demonstrate job-acquisition and advancement skills.
15   Demonstrate time-, task-, and resource-management skills.
16   Demonstrate job-specific mathematics skills.
17   Demonstrate customer-service skills.

Demonstrating Workplace Readiness Skills: Technology Knowledge and Skills
18   Demonstrate proficiency with technologies common to a specific occupation.
19   Demonstrate information technology skills.
20   Demonstrate an understanding of Internet use and security issues.
21   Demonstrate telecommunications skills.

Examining All Aspects of an Industry
22   Examine aspects of planning within an industry/organization.
23   Examine aspects of management within an industry/organization.
24   Examine aspects of financial responsibility within an industry/organization.
25   Examine technical and production skills required of workers within an industry/organization.
26   Examine principles of technology that underlie an industry/organization.
27   Examine labor issues related to an industry/organization.
28   Examine community issues related to an industry/organization.
29   Examine health, safety, and environmental issues related to an industry/organization.

Addressing Elements of Student Life
30   Identify the purposes and goals of the student organization.
31   Explain the benefits and responsibilities of membership in the student organization as a student and in professional/civic organizations as an adult.
32   Demonstrate leadership skills through participation in student organization activities, such as meetings, programs, and projects.
33   Identify Internet safety issues and procedures for complying with acceptable use standards.

Applying Basic Construction Safety Standards (Core Safety)
34   Comply with federal, state, and local safety legal requirements, including OSHA, VOSHA, and EPA.
35   Identify personal protective equipment (PPE) requirements.
36   Inspect and maintain a safe working environment.
37   Explain safe working practices around electrical hazards.
38   Identify emergency first aid procedures.
39   Identify the types of fires and the methods used to extinguish them.
40   Inspect course-specific hand and power tools to visually identify defects.
41   Demonstrate lifting and carrying techniques.

42   Demonstrate safe laddering techniques.
43   Demonstrate safe scaffolding techniques.
44   Report personal injuries, environmental, and equipment safety violations to the appropriate authority.
45   Pass a safety exam for shop/site safety and specific tool use.
46   Identify the responsibilities and personal characteristics of a professional carpenter.
47   Research local and regional opportunities in the construction industry.
48   Describe the interrelationship among professional entities common to the construction industry.

Focusing on the Carpentry Profession
49   Communicate verbally and in writing, using construction terminology.
50   Identify communication technology and hand signals common to the construction site.
51   Measure materials, using a standard measuring device.

Using Hand and Power Tools
52   Identify the basic hand tools and commonly used power tools used in carpentry.
53   Maintain hand and power tools.
54   Describe the safe use of nail guns.

Interpreting Blueprints
55   Correlate information on blueprints to actual locations on the print.
56   Interpret drawing dimensions.
57   Describe the importance of the Virginia Unified Statewide Building Code (USBC), what it governs, and how to use it as a reference.

Identifying Basic Rigging Procedures
58   Identify the use of slings and common rigging hardware.
59   Identify the basic inspection techniques and rejection criteria used for slings and hardware.
60   Identify the basic hitch configurations and their proper connections.
61   Identify basic load-handling safety practices.
62   Demonstrate American National Standards Institute (ANSI) hand signals.

Assembling and Fastening Components
63   Identify nailing schedules for selected materials, according to local building codes.

Estimating and Selecting Materials
64   Determine materials from a blueprint.
65   Estimate labor and material cost.
66   Determine the proper use of materials.

Building and Installing Foundations and Forms
67   Set up a builder's level and a laser level.
68   Establish elevation points from a benchmark.
69   Install batter boards.
70   Identify types of footings.
71   Construct and align the foundation wall and wall forms to include pilasters and beam pockets.
72   Describe wall-framing techniques (e.g., block, poured) used in masonry construction.
73   Describe the installation of window and door jambs in masonry openings.
74   Describe form maintenance.

Framing a Floor
75   Install the sill plate.
76   Install a solid or composite wood beam/girder.
77   Install the lally column (i.e., basement pole).
78   Assemble floor framing detail on the sill plate.
79   Assemble floor joists.
80   Frame the floor opening.
81   Install floor joists.
82   Install bridging and blocking.
83   Install subfloor sheathing.

84   Select subfloor framing fasteners and adhesives.

Framing Walls

85   Lay out the floor deck for walls.
86   Lay out stud spacing on wall plates.
87   Cut and assemble studs, headers, jacks, rough sills, and cripples.
88   Assemble the corner and tee posts.
89   Assemble the header.
90   Frame the door opening.
91   Frame the window opening.
92   Assemble wall sections, including metal studs.
93   Install the double top plate (i.e., cap plate).
94   Install wall blocking (i.e., backing).
95   Describe the procedures and requirements for installing fire stops.
96   Install a corner brace.
97   Install exterior wall sheathing.
98   Raise a wall.

