

Ganado Unified School District #20

(Construction Technologies I, II, III)

PACING Guide SY 2022-2023

Time Line & Resources <small>(Identify textbook, page number or website link & etc.)</small>	AZ College and Career Readiness Standard	Essential Question (HESS Matrix)	Learning Goal	Vocabulary (Content/Academic)
First Year (Construction Technologies I)				
<p>First Unit: Job Site/Shop Safety (NCEER) (OSHA 10)</p> <p>Second Unit: Tool Safety (Project Based)</p> <p>Third Unit: CONSTRUCTION MATH</p> <p>NCCER CONCENTRATOR</p> <p>OSHA-10</p> <p>Timeline will be from August 01, 2022 through May 24, 2023 Core Curriculum Introductory Craft Skills</p>	<p>STANDARD 1.0 - MAINTAIN A SAFE WORK ENVIRONMENT</p> <p>STANDARD 2.0 - OPERATE HAND AND POWER TOOLS/EQUIPMENT</p> <p>STANDARD 3.0 - USE PLANS, SPECIFICATIONS, AND CODES</p> <p>STANDARD 4.0 - LAY OUT BUILDING LINES</p> <p>STANDARD 5.0 - PERFORM CONCRETE/MASONRY WORK</p> <p>STANDARD 6.0 - LAY OUT AND INSTALL FLOOR SYSTEMS</p> <p>STANDARD 13.0 - ASSEMBLE PIPING, WASTE, AND VENT DISTRIBUTION SYSTEMS</p> <p>EMPLOYABILITY SKILLS 1.0 - COMPLEX COMMUNICATION: EMPLOYS COMPLEX COMMUNICATION* SKILLS IN A MANNER THAT ADDS TO ORGANIZATIONAL PRODUCTIVITY</p>	<p>How can we keep the Wood Shop a safe environment?</p> <p>What is one example of appropriate PPE?</p> <p>Describe the risks and dangers of tools and equipment</p>	<p>Students will be able to:</p> <ul style="list-style-type: none"> Explain the content and the purpose of SDSs (Safety Data Sheet) Use basic PPE appropriate for job Explain types of fires & appropriate use of fire extinguishers Describe situations requiring first-aid & emergency care Maintain worksite safety & Housekeeping Recognize correct procedures for lockout/tagout Identify & inspect hand tools 	<ul style="list-style-type: none"> Safety Data Sheet PPE Safety Goggle Hard Hats Gloves Safety Vest Steel Toe Boots Lightning Lockout/Tag-out Scale Metric Tape Measure Stakes String Line Line Level Studs 2x4

	<p>EMPLOYABILITY SKILLS 4.0 - PROFESSIONALISM: CONDUCTS ONESELF IN A PROFESSIONAL MANNER APPROPRIATE TO ORGANIZATIONAL EXPECTATIONS</p> <p>EMPLOYABILITY SKILLS 8.0- LEGAL AND ETHICAL PRACTICES: OBSERVES LAWS, RULES AND ETHICAL PRACTICES IN THE WORKPLACE</p>		<ul style="list-style-type: none"> • Identify & inspect portable power tools & extension cords • Perform measurements & calculations 	<ul style="list-style-type: none"> • Extension • Cut • Dimensions • Plot • Topography • Bench Mark • Area=LxW • Conversion
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Second Year (Construction Technologies II)

<p>Fourth Unit: Blueprints</p> <p>Fifth Unit: Lay Out Building Lines</p> <p>Sixth Unit: Concrete</p> <p>Seventh Unit: Wall Framing</p> <p>NCCER CONCENTRATOR</p> <p>OSHA-10</p> <p>Timeline will be from August 01, 2022 through May 24, 2023 Core Curriculum Introductory Craft Skills</p>	<p>STANDARD 1.0 - MAINTAIN A SAFE WORK ENVIRONMENT</p> <p>STANDARD 3.0 - USE PLANS, SPECIFICATIONS, AND CODES</p> <p>STANDARD 4.0 - LAY OUT BUILDING LINES</p> <p>STANDARD 5.0 - PERFORM CONCRETE/MASONRY WORK</p> <p>STANDARD 7.0 - DEMONSTRATE WALL AND CEILING FRAMING</p> <p>EMPLOYABILITY SKILLS 3.0 - THINKING AND INNOVATION: INTEGRATES EXPERTISE IN</p> <p>TECHNICAL KNOWLEDGE AND SKILLS WITH THINKING AND</p> <p>REASONING STRATEGIES TO CREATE, INNOVATE, AND DEVISE SOLUTIONS</p> <p>EMPLOYABILITY SKILLS 4.0 - PROFESSIONALISM: CONDUCTS ONESELF IN A PROFESSIONAL MANNER APPROPRIATE TO ORGANIZATIONAL EXPECTATIONS</p> <p>EMPLOYABILITY SKILLS 5.0- INITIATIVE AND SELF-DIRECTION: EXERCISES INITIATIVE AND SELF-DIRECTION IN THE WORKPLACE</p>	<p>How can we keep the Wood Shop a safe environment?</p> <p>What is one example of appropriate PPE?</p> <p>Describe the risks and dangers of tools and equipment</p>	<p>Students will be able to:</p> <ul style="list-style-type: none"> • Identify terms relating to plans & drawings • Identify symbols relating to plans & drawings • Identify plans & drawing scales • Recognize notes & material schedules • Relate information on plans & drawing to actual locations • Explain building lines & recognize trade-specific layout • Identify components of floor systems • Explain ceiling components & accessories for a frame building • Layout & construct floor systems 	<ul style="list-style-type: none"> • Tape Measure • Laser • Total Station • Theodolite • Cross Section • Differential • Mass • Horizontal Ladder • Extension Ladder • Lanyard • Hoist • Mason Line • Line Block • Line Trigs • Marking Crayons • Margin Trowels • Sled Runner • Soft Brush • Brick Hammer • Mason Level
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	EMPLOYABILITY SKILLS 8.0 - LEGAL AND ETHICAL PRACTICES: OBSERVES LAWS, RULES AND ETHICAL PRACTICES IN THE WORKPLACE			<ul style="list-style-type: none"> • Wire Cutter • Saw Wrench • Calculator • Folding Rule
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Second Year (Construction Technologies II)

