

NORTH CAROLINA CAREER AND TECHNICAL EDUCATION STANDARDS

Trade, Technology, Engineering, and Industrial Education

Grade: Grade 9 - 12

Course: Construction Core **Updated**

NCCTE.2020.IC00 - Construction Core

NCCTE.2020.IC00.01.00 - Understand Basis Safety (00101-15).

NCCTE.2020.IC00.02.00 - Understand Introduction to Construction Math (00102-15).

NCCTE.2020.IC00.03.00 - Understand Introduction to Hand Tools (00103-15).

NCCTE.2020.IC00.04.00 - Understand Introduction to Power Tools (00104-15).

NCCTE.2020.IC00.05.00 - Understand Introduction to Construction Drawings - Blueprints (00105-15).

NCCTE.2020.IC00.06.00 - Apply Material Handling Procedures (00109-15).

NCCTE.2020.IC00.07.00 - Understand Basic Communication Skills (00107-15).

NCCTE.2020.IC00.08.00 - Understand Basic Employability Skills (00108-15).

NCCTE.2020.IC00.09.00 - Understand Your Role in the Green Environment (Module 70101-15).

Course: Masonry I

NCCTE.2019.IC11 - Masonry I

NCCTE.2019.IC11.01.00 - Understand the Introduction to Masonry (Module 28101-13)

NCCTE.2019.IC11.02.00 - Apply Masonry Safety Standards (Module 28106-13)

NCCTE.2019.IC11.03.00 - Apply Masonry Tools and Equipment (Module 28102-13)

NCCTE.2019.IC11.04.00 - Understand Measurement, Drawings, and Specifications (Module 20103-13)

NCCTE.2019.IC11.05.00 - Apply Mortar Skills and Techniques (Module 28104-13)

NCCTE.2019.IC11.06.00 - Apply Masonry Units and Installation Techniques (Module 28105-13)

Course: Masonry II **Updated**

NCCTE.2020.IC12 - Masonry II

NCCTE.2020.IC12.01.00 - Understand Residential Plans and Drawing Interpretation (Module 28201-14).

NCCTE.2020.IC12.02.00 - Understand Residential Masonry (Module 28202-14).

NCCTE.2020.IC12.03.00 - Apply Reinforced Masonry (Module 28203-14).

NCCTE.2020.IC12.04.00 - Apply Masonry Openings and Metal Work (Module 28204-14).

Course: Masonry III **Updated**

NCCTE.2020.IC13 - Masonry III

NCCTE.2020.IC13.01.00 - Understand Introduction to Weatherization (Module 59101-10).

NCCTE.2020.IC13.02.00 - Apply Advanced Laying Techniques (Module 28205-14).

NCCTE.2020.IC13.03.00 - Apply the Effects of Climate on Masonry Procedures (Module 28206-14).

NCCTE.2020.IC13.04.00 - Apply Construction Inspection and Quality Control Processes (Module 28207-14).



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Course: Carpentry I

NCCTE.2019.IC21 - Carpentry I

NCCTE.2019.IC21.01.00 - Understand Orientation to the Trade (Module 27101-13)

NCCTE.2019.IC21.02.00 - Understand Building Materials, Fasteners and Adhesives (Module 27102-13)

NCCTE.2019.IC21.03.00 - Apply Hand and Power Tools (Module 27103-13)

NCCTE.2019.IC21.04.00 - Understand Introduction to Construction Drawings, Specifications, and Layout (Module 27104-13)

NCCTE.2019.IC21.05.00 - Apply Floor Systems (27105-13)

NCCTE.2019.IC21.06.00 - Apply Wall Systems (Module 27111-13)

NCCTE.2019.IC21.07.00 - Apply Basic Stair Layout (Module 27110-13)

Course: Carpentry II Updated

NCCTE.2020.IC22 - Carpentry II

NCCTE.2020.IC22.01.00 - Apply Ceiling Joist and Roof Framing (Module 27112-13).

NCCTE.2020.IC22.02.00 - Apply Roofing Applications: Residential (Module 27202-13).

NCCTE.2020.IC22.03.00 - Understand Thermal and Moisture Protection (Module 27203-13).

NCCTE.2020.IC22.04.00 - Apply Introduction to Building Envelope Systems (Module 27109-13).

NCCTE.2020.IC22.05.00 - Apply Exterior Finishing: Residential (Module 27204-13).

Course: Carpentry III Updated

NCCTE.2020.IC23 - Carpentry III

NCCTE.2020.IC23.01.00 - Understand Introduction to Weatherization (Module 59101-10).

NCCTE.2020.IC23.02.00 - Understand the use of Commercial Drawings (Module 27201-13).

NCCTE.2020.IC23.03.00 - Apply Cold-Formed Steel Framing (Module 27205-13).

NCCTE.2020.IC23.04.00 - Apply Drywall Installation (Module 27206-13).

NCCTE.2020.IC23.05.00 - Apply Drywall Finishing (Module 27207-13).

NCCTE.2020.IC23.06.00 - Apply Doors and Door Hardware (Module 27208-13).

NCCTE.2020.IC23.07.00 - Apply Window, Door, Floor, and Ceiling Trim (Module 27210-13).

Course: Electrical Trades I Updated

NCCTE.2020.IC41 - Electrical Trades I

NCCTE.2020.IC41.01.00 - Understand Orientation to the Electrical Trade. (Module 26101-17).

NCCTE.2020.IC41.02.00 - Understand Electrical Safety. (Module 26102-17).

NCCTE.2020.IC41.03.00 - Understand Introduction to Electrical Circuits. (Module 26103-17).

NCCTE.2020.IC41.04.00 - Understand Electrical Theory. (Module 26104-17).

NCCTE.2020.IC41.05.00 - Understand Introduction to the National Electric Code. (Module 26105-17).

NCCTE.2020.IC41.06.00 - Apply Device Boxes to Structure. (Module 26106-17).

NCCTE.2020.IC41.07.00 - Apply Hand Bending Techniques. (Module 26107-17).

NCCTE.2020.IC41.08.00 - Apply Raceways and Fittings to Structure. (Module 26108-17).



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Course: Electrical Trades II **Updated**

NCCTE.2020.IC42 - Electrical Trades II

- NCCTE.2020.IC42.01.00** - Understand Conductors and Cables. (Module 26109-17).
- NCCTE.2020.IC42.02.00** - Understand Basic Electrical Construction Drawings. (Module 26110-17).
- NCCTE.2020.IC42.03.00** - Understand Residential Electric Services. (Module 26111-17).
- NCCTE.2020.IC42.04.00** - Apply Electrical Test Equipment Usage. (Module 26112-17).
- NCCTE.2020.IC42.05.00** - Understand Alternating Current (A/C) Theory. (Module 26201-17).
- NCCTE.2020.IC42.06.00** - Apply Grounding and Bonding Techniques. (Module 26209-17).
- NCCTE.2020.IC42.07.00** - Understand Motors: Theory and Application. (Module 26202-17).
- NCCTE.2020.IC42.08.00** - Apply Electric Lighting to Structures. (Module 26203-17).

Course: Electrical Trades III **Updated**

NCCTE.2020.IC43 - Electrical Trades III

- NCCTE.2020.IC43.01.00** - Understand Introduction to Weatherization (Module 59101-10).
- NCCTE.2020.IC43.02.00** - Apply Conduit Bending Techniques. (Module 26204-17).
- NCCTE.2020.IC43.03.00** - Apply Pull and Junction Boxes to Structure. (Module 26205-17).
- NCCTE.2020.IC43.04.00** - Apply Conductor Installations. (Module 26206-17).
- NCCTE.2020.IC43.05.00** - Apply Cable Tray to Structure. (Module 26207-17).
- NCCTE.2020.IC43.06.00** - Apply Conductor Terminations and Splices. (Module 26208-17).
- NCCTE.2020.IC43.07.00** - Apply Circuit Breakers and Fuses. (Module 26210-14).
- NCCTE.2020.IC43.08.00** - Understand Control Systems and Fundamental Concepts. (Module 26211-17).

Course: Drafting I

NCCTE.IC61 - Drafting I

- NCCTE.IC61.01.00** - Understand Fundamental Concepts and Trends of Drafting.
 - NCCTE.IC61.01.01** - Understand BIM, and Rapid Prototyping.
 - NCCTE.IC61.01.02** - Understand Industrial Design, Sustainable Design, and LEED.
 - NCCTE.IC61.01.03** - Understand Career Options.
- NCCTE.IC61.02.00** - Understand the Ideation process. (big 6 in academia) (SUPPLEMENTAL)
- NCCTE.IC61.03.00** - Apply sketching skills and techniques. (Architectural & Engineering)
 - NCCTE.IC61.03.01** - Apply Rough sketching (lettering for clarity, uppercase caps).
 - NCCTE.IC61.03.02** - Apply 2D sketching - Single and Multi-view.
 - NCCTE.IC61.03.03** - Apply 3D sketching - Pictorials (isometric, oblique).
- NCCTE.IC61.04.00** - Apply CAD User Skills (with use of the following CAD software).
 - NCCTE.IC61.04.01** - Apply procedures for working with the User interface (navigation tools).
 - NCCTE.IC61.04.02** - Apply procedures for creating drawings (coordinates and draw tools). Review Geometric Shapes.
 - NCCTE.IC61.04.03** - Apply procedures for manipulating objects (grips, object selection, drawing aids).



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NCCTE.IC61.04.04 - Apply procedures for working with the drawing organization and inquiry commands (layers).

NCCTE.IC61.04.05 - Apply procedures for altering objects (modifying).

NCCTE.IC61.04.06 - Apply procedures for working with layouts (templates, viewports).

NCCTE.IC61.04.07 - Apply procedures for annotating the drawing (adding Text).

NCCTE.IC61.04.08 - Apply procedures for dimensioning.

NCCTE.IC61.04.09 - Apply procedures for hatching objects (Drawing enhancements).

NCCTE.IC61.04.10 - Apply procedures for working with reusable content (blocks).

NCCTE.IC61.04.11 - Apply procedures for creating Additional drawing objects (polylines splines ellipse).

NCCTE.IC61.04.12 - Apply procedures for plotting the drawing.

Course: Drafting II - Architectural **Updated**

NCCTE.2020.IC62 - Drafting II - Architectural

NCCTE.2020.IC62.01.00 - Understand Architectural Styles and Industry Terms.

NCCTE.2020.IC62.01.01 - Understand various architectural styles.

NCCTE.2020.IC62.01.02 - Understand terms related to selected styles of residential architecture and create a collection of illustrations or a presentation that demonstrates the various elements of residential styles.

NCCTE.2020.IC62.01.03 - Understand architectural industry terms.

NCCTE.2020.IC62.02.00 - Apply procedures to create Floor Plans.

NCCTE.2020.IC62.02.01 - Apply terms and definitions and accepted principles related to single-level residential space planning.

NCCTE.2020.IC62.02.02 - Apply residential door and window types, symbols for doors, windows and room identification.

NCCTE.2020.IC62.02.03 - Apply terms and definitions related to single-level residential space planning.

NCCTE.2020.IC62.02.04 - Apply accepted principles of single-view residential space planning.

NCCTE.2020.IC62.02.05 - Apply door and window types.

NCCTE.2020.IC62.02.06 - Apply floor plan symbols.

NCCTE.2020.IC62.02.07 - Apply procedures to draw a single-level residential floor plan using 3D CAD, BIM software, for example: Revit Architecture.

NCCTE.2020.IC62.02.08 - Apply procedures to annotate a single-level residential floor plan using 3D CAD, BIM software, for example: Revit Architecture.

NCCTE.2020.IC62.03.00 - Apply procedures to create Foundation plans and Levels of a Building.

NCCTE.2020.IC62.03.01 - Apply terminology related to common foundation plans.

