

# NORTH CAROLINA CAREER AND TECHNICAL EDUCATION STANDARDS

## Trade, Technology, Engineering, and Industrial Education

**Grade:** Grade 9 - 12

**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.

**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



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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 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.