<p>Eighth Unit: Brick and Block</p> <p>Ninth Unit: Door/Window Install</p> <p>Tenth Unit: Exterior Finishes</p> <p>NCCER CONCENTRATOR</p> <p>OSHA-10</p> <p>Timeline will be from August 01, 2022 through May 24, 2023 Core Curriculum Introductory Craft Skills</p>	<p>STANDARD 1.0 - MAINTAIN A SAFE WORK ENVIRONMENT</p> <p>STANDARD 5.0 - PERFORM CONCRETE/MASONRY WORK</p> <p>STANDARD 10.0 - APPLY EXTERIOR FINISHES</p> <p>STANDARD 11.0 - INSTALL DOORS AND WINDOWS</p> <p>EMPLOYABILITY SKILLS 2.0-COLLABORATION: COLLABORATES, IN PERSON AND VIRTUALLY, TO COMPLETE THE TASKS AIMED AT ORGANIZATIONAL GOALS</p> <p>EMPLOYABILITY SKILLS 5.0-INITIATIVE AND SELF-DIRECTION: EXERCISES INITIATIVE AND SELF-DIRECTION IN THE WORKPLACE</p>	<p>How can we keep the Wood Shop a safe environment?</p> <p>What is one example of appropriate PPE?</p> <p>Describe the risks and dangers of tools and equipment</p>	<p>Students will be able to:</p> <ul style="list-style-type: none"> • Describe the use & care of standard measuring instruments • Explain a builder’s level or transit & differentiate leveling procedures to determine site & building elevations • Review the history & uses of concrete & tools • Identify finishing tools • Describe the components of concrete • Describe types of finishes • Prepare, place, & finish concrete • Use a level to evaluate masonry work • Lay brick/block to specifications • Mortar specifications 	<ul style="list-style-type: none"> • Concrete masonry unit • Bond Beam • Rebar • Mortar • Grout • Tie wire • Saddle • Line Level • Footings • Flatwork • Post-tensions • Walls • Tilt-ups • Bull float • Darby float • Formwork • Aggregates • Grading • Wire mesh • Broom • Troweled • Stamped • Mag
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Third Year (Construction Technologies III)

<p>Eleventh Unit: Electrical</p> <p>Twelfth Unit: HVAC</p> <p>Thirteenth Unit: Interior Finishes</p> <p>First Unit: Floor Layout and Installation</p> <p>Second Unit: Roof Framing</p> <p>Third Unit: Plumbing 101</p> <p>Fifth Unit: Trim and Stairs</p> <p>NCCER CONCENTRATOR</p> <p>OSHA-10</p> <p>Timeline will be from August 01, 2022 through May 24, 2023 Core Curriculum Introductory Craft Skills</p>	<p>STANDARD 9.0 - IDENTIFY CONDITIONED LIVING SYSTEMS</p> <p>STANDARD 14.0 - INSTALL ELECTRICAL COMPONENT/SYSTEM(S) TO CURRENT INDUSTRY CODE</p> <p>STANDARD 15.0 - INSTALL INTERIOR WALL AND CEILING FINISH</p> <p>EMPLOYABILITY SKILLS 3.0 - THINKING AND INNOVATION: INTEGRATES EXPERTISE IN TECHNICAL KNOWLEDGE AND SKILLS WITH THINKING AND REASONING STRATEGIES TO CREATE, INNOVATE, AND DEVISE SOLUTIONS</p>	<p>How can we keep the Wood Shop a safe environment?</p> <p>What is one example of appropriate PPE?</p> <p>Describe the risks and dangers of tools and equipment</p>	<p>Students will be able to:</p> <ul style="list-style-type: none"> • Identify types & use of thermal insulation, vapor barriers, R-values, & U-values • Describe the function of a HVAC system • Recognize basic electrical theory • Identify electrical materials • Define conductor properties • Rough-in electrical enclosures • Recognize various types of electrical systems • Ohms Law 	<ul style="list-style-type: none"> • Solar electricity • Solar water heating • Cocoon insulation systems • Gray water systems • Ohm's Law • Enclosure • Devices • Overcurrent protection • Raceways • Aluminum • Copper • Color code
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