

ALL the knowledge previously learned, not only in Technology Education but also across the curriculum. See the (AAiT) framework for more information.

Work-Based Experience (WBE) - course number 8601800 is the appropriate course to provide Technology Education students with the opportunity, as Student Learners, to gain real world practical, first-hand exposure in broad occupational clusters or industry sectors through a structured, compensated or uncompensated experience. Work-Based Experience is also designed to give the Student Learners an opportunity to apply and integrate the knowledge, skills, and abilities acquired during their School-Based Experience to actual work situations independent of school facilities. At least one credit of a Technology Education program consisting of three credits must be completed before enrolling in WBE. See the (WBE) framework for more information.

The Intermediate and Advanced courses in this program may articulate into post-secondary Tech-Prep 2 + 2 programs when taken in sequence. Tech-Prep 2 + 2 programs require articulation agreements between secondary and post-secondary educational agencies.

Course substitutions as defined in the Comprehensive Course Table for this program area may be used to qualify a student for Florida's Gold Seal Vocational Scholarship, providing all other eligibility requirements are met. The comprehensive course table requirements are available online at <<http://nwrdc.fsu.edu/fnbpcm02>>. Gold Seal Vocational Scholarship requirements are available online at <<http://www.myfloridaeducation.com/brfuture/gsvrequire.htm>>.

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Adult students with disabilities must self-identify and request such services. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

The student should demonstrate an understanding of prior grade specific knowledge covered in the national *Standards for Technological Literacy** (STL) and the Florida *Sunshine State Standards*. Benchmarks followed by a reference code indicate alignment with one or both of these documents.

* *Standards for Technological Literacy: Content for the Study of Technology.* Copyright 2000 by the International Technology Education Association. Reston, VA.

IV. **INTENDED OUTCOMES:** After successfully completing this program, the student will be able to:

TECHNOLOGICAL LITERACY STANDARDS

- 1.0 Demonstrate an understanding of the characteristics and scope of technology.
- 2.0 Demonstrate an understanding of the core concepts of technology.

- 3.0 Demonstrate an understanding of the relationships among technologies and the connection between technology and other fields of study.
- 4.0 Demonstrate an understanding of the effects of technology on the environment.
- 5.0 Demonstrate an understanding of the role of society in the development and use of technology.
- 6.0 Demonstrate an understanding of the attributes of design.
- 7.0 Demonstrate an understanding of the engineering design.
- 8.0 Demonstrate an understanding of the role of troubleshooting, research and development, invention and innovation, and experimentation in problem solving.
- 9.0 Demonstrate the abilities to apply the design process.
- 10.0 Demonstrate the abilities to use and maintain technological products and systems.
- 11.0 Demonstrate the abilities to assess the impact of products and systems.
- 12.0 Demonstrate an understanding of and be able to select and use manufacturing technologies.
- 13.0 Demonstrate an understanding of and be able to select and use construction technologies.

TECHNICAL CONTENT STANDARDS

- 14.0 Demonstrate safe and appropriate use of tools, machines and materials in construction technology.
- 15.0 Demonstrate the ability to properly identify, organize, plan, and allocate resources.
- 16.0 Demonstrate basic technical knowledge and skills about construction technology.
- 17.0 Demonstrate technical knowledge and skills about selecting and preparing a construction site.
- 18.0 Demonstrate technical knowledge and skills about designing and engineering constructed works.
- 19.0 Demonstrate technical knowledge and skills about contracting, estimating, bidding, and scheduling.
- 20.0 Demonstrate technical knowledge and skills about constructing substructures.
- 21.0 Demonstrate technical knowledge and skills about constructing superstructures.
- 22.0 Demonstrate technical knowledge and skills about installing utilities.
- 23.0 Demonstrate technical knowledge and skills about enclosing superstructures.
- 24.0 Demonstrate technical knowledge and skills about interior and exterior finishing of a constructed structure.
- 25.0 Apply advanced technical knowledge and skills about construction technology.
- 26.0 Perform advanced study and technical skills related to construction technology.
- 27.0 Demonstrate technical knowledge and skills about regional planning and the construction of civil or community structures.
- 28.0 Conduct structural tests on constructed structures and construction materials.
- 29.0 Conduct a research and experimentation project on a construction technology process or material.
- 30.0 Demonstrate an understanding of career opportunities and requirements in the field of construction technology.

**Florida Department of Education
STUDENT PERFORMANCE STANDARDS**

Course Number: 8600710
Course Title: Construction Technology I
Course Credit: 1

COURSE DESCRIPTION: This course provides students with an introduction to the knowledge, human relations, and technical skills of construction technology.

01.0 DEMONSTRATE AN UNDERSTANDING OF THE CHARACTERISTICS AND SCOPE OF TECHNOLOGY.--The student will be able to:

- 01.01 Discuss the nature and development of technological knowledge and processes. STL.1.J, LA.B.2.4, LA.C.3.4, SC.H.3.4
- 01.02 Explain the rapid increase in the rate of technological development and diffusion. STL.1.K, LA.B.2.4, LA.D.2.4, MA.B.1.4
- 01.03 Conduct specific goal-directed research related to inventions and innovations. STL.1.L, LA.A.1.4, LA.A.2.4, LA.B.2.4

02.0 DEMONSTRATE AN UNDERSTANDING OF THE CORE CONCEPTS OF TECHNOLOGY.--The student will be able to:

- 02.01 Identify systems thinking logic and creativity with appropriate compromises in complex real-life problems. STL.2.W
- 02.02 Define technological systems, which are the building blocks of technology and are embedded within larger technological, social, and environmental systems. STL.2.X, LA.D.2.4
- 02.03 Identify the stability of a technological system and its influence by all of the components in the system, especially those in the feedback loop. STL.2.Y
- 02.04 Identify resources involving trade-offs between competing values, such as availability, cost, desirability, and waste. STL.2.Z, SS.D.1.4
- 02.05 Identify the criteria and constraints of a product or system and then determine how they affect the final design and development. STL.2.AA, MA.A.5.4, MA.B.1.4, MA.B.3.4, MA.B.4.4, MA.E.3.4, SC.H.1.4
- 02.06 Define a management system as the process of planning, organizing, and controlling work. STL.2.EE

03.0 DEMONSTRATE AN UNDERSTANDING OF THE CULTURAL, SOCIAL, ECONOMIC, AND POLITICAL EFFECTS OF TECHNOLOGY.--The student will be able to:

- 03.01 Identify changes caused by the use of technology ranging from gradual to rapid and from subtle to obvious. STL.4.H
- 03.02 Classify the use of technology involving weighing the trade-offs between the positive and the negative effects. STL.4.I, LA.B.2.4

