

Master Syllabus

HVA 2780 - HVACR Engineering Technology Capstone Project

Division: Science, Mathematics and Engineering

Department: HVAC-R Engineering Technology

Credit Hour Total: 3.0

Lecture Hrs: 1.0 **Lab Hrs:** 6.0

Prerequisite(s): HVA 2201 AND HVA 2301

Date Revised: January 2015

Course Description:

Assessment of achievement by HVACR Engineering Technology students in attaining program outcomes by completing a project demonstrating principles and practices of the major. Teamwork on projects will be emphasized. One classroom, six lab hours per week.

General Education Outcomes:

- Critical Thinking/Problem Solving Competency

Course Outcomes:

Control implementation

Develop all programming, control graphics, and a proper operator interface suitable for proper implementation of developed control strategy.

Assessment Method: Performance appraisals

Performance Criteria:

Instructor and advisory member assessment of 'satisfactory' on capstone rubric.

Develop schematic drawings of existing model systems

Prepare a simplified schematic of an existing system illustrating general operation and equipment placement.

Assessment Method: Portfolios

Performance Criteria:

Instructor and advisory member assessment of 'satisfactory' on capstone rubric.

Ensure system compliance with applicable codes, guidelines, and standards

Review applicable codes and ASHRAE documents to ensure compliance with best practices.

Assessment Method: Portfolios

Performance Criteria:

Instructor and advisory member assessment of 'satisfactory' on capstone rubric.

Perform a system startup and Testing, Adjusting, and Balancing (TAB) procedure

Check all equipment for proper installation and wiring. Clean, fill and treat water system. Start and operate all equipment.

Assessment Method: Performance appraisals

Performance Criteria:

Instructor assessment of 'satisfactory' on capstone rubric.

System documentation

Generate a portfolio of equipment operation documents, TAB documents, calculations, communication documents and any other documents acquired or generated so as to show the system was properly commissioned.

Assessment Method: Portfolios

Performance Criteria:

Instructor and advisory member assessment of 'satisfactory' on capstone rubric.

Control strategy

Develop the control strategies for all control loops.

Assessment Method: Portfolios

Performance Criteria:

Instructor and advisory member assessment of 'satisfactory' on capstone rubric.

Outline:

System Familiarization

Equipment Validation

System Startup

T.A.B. Procedures & Documentation

