MASTER COURSE OUTLINE

Prepared By: Bill Autry

Date: May 2014

COURSE TITLE

Introduction to Instrumentation

GENERAL COURSE INFORMATION

Dept.: IST	Course Num: 170	(Formerly:)
CIP Code: 15.0404	Intent Code: 21	Program Code: 784
Credits: 5		
Total Contact Hrs Per Qtr.: 77		
Lecture Hrs: 33	Lab Hrs: 44	Other Hrs:
Distribution Designation:		

COURSE DESCRIPTION (as it will appear in the catalog)

Fundamentals of process control as it applies to process variables, measurement dynamics, & automatic corrective measures in the industrial environment.

PREREQUISITES

IST 107 or Instructor Permission

TEXTBOOK GUIDELINES

Appropriate textbook as determined by faculty (Example: *Industrial Instrumentation,* by Al Sutko & Jerry Faulk)

COURSE LEARNING OUTCOMES

Upon successful completion of the course, students should be able to demonstrate the following knowledge or skills.

1) Observe safety rules pertinent to industrial instrumentation process practices.
2) Use reference materials & manufacturer's instructions on the usage of industrial instrumentation equipment.
3) Understand elementary control theory as it applies to industrial instrumentation.
4) Demonstrate the use of precision test equipment to determine circuit conditions.
5) Demonstrate rudimentary troubleshooting techniques.
6) Demonstrate basic calibration techniques.

INSTITUTIONAL OUTCOMES

COURSE CONTENT OUTLINE

1. Introduction to control theory
2. AC & DC electricity as it applies to instrumentation
3. Electronics theory
4. Measurement of pressure
5. Various signal transmission
6. Measurement schemes for temperature & heat
7. Control of process levels
8. Measurement of flow

9. Measuring devices for humidity
10. Miscellaneous variables
11. Process control

DEPARTMENTAL GUIDELINES *(optional)*
Students will be evaluated and grades will be awarded on the following criterion: Attendance; Participation/Assignments; Cumulative quiz and intermediate test scores; and a comprehensive final exam.

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DIVISION CHAIR APPROVAL **DATE**