04.0 DEMONSTRATE AN UNDERSTANDING OF THE EFFECTS OF TECHNOLOGY ON THE ENVIRONMENT.--The student will be able to:

- 04.01 List trade-offs of developing technologies to reduce the use of resources. STL.5.H, SC.G.2.4, SS.D.1.4

- 04.02 Identify technologies devised to reduce the negative consequences of other technologies. STL.5.K
- 04.03 Discuss the implementation of technologies involving the weighing of trade-offs between predicted positive and negative effects on the environment. STL.5.L, SC.G.2.4, SC.H.3.4
- 05.0 DEMONSTRATE AN UNDERSTANDING OF THE INFLUENCE OF TECHNOLOGY ON HISTORY.--The student will be able to:
- 05.01 Research how the evolution of civilization has been directly affected by, and has in turn affected the development and use of tools and materials. STL.7.H, LA.A.1.4, LA.A.2.4, LA.B.2.4, SC.H.3.4, SS.A.2.4
- 05.02 Define the history of technology as a powerful force in reshaping the social, cultural, political, and economic landscape. STL.7.I, LA.D.2.4, SS.A.2.4
- 06.0 DEMONSTRATE AN UNDERSTANDING OF THE ATTRIBUTES OF DESIGN.--The student will be able to:
- 06.01 Recognize the design process; including defining a problem, brainstorming, researching and generating ideas, identifying criteria and specifying constraints, exploring possibilities, selecting an approach, developing a design proposal, making a model or prototype, testing and evaluating the design using specifications, refining the design, creating or making it, and communicating processes and results. STL.8.H
- 06.02 Restate design problems that are seldom presented in a clearly defined form. STL.8.I, LA.D.1.4, LA.D.2.4
- 06.03 Check and critique a design continually, and improve and revise the idea of the design as needed. STL.8.J, SC.H.1.4
- 06.04 List competing requirements of a design, such as criteria, constraints, and efficiency. STL.8.K, MA.A.3.4, MA.B.1.4, MA.B.3.4, MA.B.4.4, MA.D.1.4, MA.D.2.4, MA.E.1.4
- 07.0 DEMONSTRATE AN UNDERSTANDING OF ENGINEERING DESIGN.--The student will be able to:
- 07.01 Identify design principles used to evaluate existing designs, to collect data, and to guide the design process. STL.9.I
- 07.02 Describe the influence of personal characteristics, such as creativity, resourcefulness, and the ability to visualize and think abstractly on the Engineering Design process. STL.9.J, LA.D.1.4, SC.H.1.4
- 07.03 Construct a prototype or a working model used to test a design concept by making actual observations and necessary adjustments. STL.9.K, MA.B.1.4, SC.H.1.4, SC.H.3.4
- 07.04 Identify factors taken into account in the process of engineering. STL.9.L
- 08.0 DEMONSTRATE AN UNDERSTANDING OF THE ROLE OF TROUBLESHOOTING, RESEARCH AND DEVELOPMENT, INVENTION AND INNOVATION, AND EXPERIMENTATION IN PROBLEM SOLVING.--The student will be able to:
- 08.01 Define research and development as a specific problem solving approach that is used intensively in business and industry to prepare devices and systems for the marketplace. STL.10.I

- 08.02 Identify research needed to solve technological problems. STL.10.J, LA.A.1.4, LA.A.2.4
 - 08.03 Differentiate between technological and non-technological problems, and identify which problems can be solved using technology. STL.10.K, SC.H.1.4
 - 08.04 Utilize a multidisciplinary approach to solving technological problems. STL.10.L, MA.A.1.4, MA.A.3.4, MA.B.1.4, MA.B.3.4, MA.B.4.4, MA.E.1.4, MA.E.3.4, SC.H.1.4, SC.H.3.4
- 09.0 DEMONSTRATE THE ABILITIES TO APPLY THE DESIGN PROCESS.--The student will be able to:
- 09.01 Identify the design problem to solve and decide whether or not to address it. STL.11.M, SC.H.1.4
 - 09.02 List criteria and constraints and determine how these will affect the design process. STL.11.N, MA.A.3.4, MA.B.1.4, MA.B.3.4, MA.B.4.4, MA.D.1.4, MA.D.2.4, MA.E.1.4, SC.H.1.4, SC.H.3.4
 - 09.03 Refine a design by using prototypes and modeling to ensure quality, efficiency, and productivity of the final product. STL.11.O, SC.H.3.4
 - 09.04 Evaluate the design solution using conceptual, physical, and mathematical models at various intervals of the design process in order to check for proper design and to note areas where improvements are needed. STL.11.P, MA.A.4.4, MA.B.1.4, MA.B.3.4, MA.B.4.4, SC.H.1.4, SC.H.3.4
 - 09.05 Develop a product or system using a design process. STL.11.Q
 - 09.06 Evaluate final solutions and communicate observations, processes, and results of the entire design process, using verbal, graphic, quantitative, virtual, and written means, in addition to three-dimensional models. STL.11.R, LA.B.2.4, LA.C.3.4, MA.B.4.4, MA.D.2.4, MA.E.1.4, MA.E.2.4, MA.E.3.4, SC.H.1.4, SC.H.3.4
- 10.0 DEMONSTRATE THE ABILITIES TO USE AND MAINTAIN TECHNOLOGICAL PRODUCTS AND SYSTEMS.--The student will be able to:
- 10.01 Document processes and procedures and communicate them to different audiences using appropriate oral and written techniques. STL.12.L, LA.B.2.4, LA.B.1.4, LA.C.3.4
 - 10.02 Diagnose a system that is malfunctioning and use tools, materials, machines, and knowledge to repair it. STL.12.M
 - 10.03 Troubleshoot, analyze, and maintain systems to ensure safe and proper function and precision. STL.12.N
 - 10.04 Operate systems so that they function in the way they were designed. STL.12.O
 - 10.05 Use computers and calculators to access, retrieve, organize, process, maintain, interpret, and evaluate data and information in order to communicate. STL.12.P, LA.A.2.4, MA.E.1.4
- 11.0 DEMONSTRATE THE ABILITIES TO ASSESS THE IMPACT OF PRODUCTS AND SYSTEMS.--The student will be able to:
- 11.01 Collect information and evaluate its quality. STL.13.J, LA.A.2.4, SC.H.1.4
 - 11.02 Synthesize data, analyze trends, and draw conclusions regarding the effect of technology on the individual, society, and the environment. STL.13.K, LA.A.2.4, SC.G.1.4, SC.G.2.4, SC.H.1.4