NCCTE.2020.IC62.03.02 - Apply footing and foundation wall construction types.

NCCTE.2020.IC62.03.03 - Apply the purpose of a foundation plan and describe its features.

NCCTE.2020.IC62.03.04 - Apply concepts of wood sill and floor construction.



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NCCTE.2020.IC62.03.05 - Apply procedures to draw a foundation plan using 3D CAD, BIM software.

NCCTE.2020.IC62.04.00 - Apply procedures to create Simple Roof and Floor System Designs.

NCCTE.2020.IC62.04.01 - Understand terms and definitions related to roof plans.

NCCTE.2020.IC62.04.02 - Understand concepts of roof construction including roof types: gable, hip, roof slope.

NCCTE.2020.IC62.04.03 - Understand concepts of floor systems.

NCCTE.2020.IC62.04.04 - Apply procedures to draw roof and floor systems using 3D CAD, BIM software.

NCCTE.2020.IC62.05.00 - Apply procedures for drawing View types.

NCCTE.2020.IC62.05.01 - Apply terms and definitions related to construction drawing view types: Plan views, Section views, Elevation views, 3D Views, and Detail views.

NCCTE.2020.IC62.05.02 - Apply terms and definitions related to wall sections and details.

NCCTE.2020.IC62.05.03 - Apply concepts of wood frame wall construction.

NCCTE.2020.IC62.05.04 - Apply the purpose and features of a wall section, noting insulation and vapor barrier materials and construction.

NCCTE.2020.IC62.05.05 - Apply terms, purpose, features and definitions related to exterior elevations and building sections.

NCCTE.2020.IC62.05.06 - Apply procedures to draw typical wall sections using 3D CAD, BIM software.

NCCTE.2020.IC62.05.07 - Apply procedures to draw exterior elevations and building sections using 3D CAD, BIM software.

NCCTE.2020.IC62.06.00 - Apply Procedures to Complete a Residential Construction Documents (CD) Set.

NCCTE.2020.IC62.06.01 - Apply key components/sheets needed, sheet numbering, naming conventions for a CD set.

NCCTE.2020.IC62.06.02 - Apply schedules and labels used in CD Set.

NCCTE.2020.IC62.06.03 - Apply CAD printing and set up.

NCCTE.2020.IC62.06.04 - Apply procedures to complete a residential Construction Documents Set using 3D CAD, BIM software.

Course: Drafting III - Architectural Updated

NCCTE.2020.IC63 - Drafting III - Architectural

NCCTE.2020.IC63.01.00 - Understand Foundation Design, Calculations and Construction.

NCCTE.2020.IC63.01.01 - Understand terms and definitions relating to foundation design, calculations and construction.

NCCTE.2020.IC63.01.02 - Understand use of footings, foundation walls, girders, piers, ventilation, and slab floor/foundations.

NCCTE.2020.IC63.02.00 - Apply Procedures to Create Basic Electrical Design Concepts.



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NCCTE.2020.IC63.02.01 - Apply terms and symbols used to indicate electrical fixtures in a residential design.

NCCTE.2020.IC63.02.02 - Apply the rules and standards for electrical fixture placement.

NCCTE.2020.IC63.02.03 - Apply the rules and standards for electrical fixture placement and create an electrical/lighting plan using 3D CAD software, such as Revit Architecture.

NCCTE.2020.IC63.03.00 - Apply Procedures to Create Stair/Railing Designs for Construction.

NCCTE.2020.IC63.03.01 - Apply terms and definitions relating to stair design and construction.

NCCTE.2020.IC63.03.02 - Apply the parts and standards used to construct various stair system and types (Straight, Curved, with landings and turns).

NCCTE.2020.IC63.03.03 - Apply the calculations for rise, run, total rise, total run, and floor cutout.

NCCTE.2020.IC63.03.04 - Apply typical railing design and construction for stairs, landings and decks.

NCCTE.2020.IC63.03.05 - Apply accepted procedures to draw plans for stair construction using 3D CAD software, such as Revit Architecture.

NCCTE.2020.IC63.04.00 - Apply Procedures to Create Advanced Kitchen and Bath Details.

NCCTE.2020.IC63.04.01 - Apply terms, concepts and elements related to kitchen and bath details and design.

NCCTE.2020.IC63.04.02 - Apply plans for kitchen cabinet drawings, standard sizes and configurations.

NCCTE.2020.IC63.04.03 - Apply procedures to draw enlarged detailed plans and interior elevations for kitchens and baths using 3D CAD software, such as Revit Architecture.

NCCTE.2020.IC63.05.00 - Apply Procedures to Create Multi-level Residential Floor Plans.

NCCTE.2020.IC63.05.01 - Understand terms, definitions and accepted principles related to 2-story or multi-level residential space planning.

NCCTE.2020.IC63.05.02 - Understand residential door and window types (review of Level II Arch).

NCCTE.2020.IC63.05.03 - Understand floor plan symbols for doors, windows and room identification.

NCCTE.2020.IC63.05.04 - Understand the steps in drawing, dimensioning, and annotating a 2 story or multi-level floor plan.

NCCTE.2020.IC63.05.05 - Apply procedures to design, draw and annotate a 2 story or multi-level residential floor plan, including foundation plan using 3D CAD, BIM software.

NCCTE.2020.IC63.06.00 - Apply procedures to create a Site Development Plan.

NCCTE.2020.IC63.06.01 - Apply terms related to site development.

NCCTE.2020.IC63.06.02 - Apply factors to be considered when developing a site for residential construction.

NCCTE.2020.IC63.06.03 - Apply the lines, symbols, and features found on site plans.

NCCTE.2020.IC63.06.04 - Apply how to develop a site plan drawing.

NCCTE.2020.IC63.06.05 - Apply accepted procedures to draw a site plan for a residential



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structure using 3D CAD software, such as Revit Architecture.

NCCTE.2020.IC63.07.00 - Apply Procedures and Construction Techniques to Create a Small Commercial Building Design.

NCCTE.2020.IC63.07.01 - Apply various types of small commercial design projects.

NCCTE.2020.IC63.07.02 - Apply the different construction practices from residential to commercial; metal studs vs. wood construction, steel beams.

NCCTE.2020.IC63.07.03 - Apply commercial reflected ceiling plans, including lighting layout, electrical and fire protection symbols.

NCCTE.2020.IC63.07.04 - Apply Grid and column design and layout, labeling.

NCCTE.2020.IC63.07.05 - Apply multi-story stair design for commercial buildings.

NCCTE.2020.IC63.07.06 - Apply procedures to draw a small commercial building using 3D CAD software, such as Revit Architecture.

NCCTE.2020.IC63.08.00 - Apply Procedures to Create Rendering and Walkthroughs.

NCCTE.2020.IC63.08.01 - Apply the definition, purpose and techniques for a 3D rendering of a building.

NCCTE.2020.IC63.08.02 - Apply interior lighting and exterior solar effects on a building design.

NCCTE.2020.IC63.08.03 - Apply how camera angles affect perspective views of a building, interior and exterior.

NCCTE.2020.IC63.08.04 - Apply 3D building walkthroughs.

NCCTE.2020.IC63.08.05 - Apply CAD techniques to create a 3D rendering of an architectural model using 3D CAD software, such as Revit Architecture.

Course: Drone Technology | **New**

NCCTE.2020.ID11 - Drone Technology I

NCCTE.2020.ID11.01.00 - Understanding Drones.

NCCTE.2020.ID11.01.01 - Understand the history of Drones.

NCCTE.2020.ID11.01.02 - Understand careers in the drone industry.

NCCTE.2020.ID11.01.03 - Understand 21st century skills needed by professional in the drone industry.

NCCTE.2020.ID11.02.00 - Apply procedures to troubleshoot Drone hardware.

NCCTE.2020.ID11.02.01 - Understand the functions and relationship components that make up a drone.

NCCTE.2020.ID11.02.02 - Apply procedures to troubleshoot Drone hardware.

NCCTE.2020.ID11.03.00 - Understand the requirements for FAA 14 CFR Part 107 and NCDOT UAS Operator Permit.

NCCTE.2020.ID11.03.01 - Understand regulations concerning drone use.

NCCTE.2020.ID11.03.02 - Understand airspace classifications and operations requirements in the drone industry.

NCCTE.2020.ID11.03.03 - Understand weather related requirements concerning drone use.



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NCCTE.2020.ID11.03.04 - Understand loading and performance requirements in the drone industry.

NCCTE.2020.ID11.03.05 - Understand drone operations.

NCCTE.2020.ID11.03.06 - Understand NC UAS Drone Operator requirements.

NCCTE.2020.ID11.04.00 - Apply procedures needed for basic Drone flight.

NCCTE.2020.ID11.04.01 - Apply procedures for manual drone flight.

NCCTE.2020.ID11.04.02 - Understand drone autonomous flight.

NCCTE.2020.ID11.04.03 - Understand drone mapping software.

Course: Drone Technology II **New**

NCCTE.2020.ID12 - Drone Technology II

NCCTE.2020.ID12.01.00 - Understand entrepreneurship in the Drone Industry.

NCCTE.2020.ID12.02.00 - Apply procedures used in Drone Fleet Management.

NCCTE.2020.ID12.03.00 - Apply procedures used in Drone Simulated Environment.

NCCTE.2020.ID12.03.01 - Understand Visual Line of Sight Operations.

NCCTE.2020.ID12.03.02 - Apply procedures used in the Drone Flight Simulation.

NCCTE.2020.ID12.03.03 - Apply procedures used in the Drone Manual Flight Operations (construction, agriculture, public safety, and cinematography)

NCCTE.2020.ID12.04.00 - Apply procedures used to modify Drone Software.

NCCTE.2020.ID12.04.01 - Apply procedures for updating Drone firmware.

NCCTE.2020.ID12.04.02 - Apply procedures for using Drone Graphic User Interfaces (GUI).

NCCTE.2020.ID12.04.03 - Understanding Drone Software Development.

Course: HVAC/R I **New**

NCCTE.2020.IL55 - HVAC/R I

NCCTE.2020.IL55.01.00 - Understand Introduction to HVAC (NCCER Module 03101).

NCCTE.2020.IL55.02.00 - Apply Trade Mathematics (NCCER Module 03102).

NCCTE.2020.IL55.03.00 - Apply Basic Electricity (NCCER Module 03106).

NCCTE.2020.IL55.04.00 - Understand Introduction to Heating (NCCER Module 03108).

NCCTE.2020.IL55.05.00 - Understand Introduction to Cooling (NCCER Module 03107).

NCCTE.2020.IL55.06.00 - Understand Air Distribution Systems (NCCER Module 03109).

NCCTE.2020.IL55.07.00 - Apply Basic Copper and Plastic Piping Practices (NCCER Module 03103).

NCCTE.2020.IL55.08.00 - Apply Soldering and Brazing (NCCER Module 03104).

NCCTE.2020.IL55.09.00 - Apply Basic Carbon Steel Piping Practices (NCCER Module 03105).

Course: HVAC/R II **New**

NCCTE.2020.IL56 - HVAC/R II

NCCTE.2020.IL56.01.00 - Understand Alternating Current (NCCER Module 03206).

NCCTE.2020.IL56.02.00 - Understand Heat Pumps (NCCER Module 03211).

NCCTE.2020.IL56.03.00 - Apply Troubleshooting Heat Pumps (Module 03311).



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NCCTE.2020.IL56.04.00 - Apply Troubleshooting Cooling (Module 03210).

NCCTE.2020.IL56.05.00 - Apply Leak detection, Evacuation, Recovery and Recharging (NCCER Module 03205).

NCCTE.2020.IL56.06.00 - Apply Refrigerants and Oils (NCCER Module 03301).

