CareerClusters™ PATHWAYS TO COLLEGE & CAREER READINESS
Architecture & Construction

Learning that works for Colorado CTE®

Colorado CTE Course – Scope and Sequence

Course Name	Woodworking Technology III	Course Details	Credit = 1.0 Prerequisite: Woodworking Technology II CTE Credential: CTE Architecture and Construction
		Course = 0.50 Carnegie Unit Credit	
Course Description	Woodworking Technology III provides continuing instruction in woodworking with a blend of historic and modern technology skills. This course includes in-depth instruction of hand tools, power tools, custom made tools, advanced woodworking techniques, drafting and wood science. Prerequisite: Woodworking Technology II		
Note:	This is a suggested scope and sequence for the course content. The content will work with any textbook or instructional resource. If locally adapted, make sure all essential knowledge and skills are covered.		
SCED Identification #	17006	Schedule calculation based on 60 calendar days of a 90-day semester. Scope and sequence allows for additional time for guest speakers, student presentations, field trips, remediation, or other content topics.	

All courses taught in an approved CTE program must include Essential Skills embedded into the course content. The Essential Skills Framework for this course can be found at https://www.cde.state.co.us/standardsandinstruction/essentialskills

Instructional Unit Topic	Suggested Length of Instruction	CTE or Academic Standard Alignment	Competency / Performance Indicator	Outcome / Measurement	CTSO Integration
Safety and Employability Skills		Understand the cabinetmaking industry, and health and safety hazards and safe practices. Demonstrate professional standards/employability skills as required by business and industry.	The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to: (A) identify employment opportunities, including entrepreneurship and preparation requirements, for mill and cabinetmaking; (B) demonstrate an understanding of group	Demonstrate employability skills including: • Demonstrate appropriate use of Personal Protective Equipment. • Demonstrate compliance with OSHA standards. • Locate and apply SDS (MSDS) information. • Recognize and mitigate hazardous conditions; and use guards and shielding when operating equipment.	

			participation and leadership related to citizenship and career preparation; (C) identify employers' expectations for appropriate work habits; (D) apply the competencies related to resources, information, systems, and technology in appropriate settings and situations; and (E) demonstrate knowledge of the concepts and skills related to health and safety in the workplace, as specified by appropriate governmental regulations. The student relates core academic skills to the requirements of mill and cabinetmaking. The student is expected to: (A) demonstrate effective verbal and written communication skills with individuals from varied cultures, including fellow workers,	Building on techniques practiced in the introductory and intermediate woodworking courses, continue to measure, record, and use measurements to create drawings of increasingly complex objects and layouts. Provide customer drawing samples to generate customer estimates and prepare work orders.	

			managers, and customers; (B) complete work orders and related paperwork; (C) estimate supplies, materials, and labor costs for work orders; (D) apply the principles of mathematics for accurate standard and metric measurements; and (E) read and interpret appropriate blueprints, drawings, charts, and diagrams.		
Design and Layout		Demonstrate competence in planning, design, layout, and technical drawing interpretation for practical use in cabinetmaking and millworking. Apply advanced design and layout procedures.	Develop advanced design and layout skills. Student is expected to: (A) Interpret and apply information from woodworking drawings; (B) apply architectural standards; (C) apply design elements: shapes, textures, lines, and colors	Develop a project plan and use the design process to create a solution for moderately complex problem sets, utilizing both simple three-dimensional modeling techniques and detailed technical two-dimensional and three-dimensional scale drawings. Prepare a persuasive narrative to justify the design, describing the constraints of the design and defending how the design solves the identified	

			to create functional and attractive cabinets, furniture, and millwork; (D) apply principles of design, harmony, repetitions, balance, and proportion to create functional and attractive cabinets, furniture, and millwork; and (E) apply knowledge of digital design technology to create a pictorial and working drawing.	problem(s). At the completion of the design process, publish the narrative and design and present the design to an audience, receive feedback, and critique the designs of other classmates.	
Wood, Laminates and Veneers		Identify wood products and materials used in the furniture and cabinetmaking industry and describe their characteristics and uses. Compare and contrast the advantages and disadvantages of using laminates verses using veneers	Apply knowledge of wood products and materials used in the furniture and cabinetmaking industry. Student is expected to: (A) define the difference between a hardwood and softwood; (B) identify several different species of hardwood and		

			their characteristics that are common to the cabinetmaking and millwork industry; (C) identify several different species of softwood and their characteristics that are common to the cabinetmaking and millwork industry; (D) identify common defects found in wood and list possible solutions; (E) identify and be able to differentiate panel products and their uses in the cabinetmaking industry; (F) describe the cutting and handling techniques used for sheet goods; (G) compare and contrast the advantages and		

