Implementation Date
Fall 2008

PROGRAM CONCENTRATION: **Architecture, Construction, Communications & Transportation**

CAREER PATHWAY: **Construction**

This Pathway is designed to prepare a student with foundational knowledge and skills for a construction career in one of four possible construction crafts. It also is a good pathway for a student to prepare for a variety of opportunities in addition to the craft areas, such as Architecture, Construction Engineering and Construction Management.

As the student progresses through the pathway, they are given the opportunity to explore four construction craft areas on an introductory level. Once they have completed the foundational and introductory levels they are then given the option to "major" in at least one of four craft areas. These areas are Carpentry, Masonry, Electrical, and Plumbing. Upon successful completion of four units within this Pathway, in an Industry Accredited Program, the student will earn at least two industry credentials with the possibility of others.

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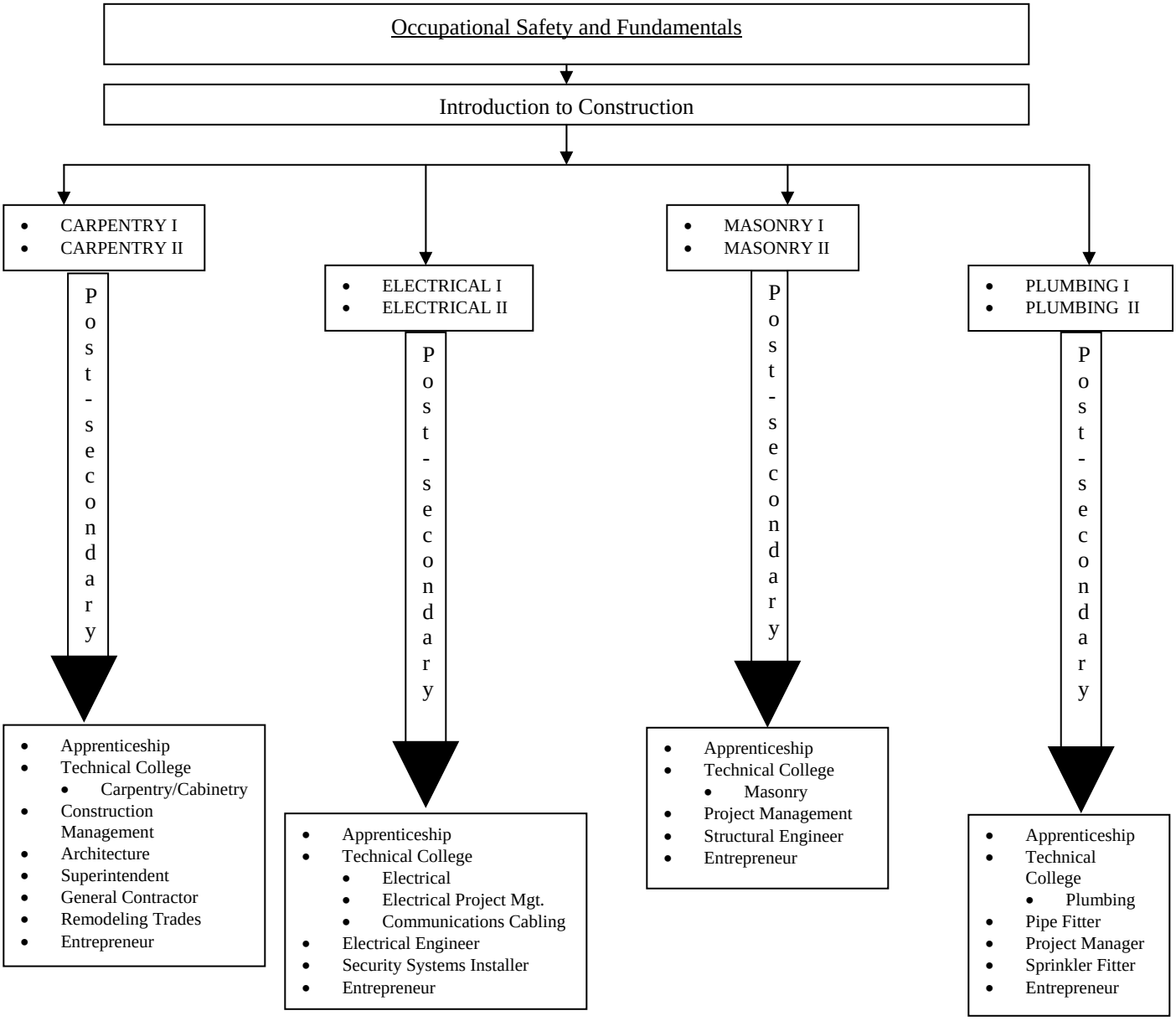
The Construction Career Pathway Map



PROGRAM CONCENTRATION: **Architecture, Construction, Communications & Transportation**

CAREER PATHWAY: **Construction**

COURSE TITLE: **Electrical II**

This course is preceded by Electrical I. The course is the fourth of four courses that provides the student a solid foundation in electrical skills and knowledge. It is the final step in gaining a Level One Industry Certification in Electrical.