Course: HVAC/R III **New**

NCCTE.2020.IL57 - HVAC/R III

NCCTE.2020.IL57.01.00 - Apply Sheet Metal Duct Systems (NCCER Module 03213).

NCCTE.2020.IL57.02.00 - Understand Compressors (NCCER Module (03302).

NCCTE.2020.IL57.03.00 - Apply Metering Devices (NCCER Module 03303).

NCCTE.2020.IL57.04.00 - Apply Control Circuit and Motor Troubleshooting (Module 03314).

NCCTE.2020.IL57.05.00 - Apply Troubleshooting Gas Heating (Module 03209).

NCCTE.2020.IL57.06.00 - Understand Chimneys, Vents, Flues (NCCER Module 03202).

NCCTE.2020.IL57.07.00 - Understand Introduction to Weatherization (Module 59101).

Course: Plumbing I **New**

NCCTE.2020.IL58 - Plumbing I

NCCTE.2020.IL58.01.00 - Understand Introduction to the Plumbing Profession (NCCER Module 02101).

NCCTE.2020.IL58.02.00 - Apply Plumbing Safety (NCCER Module 02102).

NCCTE.2020.IL58.03.00 - Apply Plumbing Tools (NCCER Module 02103).

NCCTE.2020.IL58.04.00 - Understand Introduction to Plumbing Math (NCCER Module 02104).

NCCTE.2020.IL58.05.00 - Understand Introduction to Plumbing Drawings (NCCER Module 02105).

NCCTE.2020.IL58.06.00 - Apply Plastic Pipe and Fittings (NCCER Module 02106).

NCCTE.2020.IL58.07.00 - Apply Copper Tube and Fittings (NCCER Module 02107).

NCCTE.2020.IL58.08.00 - Apply Cast-Iron Pipe and Fittings (NCCER Module 02108).

NCCTE.2020.IL58.09.00 - Apply Steel Pipe and Fittings (NCCER Module 02109).

NCCTE.2020.IL58.10.00 - Understand Introduction to Plumbing Fixtures (NCCER Module 02110).

Course: Plumbing II **New**

NCCTE.2020.IL59 - Plumbing II

NCCTE.2020.IL59.01.00 - Understand Introduction to DWV Systems (NCCER Module 02111).

NCCTE.2020.IL59.02.00 - Understand Introduction to Water Distribution Systems (NCCER Module 02112).

NCCTE.2020.IL59.03.00 - Apply Plumbing Math 2 (NCCER Module 02201).

NCCTE.2020.IL59.04.00 - Apply Reading Commercial Drawings (NCCER Module 02202).

NCCTE.2020.IL59.05.00 - Apply Structural Penetrations, Insulating, and Firestopping (NCCER Module 002203).

NCCTE.2020.IL59.06.00 - Apply Installing and Testing DWV Piping (NCCER Module 02204).

NCCTE.2020.IL59.07.00 - Apply Installing Roof, Floor, and Area Drains (NCCER Module 02205).



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NCCTE.2020.IL59.08.00 - Apply Types of Valves (NCCER Module 02206).

Course: Plumbing III **New**

NCCTE.2020.IL60 - Plumbing III

NCCTE.2020.IL60.01.00 - Apply Installing and Testing Water Supply Piping (NCCER Module 02207).

NCCTE.2020.IL60.02.00 - Apply Installing Fixtures and Valves (NCCER Module 02208).

NCCTE.2020.IL60.03.00 - Apply Installing Water Heaters (NCCER Module 02210).

NCCTE.2020.IL60.04.00 - Apply Basic Electricity (NCCER Module 02209).

NCCTE.2020.IL60.05.00 - Apply Fuel Gas Systems (NCCER Module 02211).

NCCTE.2020.IL60.06.00 - Understand Introduction to Weatherization (Module 59101).

Course: Advanced Manufacturing I **Updated**

NCCTE.2020.IM11 - Advanced Manufacturing I

NCCTE.2020.IM11.01.00 - Understand Safety Standards to Manufacturing Processes and Production (MSSC-M1).

NCCTE.2020.IM11.01.01 - Understand advanced manufacturing.

NCCTE.2020.IM11.01.02 - Understand communications used in advanced manufacturing.

NCCTE.2020.IM11.01.03 - Understand production teams.

NCCTE.2020.IM11.01.04 - Understand training & leadership needed in advanced manufacturing.

NCCTE.2020.IM11.01.05 - Understand safety organization.

NCCTE.2020.IM11.01.06 - Understand personal protective equipment and its purposes.

NCCTE.2020.IM11.01.07 - Describe fire and electrical safety and its use in advanced manufacturing.

NCCTE.2020.IM11.01.08 - Understand work area safety.

NCCTE.2020.IM11.01.09 - Understand hazardous material safety in a manufacturing environment.

NCCTE.2020.IM11.01.10 - Understand tool and machine safety.

NCCTE.2020.IM11.01.11 - Understand material handling safety.

NCCTE.2020.IM11.02.00 - Understand Maintenance Awareness Standards to Manufacturing Processes and Production (MSSC-M4).

NCCTE.2020.IM11.02.01 - Understand maintenance requirements in welding.

NCCTE.2020.IM11.02.02 - Understand maintenance requirements in basic electrical circuits.

NCCTE.2020.IM11.02.03 - Understand maintenance requirements in electrical measurement

NCCTE.2020.IM11.02.04 - Understand maintenance requirements in electrical power.

NCCTE.2020.IM11.02.05 - Understand maintenance requirements in pneumatic power systems.

NCCTE.2020.IM11.02.06 - Understand maintenance requirements in hydraulic power systems.

NCCTE.2020.IM11.02.07 - Understand lubrication concepts.

NCCTE.2020.IM11.02.08 - Understand maintenance requirements in bearings and couplings.

NCCTE.2020.IM11.02.09 - Understand maintenance requirements in belt drives.

NCCTE.2020.IM11.02.10 - Understand maintenance requirements in chain drives.



NORTH CAROLINA CAREER AND TECHNICAL EDUCATION STANDARDS

NCCTE.2020.IM11.02.11 - Understand machine control concepts.

NCCTE.2020.IM11.02.12 - Understand maintenance requirements in machine automation.

Course: Advanced Manufacturing II **Updated**

NCCTE.2020.IM12 - Advanced Manufacturing II

NCCTE.2020.IM12.01.00 - Understand quality practices and measurement to manufacturing processes and production (MSSC-M2).

NCCTE.2020.IM12.01.01 - Understanding multi-view drawing in blueprints.

NCCTE.2020.IM12.01.02 - Understanding assembly drawings and fasteners in blueprints.

NCCTE.2020.IM12.01.03 - Understanding geometric dimensioning and tolerancing in blueprint drawings.

NCCTE.2020.IM12.01.04 - Understand basic measurement.

NCCTE.2020.IM12.01.05 - Understand precision measurement tools.

NCCTE.2020.IM12.01.06 - Understand dimensional gauging.

NCCTE.2020.IM12.01.07 - Understand quality systems.

NCCTE.2020.IM12.01.08 - Understand the use of SPC (statistical process control).

NCCTE.2020.IM12.01.09 - Understand the use of control charts.

NCCTE.2020.IM12.01.10 - Understand continuous improvement in the manufacturing process.

NCCTE.2020.IM12.02.00 - Understand manufacturing processes and production standards (MSSC-M3).

NCCTE.2020.IM12.02.01 - Understand mechanical principles used in manufacturing.

NCCTE.2020.IM12.02.02 - Understand mechanical linkages used in manufacturing.

NCCTE.2020.IM12.02.03 - Understand material quality control.

NCCTE.2020.IM12.02.04 - Understand manufacturing materials and processes.

NCCTE.2020.IM12.02.05 - Understand machining processes in manufacturing.

NCCTE.2020.IM12.02.06 - Understand machine tooling used in manufacturing.

NCCTE.2020.IM12.02.07 - Understand machine operations in manufacturing.

NCCTE.2020.IM12.02.08 - Understand hand tools used in manufacturing.

NCCTE.2020.IM12.02.09 - Understand equipment procedures used in manufacturing.

NCCTE.2020.IM12.02.10 - Understand manufacturing production planning and workflow.

NCCTE.2020.IM12.02.11 - Understand manufacturing metrics.

NCCTE.2020.IM12.02.12 - Understand production control.

Course: Manufacturing Robotics **New**

NCCTE.2020.IM14 - Manufacturing Robotics

NCCTE.2020.IM14.01.00 - Understand Robot Safety and Safety Devices.

NCCTE.2020.IM14.02.00 - Understand Robot Systems and Components.

NCCTE.2020.IM14.03.00 - Apply procedures needed for Initial Installation and Start Up.

NCCTE.2020.IM14.04.00 - Apply procedures needed for Basic Robot Operations Using Teach



NORTH CAROLINA CAREER AND TECHNICAL EDUCATION STANDARDS

Pendant.

NCCTE.2020.IM14.05.00 - Apply procedures needed for Basic Robot Programming.

NCCTE.2020.IM14.06.00 - Apply procedures needed for Program File Manipulations.

NCCTE.2020.IM14.07.00 - Apply procedures needed for Robot Integration.

NCCTE.2020.IM14.08.00 - Apply procedures needed for Troubleshoot System Errors.

NCCTE.2020.IM14.09.00 - Apply procedures needed for Simulation.

Course: Woodworking I

NCCTE.2018.IM21 - Woodworking I

NCCTE.2018.IM21.01.00 - Understand The Cabinetmaking Industry, and Health and Safety Hazards and Safe Practices.

NCCTE.2018.IM21.01.01 - Understand educational requirements.

NCCTE.2018.IM21.01.02 - Understand employment opportunities.

NCCTE.2018.IM21.01.03 - Understand skills necessary.

NCCTE.2018.IM21.01.04 - Understand Personal Protective Equipment.

NCCTE.2018.IM21.01.05 - Understand OSHA.

NCCTE.2018.IM21.01.06 - Understand SDS (MSDS).

NCCTE.2018.IM21.01.07 - Understand hazardous conditions.

NCCTE.2018.IM21.01.08 - Understand guards and shielding.

NCCTE.2018.IM21.02.00 - Apply Design and Layout Procedures.

NCCTE.2018.IM21.02.01 - Apply standard and metric measurement.

NCCTE.2018.IM21.02.02 - Apply working drawings.

NCCTE.2018.IM21.02.03 - Apply measurement and marking tools.

NCCTE.2018.IM21.02.04 - Apply the concepts of Construction Math.

NCCTE.2018.IM21.03.00 - Understand Materials and Characteristics.

NCCTE.2018.IM21.03.01 - Understand wood characteristics.

NCCTE.2018.IM21.03.02 - Understand lumber and millwork.

NCCTE.2018.IM21.03.03 - Understand cabinet and furniture woods.

NCCTE.2018.IM21.03.04 - Understand panel products.

NCCTE.2018.IM21.04.00 - Apply Appropriate use of hand tools.

NCCTE.2018.IM21.04.01 - Apply sawing tools.

NCCTE.2018.IM21.04.02 - Apply surfacing tools.

NCCTE.2018.IM21.04.03 - Apply fastening and assembly tools.

NCCTE.2018.IM21.05.00 - Apply Appropriate use of Portable Power Tools.

NCCTE.2018.IM21.05.01 - Apply sawing tools.

NCCTE.2018.IM21.05.02 - Apply surfacing tools.

NCCTE.2018.IM21.05.03 - Apply fastening and assembly tools.

NCCTE.2018.IM21.06.00 - Apply Appropriate use of Stationary Power Tools.

NCCTE.2018.IM21.06.01 - Apply sawing tools.



NORTH CAROLINA CAREER AND TECHNICAL EDUCATION STANDARDS

NCCTE.2018.IM21.06.02 - Apply shaping tools.

NCCTE.2018.IM21.06.03 - Apply abrasive machines.

