

**OAKTON COMMUNITY COLLEGE
GENERIC COURSE SYLLABUS**

I.	<u>Course Prefix</u>	<u>Course Number</u>	<u>Course Name</u>	<u>Credit</u>	<u>Lecture</u>	<u>Lab</u>
	FME	240	Energy Management And DDC Controls	3	3	0

II. Prerequisite

AHR 101 or FME 101 or Program Coordinator's Consent.

III. Course (Catalog) Description

Course provides detailed examination of energy management. Content includes specific focus on building automation systems for energy management using DDC controls for HVAC., fire and security systems; and control of various equipment remotely from a control computerized system and DDC controls. Fee \$30.

IV. Learning Objectives

- 1) Understanding application directly used in building automation systems (EMS) to manage and control energy consumption and conservation.
- 2) Understanding software application programs that are in a network for EMS.
- 3) Integration of Pneumatic HVAC controls and DDC controls.
- 4) Understanding applications for economizer, enthalpy, indoor environmental quality, air systems economizers, etc. for boilers, chillers and cooling towers.

V. Academic Integrity:

Students and employees at Oakton Community College are required to demonstrate academic integrity and follow Oakton's Code of Academic Conduct. This code prohibits:

- cheating
- plagiarism (turning in work not written by you, or lacking proper citation)
- falsification and fabrication (lying or distorting the truth)
- helping others to cheat
- unauthorized changes on official documents
- pretending to be someone else or having someone else pretend to be you
- making or accepting bribes, special favors, or threats, and
- any other behavior that violates academic integrity.

There are serious consequences to violations of the academic integrity policy. Oakton's policies and procedures provide students a fair hearing if a complaint is made against you. If you

are found to have violated the policy, the minimum penalty is failure on the assignment and, a disciplinary record will be established and kept on file in the office of the Vice President for Student Affairs for a period of 3 years.

Details of the Code of Academic Conduct can be found in the Student Handbook.

VI. Outline of Topics:

1. EMS Introduction and Overview
2. Hardware/System Components
3. EMS System Architecture
4. Direct Digital Control (DDC)
5. Networking and Remote Monitoring
6. Software/Application Programs
7. Saving/Cost Estimating
8. Sequence of Events
9. Selection/Expansion
10. Installation and Commissioning EMS
11. Training/Operation/Maintenance
12. Fire Alarms/Security
13. Design/Drawings/Specifications
14. Intelligent Buildings

VII. Methods of Instruction:

Lectures, projects and a visit to a facility that emphasizes aspects of the course.

VIII. Course Practices Required:

Lectures, Assignments, demonstrations of EMS and DDC, Exercises.

IX. Instructional Materials:

Textbook: *Energy Management Systems & DDC*, by Richard A. Panke. Prentice Hall.
Slide/Film Presentations, Field Trips, etc.

X. Methods of Evaluating Student Progress:

- Class participation 1/3
- Project Completion 1/3
- Final Exam 1/3

XI. Other Course Information:

Facilities Management is a new field that will provide students with many opportunities for advancement in the future. More complex and larger facilities require personnel skilled in the art of Facilities Management. Exposure to both technical and people skills arm the students today to deal with the problems of tomorrow.

If you have a documented learning, psychological, or physical disability you may be entitled to reasonable academic accommodations or services. To request accommodations or services, contact the ASSIST office in the Learning Center. All students are expected to fulfill essential course requirements. The College will not waive any essential skill or requirement of a course or degree program.

Effective beginning term Fall 2005 **Ending term** _____

Syllabus prepared by: Chad Ganger **Date:** 12/05

Reviewed by Dept/Program Chair: Chad Ganger **Date:** 12/05

Approved by Dean: R. Sompolski **Date:** 12/05