FUNDAMENTALS OF MANUFACTURING
Course Syllabus

Course Number: CNCT-0825  
OHLAP Credit: No  
OCAS Code: None  
Course Length: 45 Hours  
Career Cluster: Manufacturing  
Career Pathway: Production  
Career Major(s): Mechatronics Systems Technician

Pre-requisite(s): This course covers occupational health and safety, tool and equipment identification, usage and operations. The students will learn about the history, current state and future of the manufacturing industry. This course will cover general manufacturing and plant safety rules and regulations for industrial maintenance technicians, precautions for electrical, fluid power, and mechanical hazards on the job, tool and equipment safety, first aid, CPR, blood borne pathogens, OSHA and NFPA mandated lockout/tagout, personal protective equipment, right to know, and confined space entry procedures.

Textbooks: Career Safe OSHA training materials

Course Objectives:  
A. Practice General Shop Safety  
1. Describe general manufacturing and shop/plant safety rules and regulations.  
2. Describe the use of personal safety equipment.  
3. Locate all main power sources, fire extinguishers, and emergency equipment.  
4. Identify emergency exits and demonstrate knowledge of school evacuation plan in case of fire or a natural disaster.  
5. Discuss precautions for electrical, fluid power and mechanical hazards on the job.  
6. Discuss the Right-to-Know Hazardous Waste Act, OSHA regulations, and blood-borne pathogens.  
7. Complete Machining Technology safety test with a 100% score before using tools or shop equipment.  
8. Describe basic first aid  
Demonstrate safe usage of hand tools.  
10. Discuss occupational health and demonstrate the use of personal protective equipment.

B. Use PM (Preventive Maintenance) Check Lists and Equipment Manuals to Identify Lubrication Requirements.  
1. List the purposes of lubrication.  
2. Identify terms associated with lubricants.  
3. Describe splash method.  
4. Describe bath method.  
5. Describe pressure method.  
7. Describe gravity or drip method.

C. Select Proper Lubricants
   1. Identify lubricants.
   2. Identify required lubricants using a PM checklist.
   3. Identify required lubricants using equipment manuals.

D. Apply Lubricants
   1. Lubricate equipment using the manual method.
   2. Lubricate equipment using the pressure method.

TTC objectives

Teaching Methods: The class will primarily be taught by the lecture and demonstration method and supported by various media materials to address various learning styles. There will be question and answer sessions over material covered in lecture and media presentations. Supervised lab time is provided for students to complete required projects.

Grading Procedures: 1. Students are graded on theory and shop practice and performance.
   2. Each course must be passed with seventy (70%) percent or better.
   3. Grading scale: A=90-100%, B=80-89%, C=70-79%, D=60-69%, F=50-59%.

Description of Classroom, Laboratories, and Equipment: Tulsa Technology Center campuses are owned and operated by Tulsa Technology Center School District No. 18. All programs provide students the opportunity to work with professionally certified instructors in modern, well-equipped facilities.

Available Certifications/College Credit: The student may be eligible to take state, national or industry exam after completion of the program. College credit may be issued from Oklahoma State University-Okmulgee or Tulsa Community College. See program counselor for additional information.

College Credit Eligibility: The student must maintain a grade point average of 2.0 or better.