NCCTE.2018.IM21.06.04 - Apply drilling and boring tools.

NCCTE.2018.IM21.06.05 - Apply surfacing machines.

NCCTE.2018.IM21.06.06 - Apply turning machines.

NCCTE.2018.IM21.07.00 - Apply Surface Preparation and Finishing.

NCCTE.2018.IM21.07.01 - Apply abrasive grits.

NCCTE.2018.IM21.07.02 - Apply proper sanding methods.

NCCTE.2018.IM21.07.03 - Apply finishing processes.

NCCTE.2018.IM21.07.04 - Apply a basic finish.

NCCTE.2018.IM21.08.00 - Apply Cabinet Construction and Assembly.

NCCTE.2018.IM21.08.01 - Apply basic woodworking joints.

NCCTE.2018.IM21.08.02 - Apply basic gluing and clamping.

NCCTE.2018.IM21.08.03 - Apply basic mechanical fasteners.

Course: Woodworking II

NCCTE.2018.IM22 - Woodworking II

NCCTE.2018.IM22.01.00 - Understand The Cabinetmaking Industry, and Health and Safety Hazards and Safe Practices.

NCCTE.2018.IM22.01.01 - Understand advanced education options.

NCCTE.2018.IM22.01.02 - Understand advanced career options.

NCCTE.2018.IM22.01.03 - Understand advanced employability skills.

NCCTE.2018.IM22.01.04 - Understand Personal Protective Equipment.

NCCTE.2018.IM22.01.05 - Understand OSHA.

NCCTE.2018.IM22.01.06 - Understand SDS (MSDS).

NCCTE.2018.IM22.01.07 - Understand hazardous conditions.

NCCTE.2018.IM22.01.08 - Understand guards and shielding.

NCCTE.2018.IM22.02.00 - Apply Advanced Design and Layout Procedures.

NCCTE.2018.IM22.02.01 - Apply basic furniture styles.

NCCTE.2018.IM22.02.02 - Apply the use of advanced working drawings.

NCCTE.2018.IM22.02.03 - Apply measurement and marking tools.

NCCTE.2018.IM22.02.04 - Apply concepts of construction math.

NCCTE.2018.IM22.02.05 - Apply basic architectural standards.

NCCTE.2018.IM22.02.06 - Apply advanced layout methods.

NCCTE.2018.IM22.03.00 - Understand Materials and Characteristics.

NCCTE.2018.IM22.03.01 - Understand wood characteristics.

NCCTE.2018.IM22.03.02 - Understand lumber and millwork.

NCCTE.2018.IM22.03.03 - Understand cabinet and furniture woods.

NCCTE.2018.IM22.03.04 - Understand panel products.



NORTH CAROLINA CAREER AND TECHNICAL EDUCATION STANDARDS

NCCTE.2018.IM22.03.05 - Understand laminate and veneer.

NCCTE.2018.IM22.03.06 - Understand cabinetmaking hardware.

NCCTE.2018.IM22.04.00 - Apply Advanced use of Hand Tools.

NCCTE.2018.IM22.04.01 - Apply basic sharpening skills and processes.

NCCTE.2018.IM22.04.02 - Apply hand tool maintenance.

NCCTE.2018.IM22.04.03 - Apply proper use of hand tools.

NCCTE.2018.IM22.04.04 - Apply advanced hand tool techniques.

NCCTE.2018.IM22.04.05 - Apply hand tool maintenance.

NCCTE.2018.IM22.05.00 - Apply Advanced use of Portable Power Tools.

NCCTE.2018.IM22.05.01 - Apply sawing tools.

NCCTE.2018.IM22.05.02 - Apply surfacing tools.

NCCTE.2018.IM22.05.03 - Apply fastening and assembly tools.

NCCTE.2018.IM22.06.00 - Apply Appropriate use of Stationary Power Tools.

NCCTE.2018.IM22.06.01 - Apply the use of jigs and fixtures.

NCCTE.2018.IM22.06.02 - Apply basic maintenance.

NCCTE.2018.IM22.06.03 - Apply basic setup techniques.

NCCTE.2018.IM22.07.00 - Apply Advanced Surface Preparation and Finishing Techniques.

NCCTE.2018.IM22.07.01 - Apply the advanced use of abrasive grits.

NCCTE.2018.IM22.07.02 - Apply advanced finishing processes.

NCCTE.2018.IM22.08.00 - Apply Advanced Cabinet Construction and Assembly Techniques.

NCCTE.2018.IM22.08.01 - Apply advanced woodworking joints.

NCCTE.2018.IM22.08.02 - Apply cabinet door types and construction.

NCCTE.2018.IM22.08.03 - Apply cabinet drawer types and construction.

NCCTE.2018.IM22.08.04 - Apply veneers and plastic laminates.

Course: Metals Manufacturing Technology I Updated

NCCTE.2020.IM41 - Metals Manufacturing Technology I

NCCTE.2020.IM41.01.00 - Understand Industrial Safety and Environmental Protection.

NCCTE.2020.IM41.01.01 - Understand personal protective equipment.

NCCTE.2020.IM41.01.02 - Understand safety data sheet knowledge.

NCCTE.2020.IM41.01.03 - Understand basic shop safety.

NCCTE.2020.IM41.01.04 - Understand machine safety.

NCCTE.2020.IM41.02.00 - Apply General Maintenance.

NCCTE.2020.IM41.02.01 - Apply hand tool safety and maintenance.

NCCTE.2020.IM41.02.02 - Understand finding maintenance procedures.

NCCTE.2020.IM41.02.03 - Apply machine maintenance.

NCCTE.2020.IM41.02.04 - Apply tooling maintenance.

NCCTE.2020.IM41.03.00 - Apply Quality Control and Inspection.

NCCTE.2020.IM41.03.01 - Understand introduction to the Machinery Handbook.



NORTH CAROLINA CAREER AND TECHNICAL EDUCATION STANDARDS

NCCTE.2020.IM41.03.02 - Understand inspection plan and sampling.

NCCTE.2020.IM41.03.03 - Apply measuring techniques and tools.

NCCTE.2020.IM41.03.04 - Apply gage blocks.

NCCTE.2020.IM41.03.05 - Understand surface finish.

NCCTE.2020.IM41.03.06 - Understand statistical process control.

NCCTE.2020.IM41.04.00 - Apply Process Adjustment and Improvement.

NCCTE.2020.IM41.04.01 - Understand rationale for process improvement.

NCCTE.2020.IM41.04.02 - Understand fit and allowances.

NCCTE.2020.IM41.04.03 - Apply tapping and threading process adjustments.

NCCTE.2020.IM41.04.04 - Apply grinding process adjustments.

NCCTE.2020.IM41.04.05 - Apply milling process adjustments.

NCCTE.2020.IM41.04.06 - Apply drilling process adjustments.

NCCTE.2020.IM41.05.00 - Understand Metals Classification, Properties, and Numbering Systems.

NCCTE.2020.IM41.05.01 - Understand metal classifications.

NCCTE.2020.IM41.05.02 - Understand metal properties.

NCCTE.2020.IM41.05.03 - Understand UNS and AISI/SAE numbering systems.

NCCTE.2020.IM41.05.04 - Understand harness testing of metals and alloys.

Course: Metals Manufacturing Technology II **Updated**

NCCTE.2020.IM42 - Metals Manufacturing Technology II

NCCTE.2020.IM42.01.00 - Apply Job Planning and Management.

NCCTE.2020.IM42.01.01 - Understand Machinery Handbook Applications.

NCCTE.2020.IM42.01.02 - Apply Measurement (semi-precision).

NCCTE.2020.IM42.01.03 - Apply Measurement (precision).

NCCTE.2020.IM42.01.04 - Apply Math Applications.

NCCTE.2020.IM42.01.05 - Understand speeds and feeds formulas and terms.

NCCTE.2020.IM42.01.06 - Apply tolerance, fits, and allowances.

NCCTE.2020.IM42.01.07 - Understand taper problems.

NCCTE.2020.IM42.02.00 - Apply Layout.

NCCTE.2020.IM42.02.01 - Apply layout (semi-precision).

NCCTE.2020.IM42.02.02 - Apply layout (precision).

NCCTE.2020.IM42.03.00 - Apply Benchwork.

NCCTE.2020.IM42.03.01 - Apply blueprint reading.

NCCTE.2020.IM42.03.02 - Understand materials.

NCCTE.2020.IM42.03.03 - Apply filing.

NCCTE.2020.IM42.03.04 - Understand machine theory.

NCCTE.2020.IM42.03.05 - Apply sawing.

NCCTE.2020.IM42.03.06 - Apply drilling.

NCCTE.2020.IM42.03.07 - Apply threads and tapping.



NORTH CAROLINA CAREER AND TECHNICAL EDUCATION STANDARDS

NCCTE.2020.IM42.03.08 - Apply milling.

NCCTE.2020.IM42.03.09 - Apply reaming.

NCCTE.2020.IM42.03.10 - Apply knurling.

NCCTE.2020.IM42.04.00 - Apply Workpiece Clamping and Tool Holding.

NCCTE.2020.IM42.04.01 - Apply tool holding applications.

NCCTE.2020.IM42.04.02 - Apply clamping and vise applications.

NCCTE.2020.IM42.05.00 - Apply Drilling Operations on a Vertical Milling Machine.

NCCTE.2020.IM42.05.01 - Apply drilling operations setup.

NCCTE.2020.IM42.05.02 - Apply drilling operations.

NCCTE.2020.IM42.06.00 - Apply Milling Operations

NCCTE.2020.IM42.06.01 - Understand milling machine components.

NCCTE.2020.IM42.06.02 - Understand feeds and speeds.

NCCTE.2020.IM42.06.03 - Apply milling operations setup.

NCCTE.2020.IM42.06.04 - Apply basic milling operations.

NCCTE.2020.IM42.07.00 - Understand Quality Control and Inspection Tasks.

NCCTE.2020.IM42.07.01 - Understand measurement practices.

NCCTE.2020.IM42.07.02 - Understand process improvement.

Course: Welding Technology I **Updated**

NCCTE.2020.IM61 - Welding Technology I

NCCTE.2020.IM61.01.00 - Apply Procedures to complete AWS SENSE Module 2 - Safety and Health of Welders

NCCTE.2020.IM61.01.01 - Demonstrate proper use and inspection of personal protection equipment (PPE).

NCCTE.2020.IM61.01.02 - Demonstrate proper safe operation practices in the work area.

NCCTE.2020.IM61.01.03 - Demonstrate proper use and inspection of ventilation equipment.

NCCTE.2020.IM61.01.04 - Demonstrate proper Hot Zone operation.

NCCTE.2020.IM61.01.05 - Demonstrate proper work actions for working in confined spaces.

NCCTE.2020.IM61.01.06 - Demonstrate proper use of precautionary labeling and SDS information.

NCCTE.2020.IM61.01.07 - Demonstrate proper inspection and operation of equipment used for each welding and thermal cutting process.

NCCTE.2020.IM61.02.00 - Apply Procedures to complete AWS SENSE Module 8 - Thermal Cutting Process - Safety

NCCTE.2020.IM61.02.01 - Perform safety inspections of manual and mechanized OFC equipment and accessories.

NCCTE.2020.IM61.02.02 - Perform safety inspections of manual PAC equipment and accessories.

NCCTE.2020.IM61.02.03 - Perform safety inspections of manual CAC-A equipment and accessories.



NORTH CAROLINA CAREER AND TECHNICAL EDUCATION STANDARDS

NCCTE.2020.IM61.03.00 - Apply Procedures to complete AWS SENSE Module 8 - Thermal Cutting Process - Unit 1: Manual Oxyfuel Cutting and Unit 2: Mechanized Oxyfuel Gas Cutting

NCCTE.2020.IM61.03.01 - Make minor external repairs to manual and mechanized OFC equipment and accessories.

