

## 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

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#### 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 Competency

#### 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