Sinclair Community College
444 E. Third St.
Dayton, OH 45402

Master Syllabus

EET 2257 - Radio Frequency Identification (RFID) Capstone

Division: Science, Mathematics and Engineering

Department: Electronics Engineering Technology

Credit Hour Total: 3.0 **Lecture Hrs:** 2.0 **Lab Hrs:** 2.0

Prerequisite(s): EET 2157

Date Revised: February 2014

Course Description:

Initiating best analysis, design and implementation of a Radio Frequency Identification (RFID) solution. Configuration and troubleshooting exercises designed to illustrate the power of today's RFID readers and their interaction with input/output, practical, in-depth instruction and hands-on guidance for leveraging RFID in the real world. Two classroom, two lab hours per week.

General Education Outcomes:

- Critical Thinking/Problem Solving

Course Outcomes:

Design and implementation
Design and implement a basic RFID system based on business aspects of cost effectiveness, viability and integration of supply chain principles.

Assessment Method: Performance appraisals
Performance Criteria: Score "17.5" or greater on a five by five rubric

RFID system troubleshooting
Set up and troubleshoot RFID system, including how to use proven tools and techniques for verifying success, selecting most suitable tags and tag placements at the pallet, case and item levels.

Assessment Method: Performance appraisals
Performance Criteria: Score "17.5" or greater on a five by five rubric

Pros and cons of RFID deployment
Establish pros and cons of deploying RFID at various pinch points throughout the supply chain.

Assessment Method: Locally developed exams
Performance Criteria: Score 70% or higher

Outline:

Typical RF antenna field profiles for linear and circular polarized antennas
Tagging pallets, cases and items
System configuration considerations when implementing RFID on conveyors, turntables, portals and other system pinch-points.
Potential environmental interference sources
In-depth tag optimization exercises considering product content, use-case, crossfunctional restrictions and typical tag commissioning techniques
Effect of in/out-of-phase reflections, attenuation, absorption and wave guides
Reader options to reduce interface complexity and hardware expenses as well as dramatically improve system performance