NCCTE.2020.IM61.03.02 - Set up for manual and mechanized OFC operations on carbon steel.

NCCTE.2020.IM61.03.03 - Operate manual and mechanized OFC equipment on carbon steel.

NCCTE.2020.IM61.03.04 - Perform straight and shape, square and bevel edge cutting operations in flat position, on carbon steel.

NCCTE.2020.IM61.04.00 - Apply Procedures to complete AWS SENSE Module 8 -Thermal Cutting Process -Unit 3 Manual Plasma Arc Cutting

NCCTE.2020.IM61.04.01 - Make minor external repairs to manual PAC equipment and accessories.

NCCTE.2020.IM61.04.02 - Sets up for manual PAC operations on carbon steel, austenitic stainless steel, and aluminum.

NCCTE.2020.IM61.04.03 - Operate manual PAC equipment on carbon steel, austenitic stainless steel, and aluminum.

NCCTE.2020.IM61.04.04 - Perform straight and shape, square edge, cutting operations, in the flat position, on carbon steel, austenitic stainless steel, and aluminum.

NCCTE.2020.IM61.05.00 - Apply Procedures to complete AWS SENSE Module 8 -Thermal Cutting Process -Unit 4 Manual Air Carbon Arc Cutting

NCCTE.2020.IM61.05.01 - Make minor external repairs to manual CAC-A equipment and accessories.

NCCTE.2020.IM61.05.02 - Set up for manual CAC-A scarfing and gouging operations on carbon steel.

NCCTE.2020.IM61.05.03 - Operate manual CAC-A equipment on carbon steel.

NCCTE.2020.IM61.05.04 - Perform scarfing and gouging operations to remove base and weld metal, in the flat and horizontal positions, on carbon steel.

NCCTE.2020.IM61.06.00 - Apply Procedures from AWS SENSE Module 4 - Shielded Metal Arc Welding (SMAW) Safety

NCCTE.2020.IM61.06.01 - Perform safety inspections of SMAW equipment and accessories.

NCCTE.2020.IM61.06.02 - demonstrate safe working practices as described in American National Standard Z49.1

NCCTE.2020.IM61.07.00 - Apply Procedures from AWS SENSE Module 4 - Shielded Metal Arc Welding (SMAW) Base Metal Prep and Welding Positions

NCCTE.2020.IM61.07.01 - Operate SMAW equipment on carbon steel.

NCCTE.2020.IM61.07.02 - Prepares base metal for welds

NCCTE.2020.IM61.07.03 - Identifies and performs various welding positions

NCCTE.2020.IM61.08.00 - Apply Procedures from AWS SENSE Module 4 - Shielded Metal Arc Welding



NORTH CAROLINA CAREER AND TECHNICAL EDUCATION STANDARDS

(SMAW) Equipment Setup

NCCTE.2020.IM61.08.01 - Make minor external repairs to SMAW equipment and accessories.

NCCTE.2020.IM61.08.02 - Set up for SMAW operations on carbon steel.

NCCTE.2020.IM61.09.00 - Apply Procedures from AWS SENSE Module 4 - Shielded Metal Arc Welding (SMAW) Fillet Weld

NCCTE.2020.IM61.09.01 - Make fillet welds in all positions on carbon steel.

NCCTE.2020.IM61.09.02 - Perform welds using E6010, E6011, or E7018 electrodes.

Course: Welding Technology II Updated

NCCTE.2020.IM62 - Welding Technology II

NCCTE.2020.IM62.01.00 - Apply procedures to complete AWS SENSE Module 1 - Occupational Orientation

NCCTE.2020.IM62.01.01 - Prepare time or job cards, reports or records.

NCCTE.2020.IM62.01.02 - Perform housekeeping duties.

NCCTE.2020.IM62.01.03 - Follow verbal instructions to complete work assignments.

NCCTE.2020.IM62.01.04 - Follow written instructions to complete work assignments.

NCCTE.2020.IM62.02.00 - Apply procedures to complete AWS SENSE Module 3 - Drawing and Welding Symbol Interpretation

NCCTE.2020.IM62.02.01 - Interpret basic elements of a drawing or sketch.

NCCTE.2020.IM62.02.02 - Interpret welding symbol information.

NCCTE.2020.IM62.02.03 - Fabricate parts from a drawing or sketch.

NCCTE.2020.IM62.03.00 - Apply procedures to complete AWS SENSE Module 4 - Shielded Metal Arc Welding (SMAW) Electrodes

NCCTE.2020.IM62.03.01 - Demonstrate the proper applications of various electrodes.

NCCTE.2020.IM62.03.02 - Describe electrode identification

NCCTE.2020.IM62.04.00 - Apply procedures to complete AWS SENSE Module 4 - Shielded Metal Arc Welding (SMAW) Groove Weld Prep

NCCTE.2020.IM62.04.01 - Set up for SMAW operations on carbon steel for groove welds.

NCCTE.2020.IM62.04.02 - Demonstrate proper welder settings depending on groove weld application

NCCTE.2020.IM62.05.00 - Perform procedures to complete AWS SENSE Module 4 - Shielded Metal Arc Welding (SMAW) Groove Weld

NCCTE.2020.IM62.05.01 - Make groove weld in all positions on carbon steel.

NCCTE.2020.IM62.05.02 - Set up for SMAW operations on carbon steel for groove welds.

NCCTE.2020.IM62.05.03 - Operate SMAW equipment on carbon steel for groove welds.

NCCTE.2020.IM62.05.04 - Pass SMAW welder performance qualification test (2G and 3G, uphill, limited thickness test plates) on carbon steel.

NCCTE.2020.IM62.06.00 - Apply procedures to complete AWS SENSE Module 9 - Welding Inspection and Testing



NORTH CAROLINA CAREER AND TECHNICAL EDUCATION STANDARDS

NCCTE.2020.IM62.06.01 - Examine cut surfaces and edges of prepared base metal parts.

NCCTE.2020.IM62.06.02 - Examine tacks, root passes, intermediate layers, and completed welds.

Course: Welding Technology III Updated

NCCTE.2020.IM63 - Welding Technology III

NCCTE.2020.IM63.01.00 - Apply procedures to complete AWS SENSE Module 5 and 6 - Gas Metal Arc Welding and Flux Cored Arc Welding Safety

NCCTE.2020.IM63.01.01 - Perform safety inspections of GMAW equipment and accessories.

NCCTE.2020.IM63.01.02 - Perform safety inspections of FCAW equipment and accessories.

NCCTE.2020.IM63.02.00 - Apply procedures to complete AWS SENSE Module 5 and 6 - Gas Metal Arc Welding and Flux Cored Arc Welding Equipment Setup

NCCTE.2020.IM63.02.01 - Make minor external repairs to GMAW equipment and accessories.

NCCTE.2020.IM63.02.02 - Make minor external repairs to FCAW equipment and accessories.

NCCTE.2020.IM63.02.03 - Set up for GMAW-S and GMAW (spray) operations on carbon steel.

NCCTE.2020.IM63.02.04 - Set up for FCAW-G/GM & S operations on carbon steel.

NCCTE.2020.IM63.03.00 - Apply procedures to complete AWS SENSE Module 5 and 6 - Gas Metal Arc Welding and Flux Cored Arc Welding Gasses

NCCTE.2020.IM63.03.01 - Describe and apply the various gasses used in GMAW

NCCTE.2020.IM63.03.02 - Describe and apply the various gasses used in FCAW

NCCTE.2020.IM63.04.00 - Apply procedures to complete AWS SENSE Module 5 and 6 - Gas Metal Arc Welding and Flux Cored Arc Welding Filler Wire

NCCTE.2020.IM63.04.01 - Describe and apply the various electrodes/filler metals used in GMAW

NCCTE.2020.IM63.04.02 - Describe and apply the various electrodes/filler metals used in FCAW

NCCTE.2020.IM63.05.00 - Perform procedures to complete AWS SENSE Module 5 - Gas Metal Arc Welding (GMAW) Short Circuit Fillet and Groove Welds

NCCTE.2020.IM63.05.01 - Operate GMAW-S and GMAW (spray) equipment on carbon steel.

NCCTE.2020.IM63.06.00 - Perform procedures to complete AWS SENSE Module 5 - Gas Metal Arc Welding (GMAW) Spray Fillet and Groove Welds

NCCTE.2020.IM63.06.01 - Operate GMAW-S and GMAW (spray) equipment on carbon steel.

NCCTE.2020.IM63.06.02 - Make GMAW-S fillet welds in all positions and GMAW (spray) fillet welds in the 1F and 2F positions on carbon steel.

NCCTE.2020.IM63.06.03 - Make GMAW-S groove welds in all positions and GMAW (spray) groove welds in the 1G position on carbon steel.

NCCTE.2020.IM63.06.04 - Pass GMAW-S and GMAW (spray) welder performance qualification test on carbon steel.

NCCTE.2020.IM63.07.00 - Perform procedures to complete AWS SENSE Module 6 - Flux Cored Arc Welding (FCAW) Gas and Self Shielded Fillet and Groove Welds

NCCTE.2020.IM63.07.01 - Operate FCAW-G/GM & S equipment on carbon steel.

NCCTE.2020.IM63.07.02 - Make FCAW-G/GM & S fillet welds in all positions on carbon steel.



NORTH CAROLINA CAREER AND TECHNICAL EDUCATION STANDARDS

NCCTE.2020.IM63.07.03 - Make FCAW-G/GM & S groove welds in all positions on carbon steel.

NCCTE.2020.IM63.07.04 - Pass FCAW-G/GM & S welder performance qualification test on carbon steel.

Course: Public Safety I

NCCTE.2016.IP11 - Public Safety I

NCCTE.2016.IP11.01.00 - Understand basic career information in Public Safety.

NCCTE.2016.IP11.02.00 - Apply procedures to obtain NIMS 700 - National Incident Command System (NIMS), and Introduction.

NCCTE.2016.IP11.03.00 - Apply procedures to obtain NIMS 100 - Introduction to Incident Command System.

NCCTE.2016.IP11.04.00 - Understand careers in Fire Fighting Services.

NCCTE.2016.IP11.05.00 - Understand careers in Emergency Medical Services.

NCCTE.2016.IP11.06.00 - Understand careers in Law and Justice Services.

NCCTE.2016.IP11.07.00 - Apply procedures to obtain NIMS 200 - ICS for Single Resource and Initial Action Incidents.

NCCTE.2016.IP11.08.00 - Understand careers in Emergency Management Services.

NCCTE.2016.IP11.09.00 - Apply procedures to obtain NIMS 800 - National Response Framework, an Introduction.

NCCTE.2016.IP11.10.00 - Apply a procedure to develop a personal plan for a career in Public Safety.

Course: Public Safety II **Updated**

NCCTE.2020.IP12 - Public Safety II

NCCTE.2020.IP12.01.00 - Understand Disaster Preparedness.

NCCTE.2020.IP12.02.00 - Understand Fire Safety and Utility Controls.

NCCTE.2020.IP12.03.00 - Apply procedures needed for Disaster Medical Operations - Part I.

NCCTE.2020.IP12.04.00 - Apply procedures needed for Disaster Medical Operations - Part II.

NCCTE.2020.IP12.05.00 - Apply procedures needed for Light Search and Rescue Operations.

NCCTE.2020.IP12.06.00 - Understand CERT Organization.

NCCTE.2020.IP12.07.00 - Understand Disaster Psychology.

NCCTE.2020.IP12.08.00 - Understand Terrorism and CERT.

NCCTE.2020.IP12.09.00 - Apply procedures needed for Course Review, Final Exam, Disaster Simulation.

NCCTE.2020.IP12.10.00 - Apply procedures needed for 911 Telecommunicator.