- 11.03 Define assessment techniques, such as trend analysis and experimentation to make decisions about the future development of technology. STL.13.L, LA.A.2.4, MA.E.1.4, MA.E.2.4, MA.E.3.4
 - 11.04 Identify forecasting techniques to evaluate the results of altering natural systems. STL.13.M, MA.E.3.4, SC.G.2.4
- 12.0 DEMONSTRATE AN UNDERSTANDING OF AND BE ABLE TO SELECT AND USE MANUFACTURING TECHNOLOGIES.--The student will be able to:
- 12.01 Service products to keep them in good operating condition. STL.19.L
 - 12.02 Classify materials based on their qualities as natural, synthetic, or mixed. STL.19.M
 - 12.03 Classify goods as durable goods designed to operate for a long period of time, or non-durable goods designed to operate for a short period of time. STL.19.N
- 13.0 DEMONSTRATE AN UNDERSTANDING OF AND BE ABLE TO SELECT AND USE CONSTRUCTION TECHNOLOGIES.--The student will be able to:
- 13.01 Define infrastructure as the underlying base or basic framework of a system. STL.20.J
 - 13.02 Identify a variety of processes and procedures used in constructing structures. STL.20.K
 - 13.03 Identify requirements involved in the design of structures. STL.20.L
 - 13.04 Recommend maintenance, alterations, or renovations to improve a structure or alter its intended use. STL.20.M
 - 13.05 Identify prefabricated materials used in some structures. STL.20.N
- 14.0 DEMONSTRATE SAFE AND APPROPRIATE USE OF TOOLS, MACHINES, AND MATERIALS IN CONSTRUCTION TECHNOLOGY.--The student will be able to:
- 14.01 Select appropriate tools, procedures, and/or.
 - 14.02 Demonstrate the safe usage of appropriate tools, procedures, and operation of equipment.
 - 14.03 Follow laboratory safety rules and procedures.
 - 14.04 Demonstrate good housekeeping at workstation within total laboratory.
 - 14.05 Identify color-coding safety standards.
 - 14.06 Explain fire prevention and safety precautions and practices for extinguishing fires.
 - 14.07 Identify harmful effects/potential dangers of familiar hazardous substances/devices to people and the environment.
- 15.0 DEMONSTRATE THE ABILITY TO PROPERLY IDENTIFY, ORGANIZE, PLAN, AND ALLOCATE RESOURCES--The student will be able to:
- 15.01 Demonstrate the ability to select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
 - 15.02 Use or prepare budgets, make forecasts, keep records, and make adjustments to meet objectives.
 - 15.03 Demonstrate the ability to acquire, store, allocate, and use materials or space efficiently.
 - 15.04 Display knowledge of the efficient use of human resources.

- 16.0 DEMONSTRATE BASIC TECHNICAL KNOWLEDGE AND SKILLS ABOUT CONSTRUCTION TECHNOLOGY--The student will be able to:
- 16.01 Demonstrate basic technical knowledge and skills about student performance standards 14.01 through 21.02.
 - 16.02 Demonstrate basic technical knowledge and skills in the construction of a structure.
- 17.0 DEMONSTRATE TECHNICAL KNOWLEDGE AND SKILLS ABOUT SELECTING AND PREPARING A CONSTRUCTION SITE--The student will be able to:
- 17.01 Explain the steps and processes for identifying, negotiating, selecting, and acquiring sites for construction.
 - 17.02 Explain and perform the elementary technical skills for surveying or mapping a construction site.
 - 17.03 Describe the tools, equipment, and technical skills required for excavating a construction site.
 - 17.04 Explain the load bearing importance of the earth and the reason for soils testing at a construction site.
- 18.0 DEMONSTRATE TECHNICAL KNOWLEDGE AND SKILLS ABOUT DESIGNING AND ENGINEERING CONSTRUCTED WORKS--The student will be able to:
- 18.01 Read and interpret architectural drawings, blueprints, symbols, and construction plans.
 - 18.02 Describe building codes, permits, and inspection requirements.
 - 18.03 Sketch or draw a plan for a construction project.
- 19.0 DEMONSTRATE TECHNICAL KNOWLEDGE AND SKILLS ABOUT CONTRACTING, ESTIMATING, BIDDING, AND SCHEDULING--The student will be able to:
- 19.01 Estimate construction costs using various methods including a computer.
 - 19.02 Read and prepare bid invitations for contractors to build a construction project.
 - 19.03 Establish criteria for awarding a construction contract.
 - 19.04 Describe the content of a construction contract and performance bond.
- 20.0 DEMONSTRATE TECHNICAL KNOWLEDGE AND SKILLS ABOUT CONSTRUCTING SUBSTRUCTURES--The student will be able to:
- 20.01 Describe the types, parts, and purposes of foundations.
 - 20.02 Describe the tools, materials, and processes for setting foundations.
 - 20.03 Mix, place, and finish concrete for a floor, wall, or footing.
 - 20.04 Perform the masonry technical skills of laying brick or block.
- 21.0 DEMONSTRATE TECHNICAL KNOWLEDGE AND SKILLS ABOUT CONSTRUCTING SUPERSTRUCTURES--The student will be able to:
- 21.01 Describe mass, solid wall, frame, and air-supported superstructures.
 - 21.02 Describe the materials used in the construction of superstructures.
 - 21.03 Use technical carpentry skills, tools, and materials in constructing a wood frame superstructure.

- 21.04 Use technical construction skills in building a steel or concrete frame superstructure.
- 21.05 Describe factory manufacturing of superstructures and modules.
- 22.0 DEMONSTRATE TECHNICAL KNOWLEDGE AND SKILLS ABOUT INSTALLING UTILITIES--
The student will be able to:
 - 22.01 Describe public utility systems for supplying water, electricity, natural gas, and sewerage.
 - 22.02 Describe the functions and operation of heating, cooling, and ventilating systems.
 - 22.03 Demonstrate a technical knowledge of plumbing and electrical systems in homes or buildings.
 - 22.04 Use the technical tools and skills to install plumbing and electrical systems utilities.
 - 22.05 Diagnose and troubleshoot problems with utility systems.
- 23.0 DEMONSTRATE TECHNICAL KNOWLEDGE AND SKILLS ABOUT ENCLOSING SUPERSTRUCTURES--The student will be able to:
 - 23.01 Describe the different types of materials and methods for constructing interior and exterior walls.
 - 23.02 Describe the different types of materials and methods for laying floors and for building roofs.
 - 23.03 Describe the different types of methods for constructing or installing windows and doors.
 - 23.04 Describe the purposes, materials, and methods for insulating enclosed superstructures.
 - 23.05 Perform the technical skills of enclosing a superstructure.
- 24.0 DEMONSTRATE TECHNICAL KNOWLEDGE AND SKILLS ABOUT INTERIOR AND EXTERIOR FINISHING OF A CONSTRUCTED STRUCTURE--The student will be able to:
 - 24.01 Describe the different types of materials and methods for trimming, painting, and decorating a constructed structure.
 - 24.02 Describe the types of accessories and fixtures that are installed to finish completed construction.
 - 24.03 Explain the materials and methods used for the finishing processes of paving and landscaping.
 - 24.04 Participate in processes of finishing a construction project and site.

