Course Title: Controllers and Control Loops
Approval Date: 
Quarter Course Prefix and Number: EIAT 2277
Semester Course Prefix and Number: EIAT 2277

Number of Credits: 2
Number of Lecture Credits: 1
Number of Lab Credits: 1
Number of Studio/Discussion Credits: 
Class Size: 24
Negotiated by AASC on __ (Date) __

Course Purpose Code:

__ 0 – Developmental Courses
__ 1 – Non-Transferable General Studies
__ X 2 – Technical course related to career programs
__ 3 – College course which has the primary goal of applying certain concepts (e.g. vocal ensemble)
__ 4 – Other college course not considered a part of general education (MNTC) e.g. computer science, health, physical education
__ 5 – Course which is intended to fulfill Minnesota Transfer Curriculum (MNTC) requirements.
__ 9 – Continuing Education/Customized Training specialized credit course (not occurring in 0-5)

Catalog Description:
This course covers the core of industrial process control, control loops and controllers. The course defines the components, configuration, installation, and I/O calibration of control loops. Analysis of control modes and algorithms for PID control are studied and practiced in a lecture/lab environment. Control mode design and system architecture complete the study.

Prerequisites and/or recommended entry skills/knowledge:
Course Prerequisite(s): EIAT 1275 and Introduction to Computers.
Reading Prerequisite: Minimum score on basic skills test
Composition Prerequisite: None
Mathematics Prerequisite: Minimum score on basic skills test

Career Programs and Transfer Majors Accessing this Course:
Electrical and Industrial Automation Technology

Minnesota Transfer Curriculum Goal(s) partially met by this course if applicable:

0. __ X None
1. ___ Communications
2. ___ Critical Thinking
3. ___ Natural Sciences
4. ___ Mathematical/Logical Reasoning
5. ___ History and the Social and Behavioral Sciences
6. _____ The Humanities and Fine Arts
7. ____ Human Diversity
8. ____ Global Perspectives
9. ___ Ethical and Civic Responsibility
10. ____ People and the Environment
Learning outcomes, including any relevant competencies listed in the Minnesota Transfer Curriculum:

Following the completion of this course the student will be able to demonstrate the ability to:

1.) Identify controller variables.
2.) Identify the controller PID algorithm.
3.) Define process dynamics variables.
4.) Tune PID controllers.
5.) Implement PID control in an integrated process..
6.) Troubleshoot PID loops.

Possible student assessment methods:

Lab assignments, worksheets, papers, and tests.

Use of instructional technology (includes software, interactive video and other instructional technologies):

Power Point Software, videos, software based lab simulators.

A one-paragraph summary or outline of the major course content:

See “Learning Outcomes” above.

Additional special information (special fees, directives on hazardous materials, etc.)

Laptop Computer Lease

Approvals:

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Distribution:  Original – Administrative Office
Copies: Curriculum Committee Chair, Learning Center, Library, Originating Faculty Member, Records, Student Services, Scheduler, Transfer Specialist
Revised February 10, 2004