Course: Emergency Medical Technology I

NCCTE.IP21 - EMT I

NCCTE.IP21.01.00 - PREPARATORY

NCCTE.IP21.01.01 - Introduction to EMS Systems

NCCTE.IP21.01.02 - The Well Being of the EMT



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NCCTE.IP21.01.03 - Medical / Legal and Ethical Issues

NCCTE.IP21.01.04 - The Human Body

NCCTE.IP21.01.05 - Baseline Vital Signs and SAMPLE History

NCCTE.IP21.01.06 - Lifting and Moving Patients

NCCTE.IP21.02.00 - MODULE 2: AIRWAY (to include CPR skills)

NCCTE.IP21.02.01 - Airway Management

NCCTE.IP21.03.00 - PATIENT ASSESSMENT

NCCTE.IP21.03.01 - Scene Size-up

NCCTE.IP21.03.02 - The Initial Assessment

NCCTE.IP21.03.03 - Focused History and Physical Exam - Trauma Patients

NCCTE.IP21.03.04 - Focused History and Physical Exam - Medical Patients

NCCTE.IP21.03.05 - Detailed Physical Exam

NCCTE.IP21.03.06 - On-going Assessment

NCCTE.IP21.03.07 - Communications

NCCTE.IP21.03.08 - Documentation

NCCTE.IP21.04.00 - MEDICAL/BEHAVIORAL EMERGENCIES AND OBSTETRICS/GYNECOLOGY

NCCTE.IP21.04.01 - General Pharmacology

NCCTE.IP21.04.02 - Respiratory Emergencies

Course: Emergency Medical Technology II

NCCTE.IP22 - EMT II

NCCTE.IP22.00.00 - COMPREHENSIVE CONTENT IP21 EMT I

NCCTE.IP22.01.00 - MEDICAL/BEHAVIORAL EMERGENCIES AND OBSTETRICS/GYNECOLOGY

NCCTE.IP22.01.01 - Cardiovascular Emergencies

NCCTE.IP22.01.02 - Diabetes/Altered Mental Status

NCCTE.IP22.01.03 - Allergies

NCCTE.IP22.01.04 - Poisoning/Overdose

NCCTE.IP22.01.05 - Environmental Emergencies

NCCTE.IP22.01.06 - Behavioral Emergencies

NCCTE.IP22.01.07 - Obstetrics/Gynecology

NCCTE.IP22.02.00 - TRAUMA

NCCTE.IP22.02.01 - Bleeding and Shock

NCCTE.IP22.02.02 - Soft Tissue Injuries

NCCTE.IP22.02.03 - Musculoskeletal Care

NCCTE.IP22.02.04 - Injuries to the Head and Spine

NCCTE.IP22.03.00 - INFANTS AND CHILDREN

NCCTE.IP22.03.01 - Infants and Children

NCCTE.IP22.04.00 - OPERATIONS

NCCTE.IP22.04.01 - Ambulance Operations



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NCCTE.IP22.04.02 - Gaining Access

NCCTE.IP22.04.03 - Overviews

Course: Firefighter Technology I **Updated**

NCCTE.2020.IP31 - Firefighter Technology I

NCCTE.2020.IP31.01.00 - Understand FF General and Communications.

NCCTE.2020.IP31.01.01 - Orientation (Chapter 1, 22).

NCCTE.2020.IP31.01.02 - Fire Service Communications (Chapter 4).

NCCTE.2020.IP31.02.00 - Apply procedures needed for FF Fireground Ops 1.

NCCTE.2020.IP31.02.01 - Firefighter Health & Safety (Chapters 2, 20).

NCCTE.2020.IP31.03.00 - Apply procedures needed for FF Fireground Ops 2.

NCCTE.2020.IP31.03.01 - PPE (Chapter 3).

NCCTE.2020.IP31.04.00 - Apply procedures needed for FF Fireground Ops 3.

NCCTE.2020.IP31.04.01 - Building Construction (Chapter 6).

NCCTE.2020.IP31.04.02 - Portable Extinguishers (Chapter 7).

NCCTE.2020.IP31.04.03 - Fire Behavior (Chapter 5).

NCCTE.2020.IP31.05.00 - Apply procedures needed for FF Fireground Ops 4.

NCCTE.2020.IP31.05.01 - Tools and Forcible Entry (Chapters 8, 10).

NCCTE.2020.IP31.05.02 - Loss Control (Chapters 19, 28).

Course: Firefighter Technology II **Updated**

NCCTE.2020.IP32 - Firefighter Technology II

NCCTE.2020.IP32.01.00 - Apply procedures needed for FF Fireground Ops 5.

NCCTE.2020.IP32.01.01 - Ladders (Chapter 11).

NCCTE.2020.IP32.01.02 - Ventilation (Chapter 13).

NCCTE.2020.IP32.02.00 - Apply procedures needed for FF Fireground Ops 6.

NCCTE.2020.IP32.02.01 - Ropes & Knots (Chapter 9).

NCCTE.2020.IP32.02.02 - Search & Rescue (Chapter 12).

NCCTE.2020.IP32.03.00 - Apply procedures needed for FF Fireground Ops 7

NCCTE.2020.IP32.03.01 - Water Supplies (Chaptr 14).

NCCTE.2020.IP32.04.00 - Apply procedures needed for FF Fireground Ops 8

NCCTE.2020.IP32.04.01 - Hose, Streams, Appliances (Chapters 15, 16).

NCCTE.2020.IP32.05.00 - Apply procedures needed for Emergency Medical Care (FIP 3016)

Course: Firefighter Technology III

NCCTE.2015.IP33 - Fire Fighter Technology III

NCCTE.2015.IP33.01.00 - Water Supplies (FIP# 3018)

NCCTE.2015.IP33.02.00 - Sprinklers (FIP# 3019)

NCCTE.2015.IP33.03.00 - Fire & Life Safety Preparedness (FIP# 3021)

NCCTE.2015.IP33.04.00 - Rescue (FIP# 3017)



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NCCTE.2015.IP33.05.00 - Mayday (FIP# 3026)

NCCTE.2015.IP33.06.00 - Safety & Survival (FIP# 3025)

Course: Law and Justice I

NCCTE.2016.IP41 - Law and Justice I

NCCTE.2016.IP41.01.00 - Understand Careers in Law and Justice

NCCTE.2016.IP41.02.00 - Understand Basic Criminal Justice System

NCCTE.2016.IP41.03.00 - Understand Basic Criminal and Constitutional Law

NCCTE.2016.IP41.04.00 - Apply Procedures Used to Create Police Reports

NCCTE.2016.IP41.05.00 - Understand the Use of Force

NCCTE.2016.IP41.06.00 - Apply Procedures used in Approach and Arrest of Suspects

NCCTE.2016.IP41.07.00 - Understand Patrol Operations

NCCTE.2016.IP41.08.00 - Understand Traffic Codes and Investigations

NCCTE.2016.IP41.09.00 - Understand Community Policing, Conflict Resolution, and Cultural Diversity

NCCTE.2016.IP41.10.00 - Understand Sentencing and Correctional Issues.

NCCTE.2016.IP41.11.00 - Understand Agency Administration

NCCTE.2016.IP41.12.00 - Understand Ethics in Law and Justice

Course: Law and Justice II

NCCTE.2018.IP42 -

NCCTE.2018.IP42.01.00 - Understand Foundations in Law Enforcement and Protective Services

NCCTE.2018.IP42.02.00 - Apply Procedures for Communications in Law Enforcement and Protective Services

NCCTE.2018.IP42.03.00 - Understand Protection Officers Functions

NCCTE.2018.IP42.04.00 - Understand Crime Prevention and Physical Security

NCCTE.2018.IP42.05.00 - Understand Safety and Fire Protection

NCCTE.2018.IP42.06.00 - Understand Information Protection

NCCTE.2018.IP42.07.00 - Understand Deviance Crime and Violence

NCCTE.2018.IP42.08.00 - Understand Risk and Threat Management

NCCTE.2018.IP42.09.00 - Apply Procedures in Investigations

NCCTE.2018.IP42.10.00 - Understand Legal Aspects of Security

NCCTE.2018.IP42.11.00 - Apply Procedures for Officer Safety and Uses of Force

NCCTE.2018.IP42.12.00 - Apply Procedures for Relations with Others

Course: Emergency Management I **Updated**

NCCTE.2020.IP51 - Emergency Management I

NCCTE.2020.IP51.01.00 - IS-230: Fundamentals of Emergency Management

NCCTE.2020.IP51.02.00 - IS-909: Community Preparedness Implementing Simple Activities for Everyone

NCCTE.2020.IP51.03.00 - IS-235: Emergency Planning



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NCCTE.2020.IP51.04.00 - IS-120: An Introduction to Exercises

NCCTE.2020.IP51.05.00 - IS-240: Leadership & Influence

NCCTE.2020.IP51.06.00 - IS-241: Decision-Making and Problem-Solving

NCCTE.2020.IP51.07.00 - IS-242: Effective Communication

NCCTE.2020.IP51.08.00 - IS-244: Developing and Managing Volunteers

NCCTE.2020.IP51.09.00 - S-288: The Role of Voluntary Agencies in Emergency Management

NCCTE.2020.IP51.10.00 - IS-703: NIMS Resource Management

NCCTE.2020.IP51.11.00 - IS-706: NIMS Intrastate Mutual Aid, an Introduction

NCCTE.2020.IP51.12.00 - IS-2200: EOC Management and Operations

NCCTE.2020.IP51.13.00 - IS-559: Local Damage Assessment

Course: Emergency Management II **Updated**

NCCTE.2020.IP52 - Emergency Management II

NCCTE.2020.IP52.01.00 - G0191: ICS/EOC Interface

NCCTE.2020.IP52.02.00 - G0775: Emergency Operations Center (EOC) Management and Operations

NCCTE.2020.IP52.03.00 - G0557: Rapid Needs Assessment

NCCTE.2020.IP52.04.00 - IS271: Anticipating Hazardous Weather and Community Risk

NCCTE.2020.IP52.05.00 - G0271: Hazardous Weather and Flooding Preparedness

NCCTE.2020.IP52.06.00 - IS-247: Integrated Public Alert and Warning System (IPAWS)

NCCTE.2020.IP52.07.00 - G0272: Warning Coordination and Communication

NCCTE.2020.IP52.08.00 - G0386: Mass Fatalities Incident Response

NCCTE.2020.IP52.09.00 - IS-393: Introduction to Hazard Mitigation

NCCTE.2020.IP52.10.00 - G0393: Mitigation for Emergency Managers

Course: Automotive Service Fundamentals **Updated**

NCCTE.2015.IT11 - Automotive Service Fundamentals

NCCTE.2015.IT11.01.00 - Understand Automotive Technology Careers.

NCCTE.2015.IT11.02.00 - Understand Shop and Personal Safety.

NCCTE.2015.IT11.03.00 - Understand Cleaners and Lubricants.

NCCTE.2015.IT11.04.00 - Understand Tools and Equipment.

NCCTE.2015.IT11.05.00 - Understand Vehicle Service Preparation.

