

## Building and Construction Technology II: Construction Technology

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Delsea One Hours: Wednesday and Friday

2019-2020

Elective, 5 Credits

Period X, Y

**Course Description:** This course is designed to allow students to expand and apply technical knowledge and skills in the fields of carpentry, masonry, stairs and stairwell calculations, interior walls and exterior sheathing, roofing siding, and water protection systems. Assessments include, but are not limited to: quizzes, tests, MPA's, lab activities, skill mastery demonstrations, logbooks, and project estimation research. An emphasis will be placed on professionalism and demonstrating a positive work ethic on a job site. Participation in TSA will reinforce cluster knowledge and skills. The course addresses the NJSL Standard 9.3 for Architecture & Construction, the Career Ready Practices,

**Prerequisites:** Building & Construction Technology I: Fix It

**Objectives:** Upon completion of this course, students will be able to:

- Masonry:
  - Describe modern masonry materials and techniques and recognize the basic safety precautions when working with masonry materials.
  - Explain how to mix mortar and lay masonry units.
  - Describe the skills, attitudes, and abilities needed to be a successful mason.
  - Install concrete masonry units(CMU), brick How to cut Brick, and CMU's.
- Construction:
  - Describes the layout and construction procedures for floor systems, including how to read and interpret construction drawings and specifications, and how to identify different types of framing systems, floor system components, and floor system materials.
  - Provide an overview of ceiling and roof framing, including the components of ceiling and roof framing, the different types of roofs used in residential construction, and the use of trusses in basic roof framing.
  - Review the methods for laying out rafters, erecting a gable roof, framing a basic gable end wall, and installing roof sheathing are introduced.
  - Discuss how to properly prepare the roof deck and install roofing for residential and commercial buildings.
  - Layout and framing walls, including roughing-in door and window openings, constructing corners and partition Ts, bracing walls and applying sheathing. various types of exterior finish materials and their installation procedures, including wood, metal, vinyl, and fiber-cement siding.
  - Design and build different types of stairs and the common building code requirements related to stairs focusing on the techniques for measuring and calculating rise, run, and stairwell openings; laying out stringers; and fabricating basic stairways.

**Projects:** Build a small structure, electrical panel installation, cabinet installation in a classroom, siding installation, roofing, stair fabrication, window installation, block and brick wall layout and construction

## **Building and Construction Technology II: Construction Technology**

**Resources:** NCCER, Youtube, Google Classroom, How-to manuals, Relationships with local contractors

### **Career Ready Practices**

**CRP1** - Act as a responsible and contributing citizen and employee **CRP2** - Apply appropriate academic and technical skills **CRP4** - Communicate clearly and effectively and with reason **CRP6** - Demonstrate creativity and innovation **CRP8** - Utilize critical thinking to make sense of problems and persevere in solving them. **CRP9** - Model integrity, ethical leadership, and effective management. **CRP10** - Plan education and career paths aligned to personal goals. **CRP11** - Use technology to enhance productivity. **CRP12** - Work productively in teams while using cultural global competence.

### **PATHWAY: CONSTRUCTION (AC-CST)**

- 9.3.12.AC-CST.1 Describe contractual relationships between all parties involved in the building process.
- 9.3.12.AC-CST.2 Describe the approval procedures required for the successful completion of a construction project.
- 9.3.12.AC-CST.3 Implement testing and inspection procedures to ensure the successful completion of a construction project.
- 9.3.12.AC-CST.4 Apply scheduling practices to ensure the successful completion of a construction project.
- 9.3.12.AC-CST.5 Apply practices and procedures required to maintain job site safety.
- 9.3.12.AC-CST.6 Manage relationships with internal and external parties to successfully complete construction projects.
- 9.3.12.AC-CST.7 Compare and contrast the building systems and components required for a construction project.
- 9.3.12.AC-CST.8 Demonstrate the construction crafts required for each phase of a construction project.
- 9.3.12.AC-CST.9 Safely use and maintain appropriate tools, machinery, equipment, and resources to accomplish construction project goals.

### **PATHWAY: MAINTENANCE/OPERATIONS (AC-MO)**

- 9.3.12.AC-MO.1 Recognize and employ universal construction signs and symbols to function safely in the workplace.
- 9.3.12.AC-MO.2 Use troubleshooting procedures when solving a maintenance problem in buildings.
- 9.3.12.AC-MO.3 Apply construction skills when repairing, restoring, or renovating existing buildings.
- 9.3.12.AC-MO.4 Determine work required to repair or renovate an existing building.
- 9.3.12.AC-MO.5 Plan and practice preventative maintenance activities to service existing buildings.
- 9.3.12.AC-MO.6 Maintain and inspect building systems to achieve safe and efficient operation of buildings.

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### **GRADING**

- Safety First ( including cell phones) 20%
- Participation ( individual and group) 20%
- Projects 30%
- Testing/Certifications 30%

### **CLASSROOM NEEDS**

- Chromebook
- Pencils and Pens
- 1- Three Subject Spiral Notebook
- 3 Pairs of Rubber Coated Work Gloves (available at Home Depot, Lowes)