

## CTE Lab in Manufacturing

<b>Course Credit</b>	1.0
<b>Grade Levels</b>	10-12
<b>Prerequisites</b>	Successful completion of two or more full-credit courses in the Manufacturing career cluster

**CTE Lab in Manufacturing** is designed to enhance the student’s general understanding and mastery of the cluster. This course is designed as a learning laboratory to support students’ individual interests and goals. This laboratory may take place in a traditional classroom, in an industry setting, or in a virtual learning environment. This course may be taken in any program within the Manufacturing cluster.

Foundational standards, shown in the table below, are an important part of every course. Through these standards, students learn and apply safety concepts, explore career opportunities and requirements, practice the skills needed to succeed in the workplace, develop leadership qualities and take advantage of the opportunities afforded by Career and Technical Student Organizations (CTSOs), and learn and practice essential digital literacy skills. The foundational standards are to be incorporated throughout the course.

Each foundational standard completes the stem “*Students will...*”

### Foundational Standards

1. Incorporate safety procedures in handling, operating, and maintaining tools and machinery; handling materials; utilizing personal protective equipment; maintaining a safe work area; and handling hazardous materials and forces.
2. Demonstrate effective workplace and employability skills, including communication, awareness of diversity, positive work ethic, problem-solving, time management, and teamwork.
3. Explore the range of careers available in the field and investigate their educational requirements, and demonstrate job-seeking skills including resume-writing and interviewing.
4. Advocate and practice safe, legal, responsible, and ethical use of information and technology tools specific to the industry pathway.
5. Participate in a Career and Technical Student Organization (CTSO) to increase knowledge and skills and to enhance leadership and teamwork.

## CTE LAB IN MANUFACTURING CONTENT STANDARDS

Each content standard completes the stem “*Students will...*”

<b>Occupational Expertise</b>	<ol style="list-style-type: none"> <li>1. Demonstrate expertise in a specific occupation within the Manufacturing cluster.               <ol style="list-style-type: none"> <li>a. Meet benchmarks selected by the instructor from the appropriate curriculum frameworks, based upon the individual student’s assessed needs.</li> </ol> </li> </ol>
<b>Research and Investigation</b>	<ol style="list-style-type: none"> <li>2. Conduct investigative research on a selected topic related to manufacturing using approved research methodology; interpret findings; and prepare a presentation to defend results.               <ol style="list-style-type: none"> <li>a. Select an investigative study referencing prior research and knowledge.</li> <li>b. Collect, organize, and analyze data accurately and precisely.</li> <li>c. Design procedures to test the research.</li> <li>d. Report, display, and defend the results of investigations to audiences that may include professionals and technical experts.</li> </ol> </li> <li>3. Demonstrate higher order critical thinking and reasoning skills appropriate for a career in manufacturing.               <ol style="list-style-type: none"> <li>a. Use mathematical and/or scientific skills to solve problems encountered in the chosen occupation.</li> <li>b. Locate, evaluate, and interpret information related to the chosen occupation, in both oral and written formats.</li> <li>c. Analyze and apply data and/or measurements to solve problems and interpret documents.</li> </ol> </li> </ol>
<b>Professional Skills</b>	<ol style="list-style-type: none"> <li>4. Apply enhanced leadership and professional skills needed in a career in manufacturing.               <ol style="list-style-type: none"> <li>a. Develop and present a professional presentation offering potential solutions to a current issue.</li> <li>b. Practice leadership and career skills in job placement, job shadowing, entrepreneurship, or internship, or by obtaining an industry-recognized credential of value.</li> <li>c. Participate in leadership development opportunities available through SkillsUSA and/or professional organizations in the manufacturing field.</li> <li>d. Demonstrate written and oral communication skills through presentations, public speaking, live or virtual interviews, and/or an employment portfolio.</li> </ol> </li> </ol>