MTEC 280. CAPSTONE COURSE.
Credit Hours: 1 Hrs.
Scheduled hours per week

Lecture: 0
Lab: 2
Other: Varies as needed due to blended nature of presentation

Catalog Course Description: This course serves as a culmination of the MTEC A.A.S. program. A project is designed and completed that demonstrates competencies and skills learned within the MTEC, IM, and E & I course of the program. Capstone course.

Pre-requisites: Instructor Consent

Co-requisites: None

Course Learning Outcomes:
Demonstrates comprehensive understanding and application of Multicraft competencies

Topics to be studied:

a) Fasteners and Anchors
b) Oxyfuel cutting
c) Gaskets and Packing
d) Valves, Pumps and Drivers
e) Lubrication

Relationship of Course to Program or Discipline Learning Outcomes:	
Basic understanding of safety.	X
Use of hand tools, power tool, and test instruments	X
Basic understanding of electrical theory and NEC	X
Basic understanding of flow, pressure, and temperature	X
Basic understanding of electronic components	X
Understanding of motors, transformers and distribution	X
Understanding of transducers, actuators, and controllers	X
Ability to calibrate and configure process loops	X
Use of PLCs, data networks, and DCSs	X
Level 4 E & I and IM NCCER Certification Project Completion	X
Ability to write concise and accurate reports	X
Ability to solve algebraic equation	X
Understanding of fractions, decimals, and percentages	X
Understanding of area and volume	X
Demonstrate ability to install and repair pumps, valves, gaskets, seals. bearings, couplings, belts, and chains	X
Understand and use terminology, measuring systems, hand tools, mechanical instruments, lathes, mills and measuring tools.	X
Apply pattern making, layout, and assembly of parts from sheet metal.	X
Read and work to close tolerance from machine prints and drawings	X

commonly used in the machine trades.	
Show understanding of preventive/predictive maintenance	X
Demonstrate knowledge of hydraulic and pneumatic systems and their uses.	X
Demonstrate use of alignment equipment including dial indication and laser alignment methods.	X
Write reports, requisitions, and operational instruction.	X

Relationship of Course to General Education Learning Outcomes:	
Composition and Rhetoric Students illustrate a fundamental understanding of the best practices of communicating in English and meet the writing standards of their college or program-based communication requirements.	X
Science & Technology Students successfully apply systematic methods of analysis to the natural and physical world, understand scientific knowledge as empirical, and refer to data as a basis for conclusions.	
Mathematics & Quantitative Skills Students effectively use quantitative techniques and the practical application of numerical, symbolic, or spatial concepts.	X
Society, Diversity, & Connections Students demonstrate understanding of and a logical ability to successfully analyze human behavior, societal and political organization, or communication.	
Human Inquiry & the Past Students interpret historical events or philosophical perspectives by identifying patterns, applying analytical reasoning, employing methods of critical inquiry, or expanding problem-solving skills.	
The Arts & Creativity Students successfully articulate and apply methods and principles of critical and creative inquiry to the production or analysis of works of art.	
5/3/2016	

Special requirements of the course:

a) Reports
b) Surveys
c) Other

Additional information:

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