			disadvantages of sheet goods versus solid wood stock; (H) identify standard sizes and grades of various laminates; (I) describe how the expansion and contraction of solid wood affects the design of joinery used in furniture and cabinet construction; (J) identify the proper adhesive required for applying laminate; (K) identify standard sizes and grades of various veneers; (L) identify the proper adhesive(s) required for applying veneers; (M) identify the different types of pattern matching in veneers; (N) select appropriate		

			cabinetmaking hardware.		
Woodworking Tools		Demonstrate proper selection and use of woodworking tools. Apply advanced use of hand tools. Apply advanced use of stationary power tools.	Student uses and applies knowledge of advanced woodworking tools. Student is expected to: (A) demonstrate sharpening skills; (B) demonstrate advanced hand tool use; (C) demonstrate hand tool maintenance; (D) apply sawing tools; (E) apply surfacing tools; (F) apply fastening and assembly tools; (G) apply the use of jigs and fixtures; (H) demonstrate basic maintenance; and (I) apply advanced setup techniques.		
Finishes		Utilize appropriate abrasives to prepare a project for a specific finish	Apply abrasive grits and advanced finishing processes. Student is expected to:		

			(A) select the proper abrasive for shaping and smoothing materials; (B) select the proper grit sizes and sequences for shaping and smoothing operations; (C) demonstrate proper selection, application, and cleaning methods for various types of filler materials; and (D) prepare a surface for finishing. Understand finishes and when to apply paint, stains, sealers, varnishes, and catalyzed finishes, including water- and oil-based finishes. Student is expected to: (A) demonstrate proper selection and application methods of different types of stains for a specific application;		

			(B) demonstrate cleaning procedure for various types of stains; (C) select the proper type of sealer and finish coat for a specific application; (D) demonstrate proper application methods for different types of sealers and finish coats; (E) demonstrate cleaning procedures for various types of sealer and finish coats; and (F) apply a suitable finish to a specific cabinet or millwork project.		
		Apply advanced cabinet construction and assembly techniques.	Understand and apply advanced woodworking techniques for cabinet construction. Student is expected to: (A) demonstrate a working knowledge of joinery,	Demonstrate competence in various construction processes in the cabinetmaking, furniture making, and millworking industries: • Square and surface a board to a specific size.	

			fasteners, and adhesives; (B) define the purposes for metallic fasteners in furniture and cabinetmaking; (C) select the proper metallic fasteners for specific applications; (D) demonstrate the proper use of metallic fasteners for specific applications; (E) compare and contrast joints commonly used in the cabinetmaking and millworking industries (i.e., strength, appearance, and ease of construction); (F) determine the appropriate application of a variety of joinery techniques, including dowels, biscuits, pocket holes, and mortise and tenon;	• Demonstrate common case construction. • Demonstrate common frame and panel construction. • Construct a case with a face frame using appropriate construction techniques. • Construct a frameless case using appropriate construction techniques. • Construct a cabinet drawer using appropriate construction techniques. • Construct a cabinet door using appropriate construction techniques. • Demonstrate the use of a jig, template, or fixture in a production project. • Use appropriate methods and tools to check the accuracy of a project. • Demonstrate the use of a mass production technique (i.e., parts	

			(G) identify characteristics of adhesives that affect the assembly time, cure time, and strength of the product; (H) select the proper adhesive(s) to construct wood joints used in furniture or cabinets; (I) demonstrate initial assembly and dry clamping procedures; (J) demonstrate the proper use and application of adhesives; (K) demonstrate the proper cleanup procedures for specific adhesives; (L) select the correct type of wood joint used for a specific application and material; and (M) demonstrate the ability to construct a variety of wood joints (i.e. butt,	duplication and assembly processes). • Lay out, install, and adjust the appropriate drawer hardware to include drawer slides and pulls. • Lay out, install, and adjust the appropriate door hardware to include European and standard hinges.	

			miter, compound miter, half lap, mortise and tenon).		
Career Development		Integrate multiple sources of career information from diverse formats to make informed career decisions, solve problems, and manage personal career plans.	Student is expected to: (A) understand the importance of creating a portfolio for employment purposes; (B) understand the advanced education and training options that align with their career goals and objectives; (C) understand the employability skills necessary for entry-level and advancing employment; and (D) understand credentials and certifications that are valued by the industry	Update materials from coursework to add to the student's portfolio. Continually reflect on coursework experiences and revise and refine the career plan generated in the introductory course. Include written descriptions of drawing types and learning outcomes, as well as photographs of work.	Updates to ICAP SkillsUSA Cabinetmaking Competition