NCCTE.2015.IT11.06.00 - Understand Engine Service

NCCTE.2015.IT11.07.00 - Understand Automatic Transmission/Transaxle Service

NCCTE.2015.IT11.08.00 - Understand Manual Drive Train & Axle Service

NCCTE.2015.IT11.09.00 - Understand Suspension & Steering Service

NCCTE.2015.IT11.10.00 - Understand Brake Service

NCCTE.2015.IT11.11.00 - Understand Electrical/Electronic System Service

NCCTE.2015.IT11.12.00 - Understand Heating & Air Conditioning Service

NCCTE.2015.IT11.13.00 - Understand Engine Performance Service



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Course: Automotive Service I **Updated**

NCCTE.2015.IT16 - Automotive Service I

NCCTE.2015.IT16.01.00 - Understand Engine Service

NCCTE.2015.IT16.02.00 - Understand Automatic Transmission/Transaxle Service

NCCTE.2015.IT16.03.00 - Understand Manual Drive Train and Axle Service

NCCTE.2015.IT16.04.00 - Understand Suspension and Steering Service

NCCTE.2015.IT16.05.00 - Understand Brake Service

NCCTE.2015.IT16.06.00 - Understand Electrical/Electronic System Service

NCCTE.2015.IT16.07.00 - Understand Heating and Air Conditioning Service

NCCTE.2015.IT16.08.00 - Understand Engine Performance Service

Course: Automotive Service II **Updated**

NCCTE.2019.IT17 - Automotive Service II

NCCTE.2019.IT17.01.00 - Understand Engine Service

NCCTE.2019.IT17.02.00 - Understand Automatic Transmission/Transaxle Service

NCCTE.2019.IT17.03.00 - Understand Manual Drive Train and Axle Service

NCCTE.2019.IT17.04.00 - Understand Suspension and Steering Service

NCCTE.2019.IT17.05.00 - Understand Brake Service

NCCTE.2019.IT17.06.00 - Understand Electrical/Electronic System Service

NCCTE.2019.IT17.07.00 - Understand Heating and Air Conditioning Service

NCCTE.2019.IT17.08.00 - Understand Engine Performance Service

Course: Automotive Service III **Updated**

NCCTE.2020.IT18 - Auto Service III

NCCTE.2020.IT18.01.00 - Understand Engine Service

NCCTE.2020.IT18.02.00 - Understand Automatic Transmission/Transaxle Service

NCCTE.2020.IT18.03.00 - Understand Manual Drive Train & Axle Service

NCCTE.2020.IT18.04.00 - Understand Suspension & Steering Service

NCCTE.2020.IT18.05.00 - Understand Brake Service

NCCTE.2020.IT18.06.00 - Understand Electrical/Electronic System Service

NCCTE.2020.IT18.07.00 - Understand Heating & Air Conditioning Service

NCCTE.2020.IT18.08.00 - Understand Engine Performance Service

Course: Collision Repair Fundamentals **New**

NCCTE.2020.IT30 - Collision Repair Fundamentals

NCCTE.2020.IT30.01.00 - Understand Collision Repair Process Overview.

NCCTE.2020.IT30.01.01 - Explain obligations to the customer and the liability.

NCCTE.2020.IT30.01.02 - Explain the collision repair process.

NCCTE.2020.IT30.01.03 - Explain structural and non-Structural repairs.

NCCTE.2020.IT30.01.04 - Explain electrical and mechanical repairs.



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NCCTE.2020.IT30.01.05 - Explain refinishing and delivery.

NCCTE.2020.IT30.02.00 - Understand Hazardous Materials, Personal Safety, and Refinishing Safety.

NCCTE.2020.IT30.02.01 - Explain safety data sheets.

NCCTE.2020.IT30.02.02 - Explain labels.

NCCTE.2020.IT30.02.03 - Explain hazardous materials.

NCCTE.2020.IT30.02.04 - Explain personal protective equipment.

NCCTE.2020.IT30.02.05 - Explain repair facility safety.

NCCTE.2020.IT30.02.06 - Explain hazardous wastes.

NCCTE.2020.IT30.02.07 - Explain general protections.

NCCTE.2020.IT30.02.08 - Explain structural repairs.

NCCTE.2020.IT30.02.09 - Explain non-structural repairs.

NCCTE.2020.IT30.02.10 - Explain hybrids.

NCCTE.2020.IT30.03.00 - Understand Tools, Equipment, and Attachment Methods.

NCCTE.2020.IT30.03.01 - Identify basic tools.

NCCTE.2020.IT30.03.02 - Explain mechanical fastening methods.

NCCTE.2020.IT30.03.03 - Explain glass and trim attachment methods.

NCCTE.2020.IT30.03.04 - Explain estimating tools and processes.

NCCTE.2020.IT30.03.05 - Explain measuring and straightening.

NCCTE.2020.IT30.03.06 - Explain welding.

NCCTE.2020.IT30.03.07 - Describe welding methods.

NCCTE.2020.IT30.03.08 - Explain panel bonding.

NCCTE.2020.IT30.03.09 - Explain capital equipment.

NCCTE.2020.IT30.04.00 - Understand Vehicle Construction Materials.

NCCTE.2020.IT30.04.01 - Explain steel construction materials.

NCCTE.2020.IT30.04.02 - Explain aluminum and magnesium construction materials.

NCCTE.2020.IT30.04.03 - Explain plastic and carbon fiber construction materials.

NCCTE.2020.IT30.04.04 - Explain collision energy management.

NCCTE.2020.IT30.05.00 - Remember Vehicle Parts Terminology.

NCCTE.2020.IT30.05.01 - Define bumpers, front body, and roof panels.

NCCTE.2020.IT30.05.02 - Define doors.

NCCTE.2020.IT30.05.03 - Define rear closure panels, box assemblies, and exterior trim.

NCCTE.2020.IT30.05.04 - Define lighting.

NCCTE.2020.IT30.05.05 - Define front unibody structures and full frames.

NCCTE.2020.IT30.05.06 - Define side and rear unibody structures.

NCCTE.2020.IT30.05.07 - Define interiors.

NCCTE.2020.IT30.05.08 - Define glass.

NCCTE.2020.IT30.06.00 - Understand Industry Repair Terms and Concepts.

NCCTE.2020.IT30.06.01 - Explain non-structural terms and concepts.



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NCCTE.2020.IT30.06.02 - Explain structural terms and concepts.

NCCTE.2020.IT30.06.03 - Explain structural part replacement terms and concepts.

NCCTE.2020.IT30.06.04 - Explain glass terms and concepts.

NCCTE.2020.IT30.06.05 - Explain damage report writing terms and concepts.

NCCTE.2020.IT30.07.00 - Understand Basic Mechanical Systems Terminology.

NCCTE.2020.IT30.07.01 - Explain steering systems.

NCCTE.2020.IT30.07.02 - Explain wheels and tires.

NCCTE.2020.IT30.07.03 - Explain brakes.

NCCTE.2020.IT30.07.04 - Explain stability control.

NCCTE.2020.IT30.07.05 - Explain suspension systems.

NCCTE.2020.IT30.07.06 - Explain drivetrains.

NCCTE.2020.IT30.07.07 - Explain heating and cooling systems.

NCCTE.2020.IT30.07.08 - Explain air conditioning systems.

NCCTE.2020.IT30.08.00 - Understand Basic Mechanical Repair Terms and Vehicle Protection.

NCCTE.2020.IT30.08.01 - Explain electrical terms.

NCCTE.2020.IT30.08.02 - Explain mechanical terms

NCCTE.2020.IT30.08.03 - Explain steering and suspension systems terms.

NCCTE.2020.IT30.08.04 - Explain protecting electronic systems.

NCCTE.2020.IT30.08.05 - Explain preventing vehicle damage during repairs.

NCCTE.2020.IT30.09.00 - Understand Safety Systems.

NCCTE.2020.IT30.09.01 - Explain airbags.

NCCTE.2020.IT30.09.02 - Explain seat belts and child safety seats.

NCCTE.2020.IT30.09.03 - Explain occupant classification.

NCCTE.2020.IT30.09.04 - Explain additional safety systems.

NCCTE.2020.IT30.10.00 - Understand Basic Refinishing and Corrosion Protection.

NCCTE.2020.IT30.10.01 - Explain vehicle maker processes.

NCCTE.2020.IT30.10.02 - Explain refinishing terms.

NCCTE.2020.IT30.10.03 - Explain refinishing materials.

NCCTE.2020.IT30.10.04 - Explain personal safety.

NCCTE.2020.IT30.10.05 - Identify refinishing tools.

NCCTE.2020.IT30.10.06 - Explain refinishing preparation.

NCCTE.2020.IT30.10.07 - Identify refinishing defects.

NCCTE.2020.IT30.10.08 - Explain corrosion protection

NCCTE.2020.IT30.11.00 - Understand Detailing.

NCCTE.2020.IT30.11.01 - Explain inspecting the finish.

NCCTE.2020.IT30.11.02 - Explain finish defect removal.

NCCTE.2020.IT30.11.03 - Explain final detailing.

NCCTE.2020.IT30.12.00 - Understand Vehicle Technology and Trends.



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NCCTE.2020.IT30.12.01 - Explain trends and industry influences.

NCCTE.2020.IT30.12.02 - Explain North American vehicle makers technology and trends.

NCCTE.2020.IT30.12.03 - Explain Asian vehicle makers technology and trends.

NCCTE.2020.IT30.12.04 - Explain European vehicle makers technology and trends.

NCCTE.2020.IT30.12.05 - Explain future trends.

Course: Collision Repair I **New**

NCCTE.2020.IT31 - Collision Repair I

NCCTE.2020.IT31.01.00 - Understand Trim and Hardware

NCCTE.2020.IT31.01.01 - Hardware

NCCTE.2020.IT31.01.02 - Hardware Removal and Restoration

NCCTE.2020.IT31.01.03 - Interiors

NCCTE.2020.IT31.01.04 - Trim and Moldings

NCCTE.2020.IT31.01.05 - Front, Rear, and Underbody Trim

NCCTE.2020.IT31.01.06 - Exterior Accessories

NCCTE.2020.IT31.01.07 - Pinstripes and Decals

NCCTE.2020.IT31.02.00 - Understand Bolted-On Part Replacement

NCCTE.2020.IT31.02.01 - Bolted Exterior Panel Replacement Considerations

NCCTE.2020.IT31.02.02 - Doors

NCCTE.2020.IT31.02.03 - Front Body Panels

NCCTE.2020.IT31.02.04 - Rear Body Panels

NCCTE.2020.IT31.03.00 - Understand Moveable Glass

NCCTE.2020.IT31.03.01 - Moveable Glass Overview

NCCTE.2020.IT31.03.02 - Side Door Glass

NCCTE.2020.IT31.03.03 - Rear Body Movable Glass

NCCTE.2020.IT31.03.04 - Sunroofs

NCCTE.2020.IT31.03.05 - Inspection and General Troubleshooting

NCCTE.2020.IT31.04.00 - Understand Plastic and Composite Repair

NCCTE.2020.IT31.04.01 - Plastic Identification and Repair Considerations

NCCTE.2020.IT31.04.02 - Adhesive Bumper Repair

NCCTE.2020.IT31.04.03 - Fiber Reinforced Plastic Repair

NCCTE.2020.IT31.04.04 - Plastic Welding Repairs

NCCTE.2020.IT31.05.00 - Understand Automotive Lighting

NCCTE.2020.IT31.05.01 - I see the Light

NCCTE.2020.IT31.05.02 - When the Lights Go Out

NCCTE.2020.IT31.06.00 - Understand Automotive Foams

NCCTE.2020.IT31.06.01 - Overview of Automotive Foams

NCCTE.2020.IT31.06.02 - Automotive Replacement Foam Types

NCCTE.2020.IT31.06.03 - Foam Safety and Repair



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NCCTE.2020.IT31.06.04 - Preparing Parts for Foam

NCCTE.2020.IT31.07.00 - Understand Corrosion Protection

NCCTE.2020.IT31.07.01 - Corrosion Origins and Prevention

NCCTE.2020.IT31.07.02 - Corrosion Protection During Repairs

NCCTE.2020.IT31.07.03 - Corrosion Protection After Repairs

NCCTE.2020.IT31.07.04 - Vehicle Maker Recommendations

Course: Collision Repair II - Nonstructural **New**

NCCTE.2020.IT32 - Collision Repair II - Non-Structural

NCCTE.2020.IT32.01.00 - Understand Non-Structural Repair.