This course focuses on proper selection, inspection, use, and maintenance of common electrical test equipment; introduces the types and applications of raceways, wire-ways, and ducts; focuses on the types and application of conductors and covers proper wiring techniques, electrical prints, drawings and symbols; covers the electrical devices and wiring techniques common to commercial and industrial construction and maintenance, and covers the electrical devices and wiring techniques common to residential construction and maintenance.

ACT-E2-1. Students will have knowledge of the current National Electrical Code (NEC), National Electrical Manufacturers Association Code (NEMA), National Fire Protection Association Code (NFPA), and Underwriters Laboratories (UL) Standards.

a. Demonstrate knowledge of the use of electrical codes and specifications.
b. Apply codes to calculating loads.

ACADEMIC STANDARDS:

SSCG15. The student will explain the functions of the departments and agencies of the federal bureaucracy.

SSCG18. The student will demonstrate knowledge of the powers of Georgia's state and local governments.

ELA9RC3. The student acquires new vocabulary in each content area and uses it correctly.

ELA9W3. The student uses research and technology to support writing.

ACT-E2-2. Students will understand the identification and installation of conductors according to NEC.

a. Demonstrate the knowledge of NEC as related to conductors.
b. Select proper conductors for a specified application.
c. Install selected conductors properly.

ACADEMIC STANDARDS:

SSCG15. The student will explain the functions of the departments and agencies of the federal bureaucracy.

SSCG18. The student will demonstrate knowledge of the powers of Georgia's state and local governments.

SP5. Students will evaluate relationships between electrical and magnetic forces.

ACT-E2-3. Students will have the ability to install a variety of fixtures.

a. Select the proper fixtures for the specified application.
b. Install various fixtures.

ACADEMIC STANDARDS:

SSCG18. The student will demonstrate knowledge of the powers of Georgia's state and local governments.

ACT-E2-4. Students will have an understanding of voltage, resistance and current and how they relate.

a. Demonstrate a working knowledge of Ohm's Law, Kirchhoff's Law and how they work in a circuit.
b. Demonstrate the knowledge of the math needed to calculate voltage, wattage, amps, and resistance.

ACADEMIC STANDARDS:

MM1A2. Students will simplify and operate radical expressions, polynomials, and rational expressions.

MC2A2. Students will solve simple equations.

SCSh4. Students will use tools and instruments for observing, measuring, and manipulating scientific equipment and materials.

SPS1. Students will investigate our current understanding of the atom.

SP5. Students will evaluate relationships between electrical and magnetic forces.
ELA9RL5. Student understands and acquires new vocabulary and uses it correctly in reading and writing.

CTAE Foundation Skills

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The Foundation Skills for Career, Technical and Agricultural Education (CTAE) are critical competencies that students pursuing any career pathway should exhibit to be successful. As core standards for all career pathways in all program concentrations, these skills link career, technical and agricultural education to the state's academic performance standards.

The CTAE Foundation Skills are aligned to the foundation of the U. S. Department of Education's 16 Career Clusters. Endorsed by the National Career Technical Education Foundation (NCTEF) and the National Association of State Directors of Career Technical Education Consortium (NASDCTEc), the foundation skills were developed from an analysis of all pathways in the sixteen occupational areas. These standards were identified and validated by a national advisory group of employers, secondary and post secondary educators, labor associations, and other stakeholders. The Knowledge and Skills provide learners a broad foundation for managing lifelong learning and career transitions in a rapidly changing economy.

CTAE-FS-1 Technical Skills: Learners achieve technical content skills necessary to pursue the full range of careers for all pathways in the program concentration.

CTAE-FS-2 Academic Foundations: Learners achieve state academic standards at or above grade level.

CTAE-FS-3 Communications: Learners use various communication skills in expressing and interpreting information.

CTAE-FS-4 Problem Solving and Critical Thinking: Learners define and solve problems, and use problem-solving and improvement methods and tools.

CTAE-FS-5 Information Technology Applications: Learners use multiple information technology devices to access, organize, process, transmit, and communicate information.

CTAE-FS-6 Systems: Learners understand a variety of organizational structures and functions.

CTAE-FS-7 Safety, Health and Environment: Learners employ safety, health and environmental management systems in corporations and comprehend their importance to organizational performance and regulatory compliance.

CTAE-FS-8 Leadership and Teamwork: Learners apply leadership and teamwork skills in collaborating with others to accomplish organizational goals and objectives.

CTAE-FS-9 Ethics and Legal Responsibilities: Learners commit to work ethics, behavior, and legal responsibilities in the workplace.

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CTAE-FS-10 Career Development: Learners plan and manage academic-career plans and employment relations.

CTAE-FS-11 Entrepreneurship: Learners demonstrate understanding of concepts, processes, and behaviors associated with successful entrepreneurial performance.