**Florida Department of Education
STUDENT PERFORMANCE STANDARDS**

Course Number: 8600720
Course Title: Construction Technology II
Course Credit: 1

COURSE DESCRIPTION: This course provides students with an intermediate understanding of the knowledge, human relations, and technical skills of construction technology.

01.0 DEMONSTRATE AN UNDERSTANDING OF THE CHARACTERISTICS AND SCOPE OF TECHNOLOGY.--The student will be able to:

- 01.01 Illustrate the nature and development of technological knowledge and processes. STL.1.J, LA.B.2.4, LA.C.3.4, SC.H.3.4
- 01.02 Graph the rapid increase in the rate of technological development and diffusion. STL.1.K, LA.B.2.4, LA.D.2.4, MA.B.1.4
- 01.03 Conduct specific goal-directed research related to inventions and innovations. STL.1.L, LA.A.1.4, LA.A.2.4, LA.B.2.4
- 01.04 Evaluate current technological developments that are/were driven by profit motive and the market. STL.1.M, SS.D.1.4

02.0 DEMONSTRATE AN UNDERSTANDING OF THE CORE CONCEPTS OF TECHNOLOGY.--The student will be able to:

- 02.01 Apply systems thinking logic and creativity with appropriate compromises in complex real-life problems. STL.2.W
- 02.02 Discuss technological systems, which are the building blocks of technology and are embedded within larger technological, social, and environmental systems. STL.2.X, LA.D.2.4
- 02.03 Assess the stability of a technological system and its influence by all of the components in the system, especially those in the feedback loop. STL.2.Y
- 02.04 Select resources involving trade-offs between competing values, such as availability, cost, desirability, and waste. STL.2.Z, SS.D.1.4
- 02.05 Identify the criteria and constraints of a product or system and then determine how they affect the final design and development. STL.2.AA, MA.A.5.4, MA.B.1.4, MA.B.3.4, MA.B.4.4, MA.E.3.4, SC.H.1.4
- 02.06 Discuss new technologies that create new processes. STL.2.CC
- 02.07 Implement a quality control process to ensure that a product, service or system meets established criteria. STL.2.DD
- 02.08 Organize a management system as the process of planning, organizing, and controlling work. STL.2.EE

03.0 DEMONSTRATE AN UNDERSTANDING OF THE CULTURAL, SOCIAL, ECONOMIC, AND POLITICAL EFFECTS OF TECHNOLOGY.--The student will be able to:

- 03.01 Identify changes caused by the use of technology ranging from gradual to rapid and from subtle to obvious. STL.4.H
 - 03.02 Compare the use of technology involving weighing the trade-offs between the positive and the negative effects. STL.4.I, LA.B.2.4
 - 03.03 Debate the cultural, social, economic, and political changes caused by the transfer of a technology from one society to another. STL.4.K, LA.B.2.4, LA.E.1.4, SC.H.3.4
- 04.0 DEMONSTRATE AN UNDERSTANDING OF THE EFFECTS OF TECHNOLOGY ON THE ENVIRONMENT.--The student will be able to:
- 04.01 Compare trade-offs of developing technologies to reduce the use of resources. STL.5.H, SC.G.2.4, SS.D.1.4
 - 04.02 Make decisions about the implementation of technologies involving the weighing of trade-offs between predicted positive and negative effects on the environment. STL.5.L, SC.G.2.4, SC.H.3.4
- 05.0 DEMONSTRATE AN UNDERSTANDING OF THE INFLUENCE OF TECHNOLOGY ON HISTORY.--The student will be able to:
- 05.01 Research the history of technology as a powerful force in reshaping the social, cultural, political, and economic landscape. STL.7.I, LA.D.2.4, SS.A.2.4
 - 05.02 Debate that early in the history of technology, the development of many tools and machines was based not on scientific knowledge but on technological know-how. STL.7.J, SS.A.1.4
 - 05.03 Discuss the Iron Age as the use of iron and steel as the primary materials for tools. STL.7.K
 - 05.04 Discuss the Middle Ages and its development of many technological devices that produced long-lasting effects on technology and society. STL.7.L, SS.A.2.4
 - 05.05 Discuss the Renaissance, a time of rebirth of the arts and humanities, as an important development in the history of technology. STL.7.M, SS.A.3.4
 - 05.06 Discuss the Industrial Revolution and the development of continuous manufacturing, sophisticated transportation and communication systems, advanced construction practices, and improved education and leisure time. STL.7.N, SS.A.5.4
 - 05.07 Discuss the Information Age and its placement of emphasis on the processing and exchange of information. STL.7.O, SS.A.5.4
- 06.0 DEMONSTRATE AN UNDERSTANDING OF THE ATTRIBUTES OF DESIGN.--The student will be able to:
- 06.01 Describe the design process; including defining a problem, brainstorming, researching and generating ideas, identifying criteria and specifying constraints, exploring possibilities, selecting an approach, developing a design proposal, making a model or prototype, testing and evaluating the design using specifications, refining the design, creating or making it, and communicating processes and results. STL.8.H
 - 06.02 Translate design problems that are seldom presented in a clearly defined form. STL.8.I, LA.D.1.4, LA.D.2.4
 - 06.03 Evaluate a design continually, and improve and revise the idea of the design as needed. STL.8.J, SC.H.1.4

