SPRINGFIELD TECHNICAL COMMUNITY COLLEGE

ACADEMIC AFFAIRS

Course Number: Mech-115 Department: MET

Course Title: Introduction to Mechanical Engineering Technology Semester: Fall Year: 2003

Objectives/Competencies

Course Objective	Competencies
1. The major topics to be discussed will be the role that an engineering technologist plays in developing and manufacturing a world-class product.	• The student will be able to identify the major disciplines of engineering; Civil, Mechanical, Electrical, Chemical, and Metallurgical. • The student will define the difference between Mechanical Engineering and Mechanical Engineering Technology. • The student will identify major technological improvements throughout history from Ancient Mesopotamians, Egyptians, • Greeks, Romans, Chinese, English, and contemporary American inventors.

Course Objective	Competencies
2. Some of the critical skills required of the technologist are problem solving, teamwork, business communication and effective writing.	• The student will use the Problem solving methodology (the Deeming Wheel-PDCA) to design and develop solutions to laboratory assignments. • Teamwork skills will be introduced and the student will define the different types of teams; Natural Teams, Improvement Teams, Kaizen events, Cross-functional teams. • The student will use a Brainstorming process to solve laboratory assignments. The student will determine the differences between Freewheeling, Round Robin, and Anonymous brainstorming sessions. • The student will prioritize a brainstormed list using Nominal Group Technique. • The student will apply technical writing skills throughout the semester by generating weekly laboratory writeups. Each writeup requires the student to identify the purpose of the lab, the equipment used, the procedure followed, the data that was generated, and the conclusions that the student made.

Course Objective	Competencies
3. The basic concepts of product design and quality concepts associated with a manufacturing	• The student will solve Engineering Design problems by practicing Estimation skills, incorporating Significant Figure rules, and determining Units of Measure, Prototyping and Reverse Engineering will be key methods to developing new solutions to current product issues. • The student will be able to discuss issues relative to Design for constraints, and customer focus of product design and manufacturing.
4. Use of computer application software to solve problems in Engineering Technology	• The student will use Microsoft Office Applications of Excel, Word, and PowerPoint to analyze and document solutions to Engineering Problems. • The student will generate weekly lab write-ups using a consistent format in Word. • The student will be able to develop an Excel spreadsheet using Data, Formulas, and Text. • The student will develop professional looking spreadsheets with formatting options on Excel and Auto formatting capabilities. • The student will develop graphs in Excel using data from the spreadsheet. • The student will effectively use Absolute and Relative Cell Referencing in the Excel spreadsheet. • The student will prepare a final presentation using PowerPoint to present the solution to an Engineering Design problem.