

INST2110-PROCESS CONTROL 4 CREDITS

SYLLABUS

CATALOG DESCRIPTION

This course is an introduction to automatic process control systems. Study will include valves, positioners and actuators. Cascade, feed forward, flow control, level control system processes, and PID loops will be examined. The student will learn PID tuning with different methods.

Prerequisites: INST 1920

Semester Offered: Spring/Fall

Common Student Learning Outcomes

Upon successful completion of San Juan College programs and degrees, the student will demonstrate competency in...

BROAD AND SPECIALIZED LEARNING

Students will actively and independently acquire, apply, and adapt skills and knowledge with an awareness of global contexts.

CRITICAL THINKING

Students will think analytically and creatively to explore ideas, make connections, draw conclusions and solve problems.

CULTURAL AND CIVIC ENGAGEMENT

Students will act purposefully, reflectively, and ethically in diverse and complex environments.

EFFECTIVE COMMUNICATION

Students will exchange ideas and information with clarity in multiple contexts.

INFORMATION LITERACY

Students will be able to recognize when information is needed and have the ability to locate, evaluate, and use it effectively.

INTEGRATING TECHNOLOGIES

Students will demonstrate fluency in the application and use of technologies in multiple contexts.

Student work from this class may be randomly selected and used anonymously for assessment of course, program, and/or institutional learning outcomes. For more information, please refer to the Dean of the appropriate School.

Course Learning Outcomes

Upon successful completion of the course, the student will be able to...

1. Describe different control strategies such as ON/OFF, proportional control, integral control, derivative control, feedforward control, ratio control, cascade control, etc.
2. Identify final elements of the control loop

3. Read piping and instrumentation diagrams.
4. Define safety instrumented system.
5. Use different types of analyzers.
6. Perform controller tuning using trial-error method, Ziegler-Nichols closed loop tuning method and Ziegler-Nichols open loop tuning.
7. Troubleshoot control processes.