- 06.04 Analyze competing requirements of a design, such as criteria, constraints, and efficiency. STL.8.K, MA.A.3.4, MA.B.1.4, MA.B.3.4, MA.B.4.4, MA.D.1.4, MA.D.2.4, MA.E.1.4
- 07.0 DEMONSTRATE AN UNDERSTANDING OF ENGINEERING DESIGN.--The student will be able to:
- 07.01 Investigate design principles used to evaluate existing designs, to collect data, and to guide the design process. STL.9.I
- 07.02 Examine the influence of personal characteristics, such as creativity, resourcefulness, and the ability to visualize and think abstractly on the Engineering Design process. STL.9.J, LA.D.1.4, SC.H.1.4
- 07.03 Construct a prototype or a working model used to test a design concept by making actual observations and necessary adjustments. STL.9.K, MA.B.1.4, SC.H.1.4, SC.H.3.4
- 07.04 Evaluate factors taken into account in the process of engineering. STL.9.L
- 08.0 DEMONSTRATE AN UNDERSTANDING OF THE ROLE OF TROUBLESHOOTING, RESEARCH AND DEVELOPMENT, INVENTION AND INNOVATION, AND EXPERIMENTATION IN PROBLEM SOLVING.--The student will be able to:
- 08.01 Employ research and development as a specific problem solving approach that is used intensively in business and industry to prepare devices and systems for the marketplace. STL.10.I
- 08.02 Conduct research needed to solve technological problems. STL.10.J, LA.A.1.4, LA.A.2.4
- 08.03 Differentiate between technological and non-technological problems, and identify which problems can be solved using technology. STL.10.K, SC.H.1.4
- 08.04 Utilize a multidisciplinary approach to solving technological problems. STL.10.L, MA.A.1.4, MA.A.3.4, MA.B.1.4, MA.B.3.4, MA.B.4.4, MA.E.1.4, MA.E.3.4, SC.H.1.4, SC.H.3.4
- 09.0 DEMONSTRATE THE ABILITIES TO APPLY THE DESIGN PROCESS.--The student will be able to:
- 09.01 Interpret the design problem to solve and decide whether or not to address it. STL.11.M, SC.H.1.4
- 09.02 Evaluate criteria and constraints and determine how these will affect the design process. STL.11.N, MA.A.3.4, MA.B.1.4, MA.B.3.4, MA.B.4.4, MA.D.1.4, MA.D.2.4, MA.E.1.4, SC.H.1.4, SC.H.3.4
- 09.03 Refine a design by using prototypes and modeling to ensure quality, efficiency, and productivity of the final product. STL.11.O, SC.H.3.4
- 09.04 Evaluate the design solution using conceptual, physical, and mathematical models at various intervals of the design process in order to check for proper design and to note areas where improvements are needed. STL.11.P, MA.A.4.4, MA.B.1.4, MA.B.3.4, MA.B.4.4, SC.H.1.4, SC.H.3.4
- 09.05 Produce a product or system using a design process. STL.11.Q
- 09.06 Evaluate final solutions and communicate observations, processes, and results of the entire design process, using verbal, graphic, quantitative, virtual, and written means, in addition to three-

dimensional models. STL.11.R, LA.B.2.4, LA.C.3.4, MA.B.4.4, MA.D.2.4, MA.E.1.4, MA.E.2.4, MA.E.3.4, SC.H.1.4, SC.H.3.4

10.0 DEMONSTRATE THE ABILITIES TO USE AND MAINTAIN TECHNOLOGICAL PRODUCTS AND SYSTEMS.--The student will be able to:

- 10.01 Document processes and procedures and communicate them to different audiences using appropriate oral and written techniques. STL.12.L, LA.B.2.4, LA.B.1.4, LA.C.3.4
- 10.02 Diagnose a system that is malfunctioning and use tools, materials, machines, and knowledge to repair it. STL.12.M
- 10.03 Troubleshoot, analyze, and maintain systems to ensure safe and proper function and precision. STL.12.N
- 10.04 Operate systems so that they function in the way they were designed. STL.12.O
- 10.05 Use computers and calculators to access, retrieve, organize, process, maintain, interpret, and evaluate data and information in order to communicate. STL.12.P, LA.A.2.4, MA.E.1.4

11.0 DEMONSTRATE THE ABILITIES TO ASSESS THE IMPACT OF PRODUCTS AND SYSTEMS.--The student will be able to:

- 11.01 Collect information and evaluate its quality. STL.13.J, LA.A.2.4, SC.H.1.4
- 11.02 Synthesize data, analyze trends, and draw conclusions regarding the effect of technology on the individual, society, and the environment. STL.13.K, LA.A.2.4, SC.G.1.4, SC.G.2.4, SC.H.1.4
- 11.03 Apply assessment techniques, such as trend analysis and experimentation to make decisions about the future development of technology. STL.13.L, LA.A.2.4, MA.E.1.4, MA.E.2.4, MA.E.3.4
- 11.04 Design forecasting techniques to evaluate the results of altering natural systems. STL.13.M, MA.E.3.4, SC.G.2.4

12.0 DEMONSTRATE AN UNDERSTANDING OF AND BE ABLE TO SELECT AND USE MANUFACTURING TECHNOLOGIES.--The student will be able to:

- 12.01 Service products to keep them in good operating condition. STL.19.L
- 12.02 Classify materials based on their qualities as natural, synthetic, or mixed. STL.19.M
- 12.03 Classify goods as durable goods designed to operate for a long period of time, or non-durable goods designed to operate for a short period of time. STL.19.N
- 12.04 Identify and classify manufacturing systems into types, such as customized production, batch production, and continuous production. STL.19.O
- 12.05 Discuss the interchangeability of parts to increase the effectiveness of manufacturing processes. STL.19.P
- 12.06 Identify chemical technologies providing a means for humans to alter or modify materials and to produce chemical products. STL.19.Q
- 12.07 Employ marketing techniques involving establishing a product's identity, conducting research on its potential, advertising it, distributing it, and selling it. STL.19.R

13.0 DEMONSTRATE AN UNDERSTANDING OF AND BE ABLE TO SELECT AND USE CONSTRUCTION TECHNOLOGIES.--The student will be able to:

- 13.01 Define infrastructure as the underlying base or basic framework of a system. STL.20.J
 - 13.02 Identify a variety of processes and procedures used in constructing structures. STL.20.K
 - 13.03 Identify requirements involved in the design of structures. STL.20.L
 - 13.04 Recommend maintenance, alterations, or renovations to improve a structure or alter its intended use. STL.20.M
 - 13.05 Identify prefabricated materials used in some structures. STL.20.N
- 14.0 DEMONSTRATE SAFE AND APPROPRIATE USE OF TOOLS, MACHINES, AND MATERIALS IN CONSTRUCTION TECHNOLOGY.--The student will be able to:
- 14.01 Select appropriate tools, procedures, and/or equipment.
 - 14.02 Demonstrate the safe usage of appropriate tools, procedures, and operation of equipment.
 - 14.03 Follow laboratory safety rules and procedures.
 - 14.04 Demonstrate good housekeeping at workstation within total laboratory.
 - 14.05 Identify color-coding safety standards.
 - 14.06 Explain fire prevention and safety precautions and practices for extinguishing fires.
 - 14.07 Identify harmful effects/potential dangers of familiar hazardous substances/devices to people and the environment.
- 15.0 DEMONSTRATE THE ABILITY TO PROPERLY IDENTIFY, ORGANIZE, PLAN, AND ALLOCATE RESOURCES--The student will be able to:
- 15.01 Demonstrate the ability to select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
 - 15.02 Use or prepare budgets, make forecasts, keep records, and make adjustments to meet objectives.
 - 15.03 Demonstrate the ability to acquire, store, allocate, and use materials or space efficiently.
 - 15.04 Display knowledge of the efficient use of human resources.
- 17.0 DEMONSTRATE TECHNICAL KNOWLEDGE AND SKILLS ABOUT SELECTING AND PREPARING A CONSTRUCTION SITE--The student will be able to:
- 17.01 Explain the steps and processes for identifying, negotiating, selecting, and acquiring sites for construction.
 - 17.02 Explain and perform the elementary technical skills for surveying or mapping a construction site.
 - 17.03 Describe the tools, equipment, and technical skills required for excavating a construction site.
 - 17.04 Explain the load bearing importance of the earth and the reason for soils testing at a construction site.
- 18.0 DEMONSTRATE TECHNICAL KNOWLEDGE AND SKILLS ABOUT DESIGNING AND ENGINEERING CONSTRUCTED WORKS--The student will be able to:
- 18.01 Read and interpret architectural drawings, blueprints, symbols, and construction plans.
 - 18.02 Describe building codes, permits, and inspection requirements.
 - 18.03 Sketch or draw a plan for a construction project.

- 19.0 DEMONSTRATE TECHNICAL KNOWLEDGE AND SKILLS ABOUT CONTRACTING, ESTIMATING, BIDDING, AND SCHEDULING--The student will be able to:
- 19.01 Estimate construction costs using various methods including a computer.
 - 19.02 Read and prepare bid invitations for contractors to build a construction project.
 - 19.03 Establish criteria for awarding a construction contract.
 - 19.04 Describe the content of a construction contract and performance bond.
- 20.0 DEMONSTRATE TECHNICAL KNOWLEDGE AND SKILLS ABOUT CONSTRUCTING SUBSTRUCTURES--The student will be able to:
- 20.01 Describe the types, parts, and purposes of foundations.
 - 20.02 Describe the tools, materials, and processes for setting foundations.
 - 20.03 Mix, place, and finish concrete for a floor, wall, or footing.
 - 20.04 Perform the masonry technical skills of laying brick or block.
- 21.0 DEMONSTRATE TECHNICAL KNOWLEDGE AND SKILLS ABOUT CONSTRUCTING SUPERSTRUCTURES--The student will be able to:
- 21.01 Describe mass, solid wall, frame, and air-supported superstructures.
 - 21.02 Describe the materials used in the construction of superstructures.
 - 21.03 Use technical carpentry skills, tools, and materials in constructing a wood frame superstructure.
 - 21.04 Use technical construction skills in building a steel or concrete frame superstructure.
 - 21.05 Describe factory manufacturing of superstructures and modules.
- 22.0 DEMONSTRATE TECHNICAL KNOWLEDGE AND SKILLS ABOUT INSTALLING UTILITIES--The student will be able to:
- 22.01 Describe public utility systems for supplying water, electricity, natural gas, and sewerage.
 - 22.02 Describe the functions and operation of heating, cooling, and ventilating systems.
 - 22.03 Demonstrate a technical knowledge of plumbing and electrical systems in homes or buildings.
 - 22.04 Use the technical tools and skills to install plumbing and electrical systems utilities.
 - 22.05 Diagnose and troubleshoot problems with utility systems.
- 23.0 DEMONSTRATE TECHNICAL KNOWLEDGE AND SKILLS ABOUT ENCLOSING SUPERSTRUCTURES--The student will be able to:
- 23.01 Describe the different types of materials and methods for constructing interior and exterior walls.
 - 23.02 Describe the different types of materials and methods for laying floors and for building roofs.
 - 23.03 Describe the different types of methods for constructing or installing windows and doors.

- 23.04 Describe the purposes, materials, and methods for insulating enclosed superstructures.
- 23.05 Perform the technical skills of enclosing a superstructure.
- 24.0 DEMONSTRATE TECHNICAL KNOWLEDGE AND SKILLS ABOUT INTERIOR AND EXTERIOR FINISHING OF A CONSTRUCTED STRUCTURE--The student will be able to:
 - 24.01 Describe the different types of materials and methods for trimming, painting, and decorating a constructed structure.
 - 24.02 Describe the types of accessories and fixtures that are installed to finish completed construction.
 - 24.03 Explain the materials and methods used for the finishing processes of paving and landscaping.
 - 24.04 Participate in processes of finishing a construction project and site.
- 25.0 APPLY ADVANCED TECHNICAL KNOWLEDGE AND SKILLS ABOUT CONSTRUCTION TECHNOLOGY--The student will be able to:
 - 25.01 Select an individual or group project in cooperation with the teacher.
 - 25.02 Develop a written plan of work to carry out the project.
 - 25.03 Show evidence of technical study in support of the project.
 - 25.04 Perform skills related to the project.
 - 25.01 Complete the project as planned.

**Florida Department of Education
STUDENT PERFORMANCE STANDARDS**

Course Number: 8600730
Course Title: Construction Technology III
Course Credit: 1

COURSE DESCRIPTION: This course provides students with an advanced understanding of the knowledge, human relations, and technical skills of construction technology.

