



Course Number and Title: NRG 108 Safety Basics

Campus Location:

Georgetown, Dover, Stanton

Effective Date:

2018-51

Prerequisite:

ENG 090 or ENG 091, and MAT 010, SSC 100 or concurrent

Co-Requisites:

None

Course Credits and Hours:

1.00 credits

1.00 lecture hours/week

1.00 lab hours/week

Course Description:

This course introduces students to the OSHA regulations relevant to the construction industry to ensure safety. Hands-on use of ladders, harnesses, and personal protective equipment (PPE) is taught.

Required Text(s):

Obtain current textbook information by viewing the [campus bookstore - https://www.dtcc.edu/bookstores](https://www.dtcc.edu/bookstores) online or visit a campus bookstore. Check your course schedule for the course number and section.

Additional Materials:

Scientific calculator

Schedule Type:

Classroom Course

Disclaimer:

None

Core Course Performance Objectives (CCPOs):

1. Engage in professional behavior. (CCC 1, 3, 4, 5)
2. Use skills needed to identify hazards in the construction industry. (CCC 2, 3, 4, 5; PGC NRG 4, 5; PGC SOL 3, 6; PGC BAS 3, 5)
3. Describe the elements of an effective safety plan. (CCC 1, 2, 5; PGC NRG 4, 5; PGC SOL 3, 6; PGC BAS 3, 5)
4. Determine scaffolding, rigging, and lifting requirements used on construction jobs. (CCC 1, 2, 3, 6; PGC NRG 4, 5; PGC SOL 3, 6; PGC BAS 3, 5)

See Core Curriculum Competencies and Program Graduate Competencies at the end of the syllabus. CCPOs are linked to every competency they develop.

Measurable Performance Objectives (MPOs):

Upon completion of this course, the student will:

1. Engage in professional behavior.
 1. Demonstrate punctuality when attending class, participating in off-site projects, and submitting assignments.
 2. Communicate using industry-appropriate language in presentations, reports, and homework.
 3. Demonstrate appropriate professional behavior when working with others.
2. Use skills needed to identify hazards in the construction industry.
 1. Explain the purpose of OSHA and how it promotes safety on the job.
 2. Identify the safety concerns and precautions required working around cranes.
 3. Specify safety characteristics when installing and using electrical equipment and systems.
 4. Identify safety concerns and precautions when working in and around excavations.
 5. Examine methods to eliminate hazards associated with materials handling, storage, use, and disposal.
3. Describe the elements of an effective safety plan.
 1. Employ engineering and work practice controls to minimize the need for a PPE plan.
 2. Prepare a PPE plan to prevent exposure to a potential hazard.
4. Determine scaffolding, rigging, and lifting requirements used on construction jobs.
 1. Identify different types of scaffolding, and propose a safety plan to address safety concerns utilizing fall protection equipment.
 2. Use tool inspection practices, ground fault circuit interrupter (GFCI) protection, personal protection equipment, guards, storage, and safe handling techniques with hand and power tools.

Evaluation Criteria/Policies:

Students must demonstrate proficiency on all CCPOs at a minimal 75 percent level to successfully complete the course. The grade will be determined using the Delaware Tech grading system:

92	-	100	=	A
83	-	91	=	B
75	-	82	=	C
0	-	74	=	F

Students should refer to the [Student Handbook - https://www.dtcc.edu/handbook](https://www.dtcc.edu/handbook) for information on the Academic Standing Policy, the Academic Integrity Policy, Student Rights and Responsibilities, and other policies relevant to their academic progress.

Core Curriculum Competencies (CCCs are the competencies every graduate will develop):

1. Apply clear and effective communication skills.
2. Use critical thinking to solve problems.
3. Collaborate to achieve a common goal.
4. Demonstrate professional and ethical conduct.
5. Use information literacy for effective vocational and/or academic research.
6. Apply quantitative reasoning and/or scientific inquiry to solve practical problems.

Program Graduate Competencies (PGCs are the competencies every graduate will develop specific to his or her major):**Building Automation Systems**

1. Utilize building system and energy technology hardware and software to gather data on building lighting systems operation and energy consumption.
2. Utilize building system and energy technology hardware and software to gather data on heating, ventilation, and air conditioning (HVAC) systems operation and energy consumption.
3. Evaluate commercial buildings and make recommendations for optimized building performance and occupant comfort.
4. Prepare and present technical reports.
5. Assemble, install, service, and repair direct digital controls (DDC) for building electrical and mechanical systems.
6. Program and explain operational sequences for building equipment and systems.
7. Integrate and commission building systems and components to ensure reliable performance and compliance with building codes.

Energy Management

1. Utilize building systems and energy technology hardware and software to gather data on building lighting systems operation and energy consumption.
2. Utilize building systems and energy technology hardware and software to gather data on heating, ventilation, air-conditioning (HVAC) systems operation and energy consumption.
3. Calculate, analyze, and verify the energy use of buildings based upon the interaction of energy consuming building systems.
4. Evaluate residential buildings and make recommendations for optimized building performance and occupant comfort.
5. Evaluate commercial buildings and make recommendations for optimized building performance and occupant comfort.
6. Prepare and present technical reports.
7. Analyze the economic, environmental, and business implications of potential energy measures.

Renewable Energy Solar

1. Utilize building systems and energy technology hardware and software to gather data on building lighting systems operation and energy consumption.
2. Calculate, analyze, and verify the energy use of buildings based upon the interaction of energy consuming building systems.
3. Evaluate residential buildings and make recommendations for optimized building performance and occupant comfort.
4. Prepare and present technical reports.
5. Analyze the economic, environmental, and business implications of potential energy measures.
6. Perform preliminary and in depth site and customer sustainability evaluation of potential applications for solar use.
7. Design and calculate the output of an optimal site-specific array by deriving panel configuration and specifying components.

Disabilities Support Statement:

The College is committed to providing reasonable accommodations for students with disabilities. Students are encouraged to schedule an appointment with the campus Disabilities Support Counselor to request an accommodation needed due to a disability. A listing of campus Disabilities Support Counselors and contact information can be found at the [disabilities services - https://www.dtcc.edu/disabilitysupport](https://www.dtcc.edu/disabilitysupport) web page or visit the campus Advising Center.