

SYLLABUS/OUTLINE

INSTITUTION: Danville Community College

DIVISION: Business, Engineering & Industrial Technologies **REVISED:** SP 2014

CURRICULA IN WHICH COURSE IS TAUGHT: Electrical/Electronic Engineering Technology

COURSE NUMBER AND TITLE: INS 230- Principles of Measurement

INSTRUCTOR NAME: Kiger

INSTRUCTOR EMAIL: ckiger@dc.vccs.edu

INSTRUCTOR OFFICE HOURS: MW 7:30 a.m.-8:00 a.m. TTH 7:30 a.m. -8:00 a.m.
12:15 p.m.-2:45 p.m. 10:30 a.m.-12:00p.m.

CREDITS: 3 **HOURS/WK LECTURE:** 2 **HOURS/WK LAB:** 3

TEXTBOOK: Electrical Motor Controls for Integrated Systems by Rockis and Mazur

I. CATALOG DESCRIPTION: Presents the fundamental scientific principles of process control including temperature, pressure, level, and flow measurements. Topics include transducers, thermometers, and gauges are introduced along with calibration.

II. RELATIONSHIP OF THE COURSE TO CURRICULA TO OBJECTIVES IN WHICH IT IS TAUGHT:
Teaches the principles of industrial measurements used in industry.

III. REQUIRED BACKGROUND: The student must have completed three semesters of electrical electronics or have the instructors permission.

IV. COURSE CONTENT:

- Pressure measurement and control.
- Temperature measurement and control.
- Flow measurement and control.
- Level measurement and control.
- Proximity detectors.
- Photo detectors.
- Motion control.
- Servo devices.

V. THE FOLLOWING GENERAL EDUCATION OBJECTIVES WILL BE ADDRESSED IN THIS COURSE

Communication

- 1.1 understand and interpret complex materials;
- 1.3 use standard English;
- 1.5 use listening skills;

Critical Thinking

- 2.4 weigh evidence and decide if generalizations or conclusions based on the given data are warranted;
- 2.5 determine whether certain conclusions or consequences are supported by the information provided;
- 2.6 use problem solving skills.

Information Literacy

- 4.1 determine the nature and extent of the information needed;
- 4.2 access needed information effectively and efficiently;
- 4.4 use information effectively, individually or as a member of a group, to accomplish a specific purpose;

Quantitative Reasoning

- 6.1 use logical and mathematical reasoning within the context of various disciplines;
- 6.2 interpret and use mathematical formulas;
- 6.3 interpret mathematical models such as graphs, tables and schematics and draw inferences from them;
- 6.4 use graphical, symbolic, and numerical methods to analyze, organize, and interpret data;

VI. LEARNER OUTCOMES:

1. The student will be able to recognize and identify industrial measurement and control systems.
2. The student will be able to describe and specify industrial measurement and control systems.
3. The student will be able install, troubleshoot and maintain industrial measurement and control systems.

VII. EVALUATION:

- Attendance and class preparation
- Homework - quizzes
- Take home problems and take home circuit analysis problems
- Reports: oral and written
- Tests (in class)
- Projects
- Final examination or final project, substituted for the final exam, as determined by the instructor.
- Instructor evaluation of laboratory exercises.

No Shows

If a student never attends a class or only attends one time before the refund deadline, the student will be considered a *"no show"* and withdrawn from the class. Faculty will report *"no shows"* to the division office by the refund deadline for all classes they teach.

Medical Conditions

Danville Community College is committed to meeting the needs of all students and providing access for persons with disabilities. Reasonable accommodations are available to those students with diagnosed disabilities. Students with diagnosed disabilities wishing to receive specific accommodations must be registered with the Disability Services. For more information, please contact Dr. Carl Amos, ADA Coordinator, at 797-8479 or camos@dcc.vccs.edu.

COLLEGE ATTENDANCE POLICY:

When absence from a class becomes necessary, it is the responsibility of the student to inform the instructor prior to the absence, whenever possible. The student is responsible for making up **all** work missed during an absence. It is the philosophy of Danville Community College that student and faculty interactions are critical to the learning process. Class attendance enhances this process. Regular attendance is thus expected of students. Students missing **twenty-five percent (25%) or more of the total time** allocated for classes and or labs may be administratively withdrawn from the class upon recommendation of the instructor. Students who are administratively withdrawn prior to completion of 60% of the class will be issued a grade of "W." After that point, students who are administratively withdrawn will be issued a grade of "F."

INSTRUCTOR ATTENDANCE POLICY:

Students are expected to be in class at start of the class meeting time and stay until the class concludes. Students who arrive late or leave early will be marked "Tardy". Three tardy marks will equal one day absent. This class meets 32 times during this semester which, according to college policy, means if you miss 8 days you fail the course. If you miss 4 days, your grade will drop by one letter. If you miss 6 days, your grade will drop by 2 letters.