NCCTE.2020.IT32.01.01 - Explain steel used in vehicle construction.

NCCTE.2020.IT32.01.02 - Explain repairing damage.

NCCTE.2020.IT32.01.03 - Explain body fillers and sanding.

NCCTE.2020.IT32.01.04 - Explain additional repair methods.

Course: Collision Repair II - Refinishing **New**

NCCTE.2020.IT33 - Collision Repair II - Refinishing

NCCTE.2020.IT33.01.00 - Understand Refinishing.

NCCTE.2020.IT33.01.01 - Explain refinishing overview.

NCCTE.2020.IT33.01.02 - Identify refinishing equipment.

NCCTE.2020.IT33.01.03 - Explain starting the refinishing plan.

NCCTE.2020.IT33.01.04 - Explain surface preparation and undercoats.

NCCTE.2020.IT33.01.05 - Explain topcoat applications.

NCCTE.2020.IT33.01.06 - Explain preparation and application issues.

NCCTE.2020.IT33.01.07 - Explain volatile organic compounds (VOC's).

NCCTE.2020.IT33.02.00 - Understand Waterborne Products, Systems and Application.

NCCTE.2020.IT33.02.01 - Identify waterborne refinish materials.

NCCTE.2020.IT33.02.02 - Explain waterborne refinishing systems.

NCCTE.2020.IT33.02.03 - Explain storage, waste disposal, and waterborne conversions.

NCCTE.2020.IT33.03.00 - Understand Hazardous Airborne Pollutant Reduction.

NCCTE.2020.IT33.03.01 - Explain environmental compliance.

NCCTE.2020.IT33.03.02 - Explain refinish applications.

NCCTE.2020.IT33.04.00 - Understand Liquid and Solid Hazardous Waste Storage and Disposal.

NCCTE.2020.IT33.04.01 - Identify hazardous waste.

NCCTE.2020.IT33.04.02 - Explain proper storage of hazardous waste.

NCCTE.2020.IT33.04.03 - Explain proper disposal and records of hazardous waste.

Course: Drafting II - Engineering

NCCTE.2018.IV22 - Drafting II Engineering

NCCTE.2018.IV22.01.00 - Understand Basic Engineering Design and Industry Terms.



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NCCTE.2018.IV22.02.00 - Understand Engineering Design Concepts and Principles to Solve Problems.

NCCTE.2018.IV22.03.00 - Understand Manufacturing Processes.

NCCTE.2018.IV22.04.00 - Apply Parametric-Solid Modeling Techniques to create a 3D Model.

NCCTE.2018.IV22.05.00 - Understand Conventional Dimensioning & Tolerancing.

NCCTE.2018.IV22.06.00 - Apply Procedures to Create Working Drawings of a 3D Model.

NCCTE.2018.IV22.07.00 - Apply Procedures to Create Working Drawings of a 3D Model.

Course: Drafting III Engineering

NCCTE.2018.IV23 - Drafting III Engineering

NCCTE.2018.IV23.01.00 - Understand Requirements for Engineering & Manufacturing Employment.

NCCTE.2018.IV23.02.00 - Apply Engineering Design Concepts and Principles to solve problems.

NCCTE.2018.IV23.03.00 - Understand Advanced Manufacturing Processes.

NCCTE.2018.IV23.04.00 - Apply Advanced 3D Parametric-Solid Model and Assembly Creation Techniques

NCCTE.2018.IV23.05.00 - Apply Procedures to Create Working Drawings of a 3D Model and Assembly.

NCCTE.2018.IV23.06.00 - Apply Procedures to Create Sheet Metal Parts.

NCCTE.2018.IV23.07.00 - Apply Procedures to create Geometric Dimensions and Tolerances.

NCCTE.2018.IV23.08.00 - Apply Procedures to create a professional Portfolio.

Course: Technology Engineering and Design **Updated**

NCCTE.2020.TE11 - Technology Engineering and Design

NCCTE.2020.TE11.01.00 - Technological Innovations and Inventions: Understand that most inventions and innovations are the result of an evolutionary process and how a series of refinements leads to an improvement in a technological device.

NCCTE.2020.TE11.01.01 - Understand that most inventions and innovations are the result of an evolutionary process.

NCCTE.2020.TE11.01.02 - Understand how new technologies are used to create new processes and products.

NCCTE.2020.TE11.01.03 - Classify the factors that impact the demand and design of technology.

NCCTE.2020.TE11.01.04 - Explain the research and development process as a problem-solving approach.

NCCTE.2020.TE11.02.00 - History of Technology: Understand how technology changes history.

NCCTE.2020.TE11.02.01 - Analyze the historic significance and interaction of technological advancements within society and the environment.

NCCTE.2020.TE11.02.02 - Understand the evolutionary process of technological development throughout history.

NCCTE.2020.TE11.03.00 - Systems: Apply the universal systems model to troubleshoot technological



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systems.

NCCTE.2020.TE11.03.01 - Differentiate the nine core technologies and their relationship within larger systems and products.

NCCTE.2020.TE11.03.02 - Analyze a functional system using the Universal Systems Model.

NCCTE.2020.TE11.03.03 - Analyze the function of a product by reverse engineering.

NCCTE.2020.TE11.03.04 - Apply procedures to troubleshoot a product and create a diagram and/or simulation.

NCCTE.2020.TE11.04.00 - Design: Analyze the engineering design process as a systematic, iterative problem solving method that produces solutions to meet human wants and desires.

NCCTE.2020.TE11.04.01 - Apply design principles when generating solutions to problems.

NCCTE.2020.TE11.04.02 - Apply the engineering design process to produce solutions to problems

NCCTE.2020.TE11.04.03 - Interpret criteria and constraints to develop solutions to problems.

NCCTE.2020.TE11.04.04 - Apply procedures to construct models that meet design solutions.

NCCTE.2020.TE11.04.05 - Analyze data used in the engineering design process.

NCCTE.2020.TE11.04.06 - Propose an engineering design solution to the intended audience.

NCCTE.2020.TE11.05.00 - The Designed World: Analyze technology relationships to the designed world.

NCCTE.2020.TE11.05.01 - Analyze energy and power systems.

NCCTE.2020.TE11.05.02 - Analyze types of manufacturing and the properties of materials problems.

NCCTE.2020.TE11.05.03 - Classify the types of construction and the factors that affect the design of structures.

NCCTE.2020.TE11.05.04 - Classify information and communication systems and their interaction with society.

NCCTE.2020.TE11.05.05 - Explain the relationship between agriculture and transportation.

NCCTE.2020.TE11.05.06 - Explain the technologies integrated in telemedicine.

Course: Technological Design Updated

NCCTE.2020.TE12 - Technological Design

NCCTE.2020.TE12.01.00 - Introduction to Technological Design: Using a STEM approach to understand research methods in a global society to create a well-informed, creative, innovative, technologically literate citizen.

NCCTE.2020.TE12.01.01 - Understand emerging technologies.

NCCTE.2020.TE12.01.02 - Evaluate fundamentals of STEM.

NCCTE.2020.TE12.01.03 - Understand research, design and development.

NCCTE.2020.TE12.01.04 - Evaluate universal design.

NCCTE.2020.TE12.02.00 - Technological Design Skills: Implement a management process to plan, design, create, analyze and refine a product through modeling.

NCCTE.2020.TE12.02.01 - Understand and interpret the impact of product design and



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development.

NCCTE.2020.TE12.02.02 - Apply the design process to solve a technological problem.

NCCTE.2020.TE12.02.03 - Apply the design process to fabricate a prototype to test a design concept.

NCCTE.2020.TE12.02.04 - Understand mathematical modeling and other techniques used to test and refine design concepts.

NCCTE.2020.TE12.02.05 - Understand how to collect data to evaluate the quality of a product or services.

NCCTE.2020.TE12.03.00 - Technological Design Fundamentals: Apply systems thinking and the universal systems model to meet criteria and constraints.

NCCTE.2020.TE12.03.01 - Apply systems thinking through compromise and optimization by analyzing a system.

NCCTE.2020.TE12.03.02 - Evaluate communication systems.

NCCTE.2020.TE12.03.03 - Assess complex systems thinking.

NCCTE.2020.TE12.03.04 - Understand patents, criteria, constraints and other design requirements.

NCCTE.2020.TE12.04.00 - Technology and Society: Understand the effects of the use of technology on society and the environment include consequences that can have both positive and negative impacts.

NCCTE.2020.TE12.04.01 - Understand technology trade-offs and transfers.

NCCTE.2020.TE12.04.02 - Examine how technology impacts the community.

NCCTE.2020.TE12.04.03 - Evaluate how technology impacts the environment.

NCCTE.2020.TE12.05.00 - The Designed World: Understand the areas of the design world using the engineering design process to plan, organize, develop and control productivity to maximize efficiency.

NCCTE.2020.TE12.05.01 - Analyze types of bio-related and agricultural technologies.

NCCTE.2020.TE12.05.02 - Analyze types of energy, power and transportation.

NCCTE.2020.TE12.05.03 - Maximize resources in lean manufacturing.

NCCTE.2020.TE12.05.04 - Design using sustainable construction procedures.

Course: Engineering Design Updated

NCCTE.2020.TE13 - Engineering Design

NCCTE.2020.TE13.01.00 - Fundamentals of Engineering Design: Understand the fundamental principles which impact human thinking and actions when engaged in the process of designing technological products.

NCCTE.2020.TE13.01.01 - Understand how human and Environmental Factors impact Design.

NCCTE.2020.TE13.01.02 - Understand how local, state and federal policies impact design

NCCTE.2020.TE13.01.03 - Understand how Industrial Factors impact design.

NCCTE.2020.TE13.01.04 - Understand Research techniques and tools.

NCCTE.2020.TE13.01.05 - Analyze Market and Profit Influence.

NCCTE.2020.TE13.01.06 - Apply the Engineering Design Process.



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NCCTE.2020.TE13.01.07 - Identify and Prioritize Design Constraints.

NCCTE.2020.TE13.02.00 - Elements of Design: Apply scientific concepts and mathematical calculations used by engineers and designers for specific applications in Design.

NCCTE.2020.TE13.02.01 - Apply critical factors that lead to design improvements.

NCCTE.2020.TE13.02.02 - Analyze the 9 Core Technologies.

NCCTE.2020.TE13.02.03 - Apply the design process to fabricate a prototype to test a design concept.

NCCTE.2020.TE13.02.04 - Evaluate competing design values to optimize critical decisions.

NCCTE.2020.TE13.03.00 - Modeling, Prototyping, and Protecting Ideas: Apply structured design concepts to solve diverse engineering problems..

NCCTE.2020.TE13.03.01 - Analyze diverse examples of "Technology Transfer".

NCCTE.2020.TE13.03.02 - Understand the importance of the Patent Process, and technology spin offs

NCCTE.2020.TE13.03.03 - Apply engineering resources to solve specific design problems.

NCCTE.2020.TE13.03.04 - Apply scientific principle using material science concepts to solve design problems.

NCCTE.2020.TE13.03.05 - Evaluate the role of creativity in diverse design activities.

NCCTE.2020.TE13.03.06 - Understand patents, criteria, constraints and other design requirements.

NCCTE.2020.TE13.03.07 - Apply modeling and prototyping concepts to solve design problems

NCCTE.2020.TE13.04.00 - Product, Systems Engineering and Analysis Management: Apply project management through the Engineering Design Process.

NCCTE.2020.TE13.04.01 - Apply contemporary project management.

NCCTE.2020.TE13.04.02 - Apply a quality assurance methods to ensure optimum performance.

NCCTE.2020.TE13.04.03 - Apply the Engineering Design Process to produce a product or system.

NCCTE.2020.TE13.04.04 - Evaluate the results of the Engineering Design Process, using quality assurance processes.