- 01.0 DEMONSTRATE AN UNDERSTANDING OF THE CHARACTERISTICS AND SCOPE OF TECHNOLOGY.--The student will be able to:
- 01.01 Conduct specific goal-directed research related to inventions and innovations. STL.1.L, LA.A.1.4, LA.A.2.4, LA.B.2.4
 - 01.02 Evaluate current technological developments that are/were driven by profit motive and the market. STL.1.M, SS.D.1.4
- 02.0 DEMONSTRATE AN UNDERSTANDING OF THE CORE CONCEPTS OF TECHNOLOGY.--The student will be able to:
- 02.01 Apply systems thinking logic and creativity with appropriate compromises in complex real-life problems. STL.2.W
 - 02.02 Assess technological systems, which are the building blocks of technology and are embedded within larger technological, social, and environmental systems. STL.2.X, LA.D.2.4
 - 02.03 Assess the stability of a technological system and its influence by all of the components in the system, especially those in the feedback loop. STL.2.Y
 - 02.04 Compare resources involving trade-offs between competing values, such as availability, cost, desirability, and waste. STL.2.Z, SS.D.1.4
 - 02.05 Identify the criteria and constraints of a product or system and then determine how they affect the final design and development. STL.2.AA, MA.A.5.4, MA.B.1.4, MA.B.3.4, MA.B.4.4, MA.E.3.4, SC.H.1.4
 - 02.06 Propose strategies for optimizing a technological process or methodology of designing or making a product, dependent on criteria and constraints. STL.2.BB
 - 02.07 Organize a management system as the process of planning, organizing, and controlling work. STL.2.EE
- 03.0 DEMONSTRATE AN UNDERSTANDING OF THE CULTURAL, SOCIAL, ECONOMIC, AND POLITICAL EFFECTS OF TECHNOLOGY.--The student will be able to:
- 03.01 Evaluate the use of technology involving weighing the trade-offs between the positive and the negative effects. STL.4.I, LA.B.2.4
 - 03.02 (Identify, Discuss) ethical considerations important in the development, selection, and use of technologies. STL.4.J, SC.H.1.4, SS.C.2.4
 - 03.03 Debate the cultural, social, economic, and political changes caused by the transfer of a technology from one society to another. STL.4.K, LA.B.2.4, LA.E.1.4, SC.H.3.4

- 04.0 DEMONSTRATE AN UNDERSTANDING OF THE EFFECTS OF TECHNOLOGY ON THE ENVIRONMENT.--The student will be able to:
- 04.01 Consider trade-offs of developing technologies to reduce the use of resources. STL.5.H, SC.G.2.4, SS.D.1.4
 - 04.02 Compare and contrast the alignment of technological processes with natural processes to maximize performance and reduce negative impacts on the environment. STL.5.J, SC.G.2.4, SS.B.2.4
 - 04.03 Make decisions about the implementation of technologies involving the weighing of trade-offs between predicted positive and negative effects on the environment. STL.5.L, SC.G.2.4, SC.H.3.4
- 05.0 DEMONSTRATE AN UNDERSTANDING OF THE INFLUENCE OF TECHNOLOGY ON HISTORY.--The student will be able to:
- 05.01 Discuss the Industrial Revolution and the development of continuous manufacturing, sophisticated transportation and communication systems, advanced construction practices, and improved education and leisure time. STL.7.N, SS.A.5.4
 - 05.02 Discuss the Information Age and its placement of emphasis on the processing and exchange of information. STL.7.O, SS.A.5.4
- 06.0 DEMONSTRATE AN UNDERSTANDING OF THE ATTRIBUTES OF DESIGN.--The student will be able to:
- 06.01 Implement the design process; including defining a problem, brainstorming, researching and generating ideas, identifying criteria and specifying constraints, exploring possibilities, selecting an approach, developing a design proposal, making a model or prototype, testing and evaluating the design using specifications, refining the design, creating or making it, and communicating processes and results. STL.8.H
 - 06.02 Translate design problems that are seldom presented in a clearly defined form. STL.8.I, LA.D.1.4, LA.D.2.4
 - 06.03 Evaluate a design continually, and improve and revise the idea of the design as needed. STL.8.J, SC.H.1.4
 - 06.04 Analyze competing requirements of a design, such as criteria, constraints, and efficiency. STL.8.K, MA.A.3.4, MA.B.1.4, MA.B.3.4, MA.B.4.4, MA.D.1.4, MA.D.2.4, MA.E.1.4
- 07.0 DEMONSTRATE AN UNDERSTANDING OF ENGINEERING DESIGN.--The student will be able to:
- 07.01 Select design principles used to evaluate existing designs, to collect data, and to guide the design process. STL.9.I
 - 07.02 Examine the influence of personal characteristics, such as creativity, resourcefulness, and the ability to visualize and think abstractly on the Engineering Design process. STL.9.J, LA.D.1.4, SC.H.1.4
 - 07.03 Construct a prototype or a working model used to test a design concept by making actual observations and necessary adjustments. STL.9.K, MA.B.1.4, SC.H.1.4, SC.H.3.4
 - 07.04 Evaluate factors taken into account in the process of engineering. STL.9.L

08.0 DEMONSTRATE AN UNDERSTANDING OF THE ROLE OF TROUBLESHOOTING, RESEARCH AND DEVELOPMENT, INVENTION AND INNOVATION, AND EXPERIMENTATION IN PROBLEM SOLVING.--The student will be able to:

- 08.01 Employ research and development as a specific problem solving approach that is used intensively in business and industry to prepare devices and systems for the marketplace. STL.10.I
- 08.02 Conduct research needed to solve technological problems. STL.10.J, LA.A.1.4, LA.A.2.4
- 08.03 Differentiate between technological and non-technological problems, and identify which problems can be solved using technology. STL.10.K, SC.H.1.4
- 08.04 Utilize a multidisciplinary approach to solving technological problems. STL.10.L, MA.A.1.4, MA.A.3.4, MA.B.1.4, MA.B.3.4, MA.B.4.4, MA.E.1.4, MA.E.3.4, SC.H.1.4, SC.H.3.4

09.0 DEMONSTRATE THE ABILITIES TO APPLY THE DESIGN PROCESS.--The student will be able to:

- 09.01 Interpret the design problem to solve and decide whether or not to address it. STL.11.M, SC.H.1.4
- 09.02 Evaluate criteria and constraints and determine how these will affect the design process. STL.11.N, MA.A.3.4, MA.B.1.4, MA.B.3.4, MA.B.4.4, MA.D.1.4, MA.D.2.4, MA.E.1.4, SC.H.1.4, SC.H.3.4
- 09.03 Refine a design by using prototypes and modeling to ensure quality, efficiency, and productivity of the final product. STL.11.O, SC.H.3.4
- 09.04 Evaluate the design solution using conceptual, physical, and mathematical models at various intervals of the design process in order to check for proper design and to note areas where improvements are needed. STL.11.P, MA.A.4.4, MA.B.1.4, MA.B.3.4, MA.B.4.4, SC.H.1.4, SC.H.3.4
- 09.05 Produce a product or system using a design process. STL.11.Q
- 09.06 Evaluate final solutions and communicate observations, processes, and results of the entire design process, using verbal, graphic, quantitative, virtual, and written means, in addition to three-dimensional models. STL.11.R, LA.B.2.4, LA.C.3.4, MA.B.4.4, MA.D.2.4, MA.E.1.4, MA.E.2.4, MA.E.3.4, SC.H.1.4, SC.H.3.4

