

Implementation Date  
Fall 2008

**PROGRAM CONCENTRATION:** Architecture, Construction,  
Communications & Transportation  
**CAREER PATHWAY:** Construction  
**COURSE TITLE:** Occupational Safety and Fundamentals

This course is the foundational course that prepares students for a pursuit of any career in the field of construction. It prepares the student for the basic knowledge to function safely on or around a construction site and in the industry in general. It provides the student with the option for an Industry Certification in the Construction Core.

This course explains the safety obligations of workers, supervisors, and managers to ensure a safe workplace. Course content discusses the causes and results of accidents and the dangers of rationalizing risks. It includes the basic content of OSHA 10-hour safety standards. It also includes the basic knowledge and skills needed in the following areas: construction math, hand and power tools used in the field, general blueprints, and basics of rigging safety.

**ACCT-OSF-1. Students will understand and practice construction safety.**

- a. Demonstrate knowledge of use and care of PPE.
- b. Demonstrate a basic knowledge of OSHA and its regulations.
- c. Demonstrate a basic knowledge of safety as related to aerial work, electricity, and fire.

**ACADEMIC STANDARDS:**

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

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

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

**ACCT-OSF-2. Students will understand and apply math concepts as applied to construction.**

- a. Demonstrate knowledge and application of measuring.
- b. Apply basic math computations to construction settings.
- c. Apply basic geometric calculations including the 3-4-5 rule.
- d. Demonstrate knowledge and application of area and volume calculations.

**ACADEMIC STANDARDS:**

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

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*MC2P1. Students will solve problems (using appropriate technology)*

*MC2P3. Students will communicate mathematically.*

*MC2P4. Students will make connections among mathematical ideas and to other disciplines.*

*MC3G1. Students will identify and use special right triangles.*

*MC3G2. Students will define and apply sine, cosine, and tangent ratios to right triangles.*

*MC4A2. Students will solve quadratic equations and inequalities in one variable.*

*MC4G1. Students will understand the properties of circles.*

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

*MM1G1. Students will investigate properties of geometric figures in the coordinate plane.*

*MM2G1. Students will identify and use special right triangles.*

*MM2G3. Students will understand the properties of circles.*

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

**ACCT-OSF-3. Students will use basic hand and power tools in a professional and safe manner.**

- a. Demonstrate knowledge of rules and regulations regarding the safe use of hand and power tools.
- b. Demonstrate knowledge of the care and maintenance of hand and power tools.
- c. Demonstrate knowledge of proper usage techniques of hand and power tools.

**ACADEMIC STANDARDS:**

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

*ELA9LSV1. The student participates in student-to-teacher, student-to-student, and group verbal interactions.*

**ACCT-OSF-4. Students will demonstrate knowledge of blueprint terms, components, and symbols.**

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- a. Demonstrate knowledge of blueprint terms.
- b. Demonstrate knowledge of blueprint components.
- c. Demonstrate knowledge of blueprint symbols.

**ACADEMIC STANDARDS:**

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

*MC1P3. Students will communicate mathematically.*

*MC2P4. Students will make connections among mathematical ideas and to other disciplines.*

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

*ELA9RL5. Student understands and acquires new vocabulary and uses it correctly in reading and writing.*

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

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

**ACCT-OSF-5. Students will explain and implement safe rigging procedures.**

- a. Demonstrate the knowledge of basic rigging equipment.
- b. Demonstrate the knowledge of basic rigging communication.
- c. Demonstrate the knowledge of basic rigging safety.

**ACADEMIC STANDARDS:**

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

*MC1P3. Students will communicate mathematically.*

*MC2P4. Students will make connections among mathematical ideas and to other disciplines.*

*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.*

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*ELA9RL5. Student understands and acquires new vocabulary and uses it correctly in reading and writing.*

*ELA9C1. The student demonstrates understanding and control of the rules of the English language, realizing that the usage involves appropriate applications of conventions and grammar in both written and spoken formats.*

*SP1. Students will analyze the relationships between force, mass, gravity, and the motion of objects.*

**ACCT-OSF-6. Students will explore career pathways in the construction industry.**

- a. Demonstrate knowledge of the job opportunities that are available to entry level employees.
- b. Demonstrate knowledge of the post-secondary training opportunities that are available.
- c. Demonstrate knowledge of the industry licenses and certifications available.

**ACADEMIC STANDARDS:**

*SSWH20. The student will examine change and continuity in the world since the 1960's.*

*SSEF3. The student will explain how specialization and voluntary exchange between buyers and sellers increase the satisfaction of both parties.*

*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.

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**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.