Framing a Ceiling

99   Lay out ceiling framing detail on the top wall plate.
100   Cut ceiling joists.
101   Install the ceiling joists.
102   Frame the ceiling opening.
103   Install a strongback (i.e., stiffener or catwalk).

Framing a Roof

104   Lay out roof framing detail on the cap plate.
105   Lay out the common, header, and cripple rafters.
106   Lay out a common rafter as a pattern.
107   Reproduce common rafters from a pattern.
108   Install the ridgeboard.
109   Frame the roof opening.
110   Install common rafters.
111   Frame a gable end.
112   Frame a blind valley (i.e., overlay valley).
113   Frame a gable dormer.
114   Frame a shed dormer.
115   Install the collar beams (i.e., rafter ties).
116   Install the purlins.
117   Install roof sheathing.
118   Frame a chimney saddle (i.e., cricket).

Installing Trusses

119   Lay out a truss installation.
120   Describe the safe selection, setting, and anchoring of trusses by hand or by crane.
121   Brace the roof assembly.
122   Frame an opening in the roof assembly.

Installing Roofing

123   Install roof underlayment.
124   Install valley flashing.
125   Install 3-tab composite shingles.
126   Install the ridge cap.
127   Install composite shingles in a valley.
128   Install composite shingles around the roof opening.
129   Identify attic area ventilators.

Constructing and Installing Straight (i.e., Basic) Stairs
130   Calculate the rise and run for stairs.
131   Lay out a straight-run stair stringer.
132   Cut the stair components.
133   Construct the unfinished stair unit.

Installing Exterior Doors and Windows
134   Install prehung exterior door units.
135   Identify types of exterior doors.
136   Identify types of interior doors.
137   Install the garage door and jamb.
138   Identify types of windows.
139   Install new-construction windows.

Framing Decks and Porches
140   Install footings.
141   Identify superstructure of attachment.
142   Install ledger board, fasteners, wind bracing, joist hangers, and flashing.
143   Install posts.
144   Install a solid or composite wood beam/girder.
145   Install the deck joist.
146   Install decking material.
147   Install railings.
148   Identify types of decking materials.

Installing Exterior Finishes
149   Construct a box and a rake cornice.
150   Install a fascia.
151   Install a soffit.
152   Install a corner board for siding.
153   Install siding and accompanying accessories.

Installing Interior Finishes
154   Install gypsum board.
155   Install paneling and trim.
156   Install shelving.
157   Install baseboard.
158   Install ceiling molding.
159   Case an interior opening.
160   Install an interior door jamb.
161   Install a prehung interior door unit.
162   Install a sliding, bi-fold, swinging, or pocket door.
163   Install a cylinder lockset.
164   Install weather stripping.
165   Construct open shelving.

Notice of Non-Discrimination Policy

Virginia Beach City Public Schools does not discriminate on the basis of race, color, religion, national origin, sex, sexual orientation/gender identity, pregnancy, childbirth or related medical condition, disability, marital status, age, genetic information or veteran status in its programs and activities and provides equal access to the Boy Scouts and other designated youth groups. School Board policies and regulations (including, but not limited to, Policies 2-33, 4-4, 5-7, 5-19, 5-20, 5-44, 6-7, 6-33, 7-48, 7-49, 7-57 and Regulations 2-33.1, 4-4.1, 4-4.2, 4-4.3, 4-6.1, 5-44.1, 7-11.1, 7-17.1 and 7-57.1) provide equal access to courses, programs, counseling services, physical education and athletic, vocational education, instructional materials and extracurricular activities.

To seek resolution of grievances resulting from alleged discrimination or to report violations of these policies, please contact the Title VI/Title IX Coordinator/Director of Student Leadership at
(757) 263-2020, 1413 Laskin Road, Virginia Beach, Virginia, 23451 (for student complaints) or the Section 504/ADA Coordinator/Chief Human Resources Officer at (757) 263-1133, 2512 George Mason Drive, Municipal Center, Building 6, Virginia Beach, Virginia, 23456 (for employees or other citizens). Concerns about the application of Section 504 of the Rehabilitation Act should be addressed to the Section 504 Coordinator/ Executive Director of Student Support Services at (757) 263-1980, 2512 George Mason Drive, Virginia Beach, Virginia, 23456 or the Section 504 Coordinator at the student's school. For students who are eligible or suspected of being eligible for special education or related services under IDEA, please contact the Office of Programs for Exceptional Children at (757) 263-2400, Laskin Road Annex, 1413 Laskin Road, Virginia Beach, Virginia, 23451.

Alternative formats of this publication which may include taped, Braille, or large print materials are available upon request for individuals with disabilities. Call or write The Department of Teaching and Learning, Virginia Beach City Public Schools, 2512 George Mason Drive, P.O. Box 6038, Virginia Beach, VA 23456-0038. Telephone 263-1070 (voice); fax 263-1424; 263-1240 (TDD) or email at Brandon.Martin@vbschools.com.

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VIRGINIA BEACH CITY PUBLIC SCHOOLS
CHARTING THE COURSE

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