10.0 DEMONSTRATE THE ABILITIES TO USE AND MAINTAIN TECHNOLOGICAL PRODUCTS AND SYSTEMS.--The student will be able to:

- 10.01 Document processes and procedures and communicate them to different audiences using appropriate oral and written techniques. STL.12.L, LA.B.2.4, LA.B.1.4, LA.C.3.4
- 10.02 Diagnose a system that is malfunctioning and use tools, materials, machines, and knowledge to repair it. STL.12.M
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- 10.04 Operate systems so that they function in the way they were designed. STL.12.O
- 10.05 Use computers and calculators to access, retrieve, organize, process, maintain, interpret, and evaluate data and information in order to communicate. STL.12.P, LA.A.2.4, MA.E.1.4

- 11.0 DEMONSTRATE THE ABILITIES TO ASSESS THE IMPACT OF PRODUCTS AND SYSTEMS.--The student will be able to:
- 11.01 Collect information and evaluate its quality. STL.13.J, LA.A.2.4, SC.H.1.4
 - 11.02 Synthesize data, analyze trends, and draw conclusions regarding the effect of technology on the individual, society, and the environment. STL.13.K, LA.A.2.4, SC.G.1.4, SC.G.2.4, SC.H.1.4
 - 11.03 Apply assessment techniques, such as trend analysis and experimentation to make decisions about the future development of technology. STL.13.L, LA.A.2.4, MA.E.1.4, MA.E.2.4, MA.E.3.4
 - 11.04 Design forecasting techniques to evaluate the results of altering natural systems. STL.13.M, MA.E.3.4, SC.G.2.4
- 12.0 DEMONSTRATE AN UNDERSTANDING OF AND BE ABLE TO SELECT AND USE MANUFACTURING TECHNOLOGIES.--The student will be able to:
- 12.01 Service products to keep them in good operating condition. STL.19.L
 - 12.02 Classify materials based on their qualities as natural, synthetic, or mixed. STL.19.M
 - 12.03 Classify goods as durable goods designed to operate for a long period of time, or non-durable goods designed to operate for a short period of time. STL.19.N
 - 12.04 Identify and classify manufacturing systems into types, such as customized production, batch production, and continuous production. STL.19.O
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 - 13.02 Identify a variety of processes and procedures used in constructing structures. STL.20.K
 - 13.03 Identify requirements involved in the design of structures. STL.20.L
 - 13.04 Recommend maintenance, alterations, or renovations to improve a structure or alter its intended use. STL.20.M
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- 14.0 DEMONSTRATE SAFE AND APPROPRIATE USE OF TOOLS, MACHINES, AND MATERIALS IN CONSTRUCTION TECHNOLOGY.--The student will be able to:
- 14.01 Select appropriate tools, procedures, and/or equipment.
 - 14.02 Demonstrate the safe usage of appropriate tools, procedures, and operation of equipment.
 - 14.03 Follow laboratory safety rules and procedures.

- 14.04 Demonstrate good housekeeping at workstation within total laboratory.
 - 14.05 Identify color-coding safety standards.
 - 14.06 Explain fire prevention and safety precautions and practices for extinguishing fires.
 - 14.07 Identify harmful effects/potential dangers of familiar hazardous substances/devices to people and the environment.
- 15.0 DEMONSTRATE THE ABILITY TO PROPERLY IDENTIFY, ORGANIZE, PLAN, AND ALLOCATE RESOURCES--The student will be able to:
- 15.01 Demonstrate the ability to select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
 - 15.02 Use or prepare budgets, make forecasts, keep records, and make adjustments to meet objectives.
 - 15.03 Demonstrate the ability to acquire, store, allocate, and use materials or space efficiently.
 - 15.04 Display knowledge of the efficient use of human resources.
- 26.0 PERFORM ADVANCED STUDY AND TECHNICAL SKILLS RELATED TO CONSTRUCTION TECHNOLOGY--The student will be able to:
- 26.01 Select an individual or group project in cooperation with the teacher.
 - 26.02 Develop a written plan of work to carry out the project.
 - 26.03 Show evidence of technical study in support of the project.
 - 26.04 Perform skills related to the project.
 - 26.05 Complete the project as planned.
- 27.0 DEMONSTRATE TECHNICAL KNOWLEDGE AND SKILLS ABOUT REGIONAL PLANNING AND THE CONSTRUCTION OF CIVIL OR COMMUNITY STRUCTURES--The student will be able to:
- 27.01 Discuss community and regional planning needs and processes for the construction of roads, parks, dams, airports, seaports, warehouses, shopping centers, factories, and skyscrapers.
 - 27.02 Develop a scale model of one of the above structures and give a report on the need
- 28.0 CONDUCT STRUCTURAL TESTS ON CONSTRUCTED STRUCTURES AND CONSTRUCTION MATERIALS--The student will be able to:
- 28.01 Perform scientific and technical tests on the strength, life, and uses of structures.
 - 28.02 Perform scientific and technical tests on a variety of construction materials.
- 29.0 CONDUCT A RESEARCH AND EXPERIMENTATION PROJECT ON A CONSTRUCTION MATERIAL OR PROCESS--The student will be able to:
- 29.01 Identify a problem.
 - 29.02 State a need to research the problem.
 - 29.03 Form a hypothesis about the problem.
 - 29.04 Plan the procedures for researching the problem.
 - 29.05 Conduct the research following the planned procedures.
 - 29.06 Present the research findings in a seminar.
 - 29.07 State conclusions based on the research findings.

30.0 DEMONSTRATE AN UNDERSTANDING OF CAREER OPPORTUNITIES AND REQUIREMENTS IN THE FIELD OF CONSTRUCTION TECHNOLOGY--The student will be able to:

- 30.01 Discuss individual interests related to a career in construction technology. LA.B.2.4
- 30.02 Explore career opportunities related to a career in construction technology. LA.A.1.4, LA.A.2.4, LA.B.2.4
- 30.03 Explore secondary education opportunities related to construction technology. LA.A.1.4, LA.A.2.4, LA.B.2.4
- 30.04 Conduct a job search. LA.A.1.4, LA.A.2.4
- 30.05 Complete a job application form correctly. LA.B.2.4
- 30.06 Demonstrate competence in job interview techniques. LA.C.1.4, LA.C.3.4, LA.D.1.4
- 30.07 Create a professional resume and letter of introduction. LA.A.1.4, LA.A.2.4, LA.B.1.4, LA.B.2.4
- 30.08 Solicit awards, letters of recommendation and recognition. LA.A.1.4, LA.A.2.4, LA.C.3.4, LA.D.1.4
- 30.09 Organize work samples in a professional, presentable format. LA.B.2.4, LA.C.3.4, LA.D.1.4