COURSE SYLLABUS

LAST REVIEW	Fall 2022
COURSE TITLE	TQM and Lean Manufacturing Principles
COURSE NUMBER	AMFT 0170
DIVISION	Career and Technical Education
DEPARTMENT	AMFT
CIP CODE	15.0406
CREDIT HOURS	3
CONTACT HOURS/WEEK	Class: 1 Lab: 4
PREREQUISITES	None
COREQUISITES	None
COURSE PLACEMENT	None

COURSE DESCRIPTION
The purpose of the course is to discover process improvement methodologies using Total Quality Management (TQM) and Lean Manufacturing. Discover the history of process development in global manufacturing. Identify the different characteristics of Quality Assurance versus Quality Control. Introduce process tools such as 5S, Six-Sigma, Kaizen as well as value stream mapping for overall continuous improvement and quality standards. Best practice modeling and implementation will be used in real world examples using working manufacturing lab equipment. Process tools will be covered for the machine side as well with Process tools such as Ishikawa fishbone diagram for root cause analysis, downtime and resource management. And finally the class will explore the fundamental differences between Process Management and Project Management.

PROGRAM ALIGNMENT
This course is part of a program aligned through the Kansas Board of Regents and Technical Education Authority. For more information, please visit:
https://kansasregents.org/workforce_development/program-alignment

Program Learning Outcomes
1. The student will be able to assess hazards, mitigate risk, and develop procedures and protocol to create a safe working environment.
2. Student will be able to collaborate with team members in developing a plan to maximize efficiency in a production facility.
3. The student will be able to evaluate implicit tasks and identify necessary resources to install and maintain industrial equipment.

4. Student will be able to troubleshoot and repair industrial equipment in the high stress environment of modern manufacturing.

TEXTBOOKS
http://kckccbookstore.com/

METHODS OF INSTRUCTION
A variety of instructional methods may be used depending on content area. These include but are not limited to: lecture, multimedia, cooperative/collaborative learning, labs and demonstrations, projects and presentations, speeches, debates, panels, conferencing, performances, and learning experiences outside the classroom. Methodology will be selected to best meet student needs.

COURSE OUTLINE
  I.   Total Quality Management methodologies, history and principles
  II.   Introduction to various process development mythologies
  III. Quality Assurance Vs Quality Control
  IV.   Best Practice modeling and implementation
  V.   Root Cause analysis principles
  VI.   Value Stream Mapping principles
  VII. Repeatable Process assessment principles
 VIII. Introduction to various process development mythologies.
  IX.   Project management vs. process Management as it relates to continuous Improvement

COURSE LEARNING OUTCOMES
Upon successful completion of this course, the student will:

A. The student will be able to describe various TQM methods used in manufacturing.
B. The student will be able to utilize Process tools to define, improve and monitor manufacturing.
C. The student will be able to perform best practice models and work with team to build solutions.
D. The student will be able to utilize 5S to assess lab and projects.
E. The student will be able to work with equipment to perform various Continuous Improvement solutions.
F. The student will be able to calculate financial implications of several TSM Projects.

ASSESSMENT OF COURSE LEARNING OUTCOMES
Student progress is evaluated through both formative and summative assessment methods. Specific details may be found in the instructor's course information document.

COLLEGE POLICIES AND PROCEDURES

Student Handbook
https://www.kckcc.edu/files/docs/student-resources/student-handbook-and-code-of-conduct.pdf

College Catalog
https://www.kckcc.edu/academics/catalog/index.html

College Policies and Statements
https://www.kckcc.edu/about/policies-statements/index.html

Accessibility and Accommodations
https://www.kckcc.edu/academics/resources/student-accessibility-support-services/index.html.