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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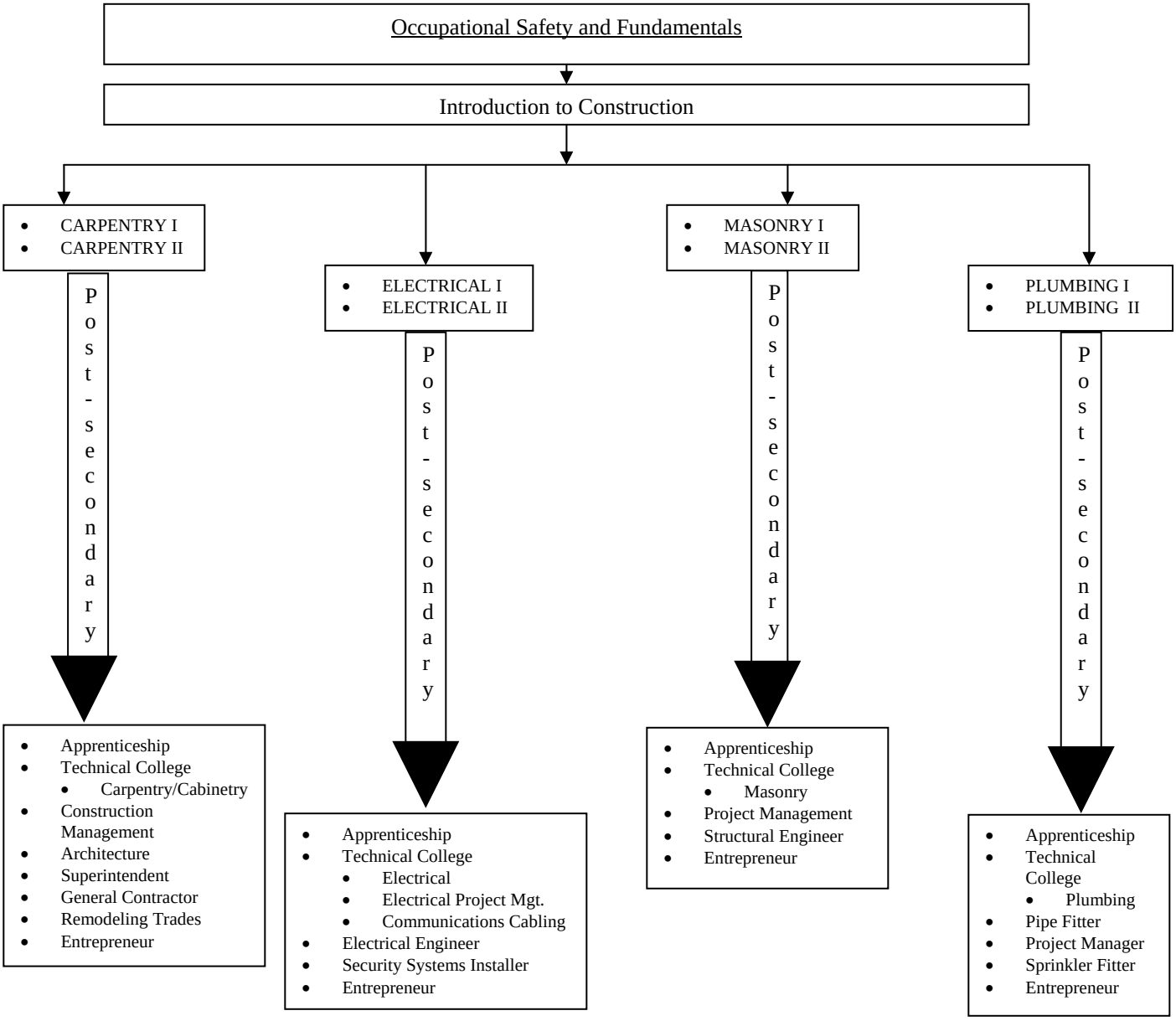
The Construction Career Pathway Map



PROGRAM CONCENTRATION: **Architecture, Construction, Communications & Transportation**
CAREER PATHWAY: **Construction**
COURSE TITLE: **Masonry I**

This course is preceded by Introduction to Construction and is the third of four courses that provides the student a solid foundation in masonry skills and knowledge. It is the third step in gaining a Level One Industry Certification in Masonry.

This course provides knowledge and skills needed to operate hand tools, power tools, and equipment used in mixing mortar safely. It provides the knowledge and skills needed for cutting, laying, and finishing masonry units. It provides the math knowledge and skills needed to calculate distances, areas, and volumes common in masonry work. It also provides the knowledge of the types and properties of mortar and materials used in a concrete mixture.

ACT-M1-1. Students will know, understand, and apply general construction and specific OSHA and EPA safety concepts and practices.

a. Demonstrate an understanding of the application of OSHA and EPA regulations concerning PPE and environmental issues.
b. Describe safety precautions and demonstrate general housekeeping practices that should be followed at a typical work site.
c. Describe the safety precautions that should be followed when working in special areas such as trenches, excavations, confined spaces, scaffolding and limited access zones.

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.

SSUSH12. The student will analyze important consequences of American industrial growth.

SC1. Students will analyze the nature of matter and its classifications.

ACT-M1-2. Students will be able to use masonry tools and equipment in a professional and safe manner.

a. Use and maintaining masonry tools safely.
b. Demonstrate setting up ladders and scaffolding according to OSHA safety regulations under the supervision of a qualified person.

c. Demonstrate correct safety procedures for fueling and starting a gasoline fuel power tool.

ACADEMIC STANDARDS:

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

ACT-M1-3. Students will become familiar with the selection, handling, storage, and proper use of masonry materials.

a. Demonstrate the correct use of different types of materials used in the masonry trade, including mortar, admixtures, brick and block.
b. Describe the most common types of masonry units.

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.

SSUSH12. The student will analyze important consequences of American industrial growth.

SC1. Students will analyze the nature of matter and its classifications.

SEV4. Students will understand and describe availability, allocation and conservation of energy and other resources.

SEV5. Students will recognize that human beings are part of the global ecosystem and will evaluate the effects of human activities and technology on ecosystems.

ACT-M1-4. Students will read, interpret, apply information, and estimate costs from a variety of architectural and construction working drawings.

a. Identify the basic parts of a set of drawings.
b. Demonstrate an understanding of the different types of specifications used in the masonry trade.
c. Estimate materials correctly based on drawings.

ACADEMIC STANDARDS:

MC1G1. Students will investigate properties of geometric figures in the coordinate plane.

MC1P1. Students will solve problems (using appropriate technology).

MC1P3. Students will communicate mathematically.

MC1P4. Students will make connections among mathematical ideas and to other disciplines.

MC2A2. Students will solve simple equations.

MC2G1. Students will discover, prove, and apply properties of triangles, quadrilaterals, and other polygons.

MC4G1. Students will understand the properties of circles.

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

SSEM13. The student will explain how markets, prices and competition influence economic behavior.

CTAE Foundation Skills

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.

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.