St. Louis Community College  
Division—WSG  
Course #: IENG 711 CPT Maintenance Awareness

The purpose of this course is to learn the concepts of MSSC’s (Manufacturing Skill and Standards Council) four major areas of assessment. These are: Safety, Quality and Measurement, Processes and Production in Manufacturing, and Maintenance Awareness in Manufacturing. The student will take the proctored assessment at the end of each segment. Upon successfully passing all four assessments the student will receive MSSC Certified Production Technician (CPT) certificate and will be registered online.

# Syllabus for Maintenance Awareness

**Course Description:** This course will provide an introduction to welding, electrical and power systems, hydraulic and pneumatic systems, and mechanical systems.

Computer Lab hours will be from 8am to 2pm on Mondays and Thursdays unless otherwise scheduled.

Instructor will be available Monday thru Thursday each week.

Office hours are 8:00 am to 2:00 pm in CWI building.

**Assessment Center Hours:**

Monday – Thursday: 9:00am – 5:00pm

Fridays: 9:00am – 1:00pm

Phone: (314) 513-4292

**Instructor:** Jeff Scharringhausen

* B.S. Speech Communication.
* Certified MSSC CPT Instructor
* MSSC Certified Production Technician
* Worked for 26 years with Monsanto/Solutia as a production operator, department trainer, and three years first line Supervisor.
* I have been with STLCC for nine years.
  + Tech writer
  + Facilitator for IMT course

**Office:** IMT Lab phone #: 314-513-4490

**Email:** [jscharringhausen@stlcc.edu](mailto:jscharringhausen@stlcc.edu)

**Absentee policy:**  The core knowledge of this class comes from online computer based training developed by Tooling U to address MSSC’s Certified Production Technician (CPT) program. The student will be able to stay up with tentative schedule by taking these lessons at home or another available computer other than our scheduled lab time. **Tooling U lessons do not encompass all of the MSSC objectives. Manufacturing TDI’s Unit 4: Maintenance Awareness textbooks will address these areas . These will be available for reading in the classroom. No writing or highlighting in the text books.**

There is mandatory class attendance on Tuesdays and Wednesdays. Learning academy labs will be held at 10:00 and 1:00 on these days.

**Missed Assignments:** All work will be documented in Tooling U’s Administration program. I will keep track of student’s progress through this program. If student starts to fall too far behind a conference will be held to find a solution.

**Grading System:** The student must pass the MSSC assessment to receive credit for this course. The assessment must be taken during the week scheduled unless you have discussed with me and have been given permission to take later.

**Course Objectives:**

Upon successful completion of this course, the student will know or understand:

1. The behaviors that lead to welding safety.
2. Basic electrical circuits and components.
3. The attributes of non-electrical power systems, such as pneumatics and hydraulics.
4. The make-up and dynamics of mechanical power transmission with bearings, couplings, and gear drives.

Upon successful completion of the course, the student will:

1. Identify proper welding safety procedures.
2. Identify methods to measure voltage, current, and resistance.
3. Identify circuit protection devices.
4. Classify the connection of AC motors and circuit components such as manual input devices and output devices.
5. Identify components of a pneumatic cylinder circuit.
6. Identify components of a hydraulic cylinder and motor circuit.
7. Identify the components of a mechanical power transmission.

Week 1 Monday:

* What is Arc Welding (650110)
* Electrical Units (550110)
* Intro to Circuits (550120)

Tuesday:

* + - * DC Circuit Components (550140)
      * AC Fundamentals (550210)
      * Logic and Line Diagrams (460220)

Wednesday:

* + - * Intro to Magnetism (550130)
      * NEC Overview (550150)
      * Intro to Fluid Systems (570100)

Thursday:

* + - * Safety for Hydraulics and Pneumatics (570105)
      * Into to the Forces of Fluid Power (570110)
      * Intro to Hydraulic Components (570120)

Week 2

Monday:

* + - * Intro to Pneumatic Components (570125)
      * Intro to Fluid Conductors (570130)

Tuesday:

* + - * Pneumatic Control Valves (570235)
      * Actuator Applications (570240)

Wednesday:

* + - * Preventive Maintenance for Fluid Systems (570140)
      * Total Productive Maintenance Overview (900150)

Thursday: Maintenance Assessment

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