

COURSE SYLLABUS

DIVISION: Workforce Services

CURRICULUM IN WHICH COURSE IS TAUGHT: Integrated Systems Technology

COURSE NUMBER AND TITLE: INS 230, Instrumentation I

CREDIT HOURS: 3-4

HOURS/WEEK LECTURE: 2-3

HOURS/WEEK LAB: 1-3

LECTURE/LAB COMBINATION: 5-6

The OEE classes are self-paced study classes in which a student has 16 weeks to complete once enrolled. Students will complete all lab and bookwork before doing the end of chapter tests. All end of chapter tests and final exams are closed book. Upon completion of the lab, all tools, components, and supplies shall be returned to their proper location.

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 CURRICULUM OBJECTIVES IN WHICH IT IS TAUGHT:

This course offers the basic fundamentals of instrumentation and is necessary for today's industrial maintenance technicians.

III. REQUIRED BACKGROUND: This course is intended for those individuals with no prior experience in instrumentation. Prerequisite: ETR 115 and ELE 147 or equivalent.

IV. COURSE CONTENT

- Introduction to Process Control
- Instrument Tags
- Piping and Instrumentation Diagrams
- Loop Controllers
- Final Control Elements
- Level Measurements
- Liquid Level Control
- Methods of Automatic Control
- Basic Flow Measurement
- Control Loop Performance
- Ultrasonic Level Measurement and Control
- Differential Pressure Flow Measurement and Control

V. Learner Outcomes

VI. Evaluation

Demonstrate an understanding of the theory of operation, maintenance procedures, and safety concerns related to Process Control

Class participation, homework, quizzes, and final exam

Demonstrate an understanding of the theory of operation, maintenance procedures, and safety concerns related to Instrument Tags	Class participation, homework, quizzes, and final exam
Demonstrate an understanding of the theory of operation, maintenance procedures, and safety concerns related to Piping and Instrumentation Diagrams	Class participation, homework, quizzes, and final exam
Demonstrate an understanding of the theory of operation, maintenance procedures, and safety concerns related to Loop Controllers	Class participation, homework, quizzes, and final exam
Demonstrate an understanding of the theory of operation, maintenance procedures, and safety concerns related to Final Control Elements	Class participation, homework, quizzes, and final exam
Demonstrate an understanding of the theory of operation, maintenance procedures, and safety concerns related to Level Measurements	Class participation, homework, quizzes, and final exam
Demonstrate an understanding of the theory of operation, maintenance procedures, and safety concerns related to Liquid Level Control	Class participation, homework, quizzes, and final exam
Demonstrate an understanding of the theory of operation, maintenance procedures, and safety concerns related to Methods of Automatic Control	Class participation, homework, quizzes, and final exam
Demonstrate an understanding of the theory of operation, maintenance procedures, and safety concerns related to Basic Flow Measurement	Class participation, homework, quizzes, and final exam
Demonstrate an understanding of the theory of operation, maintenance procedures, and safety concerns related to Control Loop Performance	Class participation, homework, quizzes, and final exam
Demonstrate an understanding of the theory of operation, maintenance procedures, and safety concerns related to Ultrasonic Level Measurement and Control	Class participation, homework, quizzes, and final exam
Demonstrate an understanding of the theory of operation, maintenance procedures, and safety concerns related to Differential Pressure Flow Measurement and Control	Class participation, homework, quizzes, and final exam

VII. The course supports the following general education goals/objectives:

DCC Educational Objectives

- Communication
- Critical Thinking
- Information Literacy
- Quantitative Reasoning

DCC Title IX (Sexual Harassment and Misconduct): Your Rights and How to Make a Report
Consistent with its mission, Danville Community College is committed to providing a learning and working environment that emphasizes the dignity and worth of every member of its community. Sexual misconduct, which encompasses a range of behavior used to obtain sexual gratification against another's will or at the expense of another in any form will not be tolerated. Sexual misconduct includes sexual harassment, sexual assault, sexual exploitation, and sexual violence. Sexual harassment is unwelcome conduct of a sexual nature, which can include unwelcome sexual advances, requests for sexual favors, or other verbal, nonverbal, or physical conduct of a sexual nature. Thus, sexual harassment prohibited by Title IX can include conduct such as touching of a sexual nature; making sexual comments, jokes, or gestures; writing graffiti or displaying or distributing sexually explicit drawings, pictures, or written materials; calling students sexually charged names; spreading sexual rumors; rating students on sexual activity or performance; gender-based stalking or bullying; conditioning a benefit on submitting to sexual advances; or circulating, showing, or creating e-mails or websites of a sexual nature. Under Title IX, this constitutes sexual misconduct and includes rape or sexual assault.

If you have been the victim of sexual harassment or other sexual misconduct, you have certain rights under Title IX. For additional information regarding your rights, please consult the DCC Title IX website at http://www.dcc.vccs.edu/News/Title_IX/Title_IX_and_Sexual_Misconduct.htm.

In accordance with College policy and federal law, all faculty and staff members are required to report incidents of sexual harassment including sexual violence to one of the individuals below whose responsibility it is to investigate all complaints. In addition, you can contact these individuals for a complaint against a Danville Community College faculty or staff member for sexual harassment, sexual assault, sex discrimination, or other forms of sexual misconduct:

Title IX Coordinator: Ms. Andrea Burney
Wyatt Building, Room 212
434.797.8458
titleix@dcc.vccs.edu or
aburney@dcc.vccs.edu

Deputy Title IX Coordinator Mr. Howard Graves
Wyatt Building, Room 108
434.797.8443
titleix@dcc.vccs.edu or
hgraves@dcc.vccs.edu

Plagiarism and Academic Dishonesty:

Students will be expected to maintain complete honesty and integrity in their academic work in this class. Acts of academic dishonesty, such as cheating, plagiarism, or inappropriately using the work of others to satisfy course requirements, will be not tolerated. Students who maintain their enrollment in this class agree that such acts will be managed at the discretion of the instructor according to the severity or the infraction. (Faculty may here specify the sorts of actions you will take in the event of a violation of academic dishonesty)