



**IPOP 2460 Introduction to Instrumentation Section Name Section Credit Hours Credits**  
**Syllabus**

## Course Information

**Meeting times and location:** section meeting\_times section location

**Catalog description:** Covers the varied instruments and instrument systems used in the process industry. This includes process variables, elements and instruments of pressure, level, flow, temperature and analytical devices, control loops, controllers, final control elements, Process Flow diagrams, piping and Instrumentation Diagrams and Instrumentation troubleshooting.

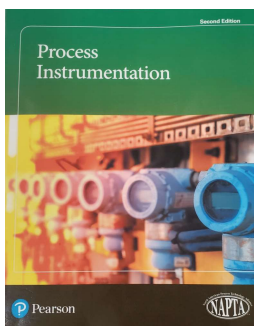
**Terms offered:** Fall and Spring

**Section-specific Course Description:**

## Course Level Objectives

1. Define different terms associated with instrumentation categories and types
2. Identify and define the major process variables controlled in the process industry, as well as their units of measure and how to convert from one unit of measure to another
3. Explain the relationships between common process variables
4. Identify how pressure, temperature, level, flow and concentration are measured
5. Identify the instruments that comprise a control loop and describe their functions
6. Identify different control philosophies and principles used in controlling process variables as well as define terms associated with these control philosophies.
7. Interpret a Process and Instrumentation Diagram

## Required Texts and/or Materials



## **Process Instrumentation**

978-0-13-521392-6

Hoboken: Pearson

2020

Second edition

North American Process Technology Alliance

## Required Technology and Software

- Canvas
- Chrome, Safari, or Firefox

## Course Requirements

Students will do the following activities:

### 1. Class Attendance - 20%

Much of the learning occurs in the process lab setting and cannot be made up by reading the textbook. Therefore, class attendance and participation are essential to your learning and attendance will be taken. IF YOU HAVE MORE THAN 4 ABSENCES, YOU MAY AUTOMATICALLY FAIL THE CLASS. Class attendance is 25% of the grade, included in this is punctuality and class participation. Points will be taken off for tardiness, leaving early and not participating in class activities.

### 2. Chapter Review Quizzes – 10%

After each chapter in the textbook, a “Chapter Review” quiz in CANVAS will be administered.

### 3. Sectional Exams – 15%

After a certain amount of material is covered, a sectional exam will be administered through CANVAS. These tests cover material in your textbook, Chapter Review quizzes and possible Plant & Lab exercises you've completed.

#### 4. Plant and Lab – 20%

Skill Checks are performance checks to assist you in learning new skills and knowledge. A number of the skill checks have self-evaluations (answers) that will be given to you once you have completed the Skill Check.

#### 5. Computer Based Training (CBTs) – 15%

The CBT subject matter is designed to coincide for the most part with the material being covered in your textbook. Tests cover the handbook, available in CANVAS.

#### 6. Final Exam – 20%

The final exam will be comprehensive covering all the material presented in this class

#### 7. Make-Up Test Policy

A penalty can be assessed for taking tests late if the instructor wasn't given prior notification.

#### 8. Students must wear clear safety glasses and hard-toed shoes when working in the Process and Water Labs.

#### 9. Portfolio

Students will be required to maintain a portfolio throughout the IPOP program. The portfolio will consist of a notebook containing key lessons or skills completed while going through the program. These lessons or skills include: PFD drawings of the modules, hands-on competencies requiring you to start-up, shut-down and take a set of readings for the modules, hands-on performance of certain analytical test done in the water lab and other key assignments. In order to progress to the next semester, you must successfully pass the items required for the present semester based on a Pass/Fail evaluation of each item. Students are required to maintain the portfolio, turning them in at the end of each semester for review and given back to you at the start of the next semester.

## Other Classroom Policies and Expectations

Students will abide by all SJC Rules and Regulations, Safety, Health & Environmental practices used at this facility. Cell phones, computers and other electronic devices should remain off unless used in part of the Hands-On Training. No foul language, obscene clothing or unsafe acts or class disruptions.

Students must complete this course with 76% or higher to progress to the next class.

## Grading

Grading Scale:

ABCD F

93 - 100 %
85–92
76–84
69–75
68 or below

To determine final grades use the calculations above along with the table below...

Category

Weight

Attendance	20
Plant & Lab Skill Checks	20
CBT Post Tests	15
Quizzes, Written Assignments	10
Sectional Exams	15
Final Exam	20

example of grade calculation

Category	Current Average	Weight	Points
Chapter quizzes	95 x	.25	23.75
CBT Post Tests	89 x	.25	22.25
Sectional Exams	85 x	.25	21.25
Final Exam	100 (assumed) x	.25	25
Your Grade			92.25

## Course Time Commitment

Class time is 3.5hrs./day Mon.-Thurs 14 hrs./week Face to Face

Students will spend approximately 6-9 hours per week outside of class to complete their homework assignments and testing required of them.

## Canvas Participation and Expectations

Instructor will issue guidelines.

## Participation and Attendance Policy

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## Instructor Response Times & Regular Interaction Expectations

Instructor will respond within 24 hours.

## Key Dates to Remember

[Full Academic Calendar](#)

## Course Schedule

Instructor will post schedule each semester.

## Program Handbook

Not applicable.

## Technical Support

Technical support is available through the San Juan College Help Desk 24/7/365. The help desk can be reached at 505-566-3266 or by creating a ticket at [San Juan College Help Desk](#).

For password reset and Canvas support, visit the [Student Technology Guide](#) website.

## Accessibility/Privacy Policies for all Technology Tools Used

[Accessibility/Privacy Policies for all Technology Tools Used](#)

## Student Support

At San Juan College, we are committed to supporting your academic success and overall well-being. We recognize that college life can be challenging and stressful, impacting both learning and personal health. We are here to help you succeed.

### **Academic Support and Resources**

We provide a range of academic support services to help you stay on track on your educational journey. Free resources include tutoring, computer loans, life skills workshops, and so much more. Visit the [Academic Support and Resources](#) webpage to learn more about support and resources available through Academic Advising, the Tutoring Center, the Student Resource Center (formerly Student Achievement Center) and the Testing Center.

### **Student Support and Resources**

If you or someone you know could benefit from counseling, accessibility services, career exploration, veteran transitional assistance, or any of our other support services, visit the [Student Support and](#)

[Resources](#) webpage where you'll find detailed information about various resources available to you as an SJC student.

We encourage you to take advantage of these free resources to enhance your college experience and ensure your success.

## College Policies and Resources for Current Students

The [Student Handbook](#) provides information on student support, student organizations, and student conduct policies at San Juan College.

The San Juan College catalog outlines the [Academic Policies](#) students need to know.

## Healthy and Safe Practices for Being on Campus

We want a healthy and safe campus for students, faculty, staff, and guests.

### **Contagious diseases and your responsibility:**

If you have COVID-19 symptoms, fever, flu or even the common cold, you should stay home. Do not come to campus if you are feeling sick. Contact your instructor about missing class (and review your instructor's policies on missed or late work). Being sick does not necessarily excuse you from completing your work on time.

### **Safety on campus and your responsibility:**

If you are on campus and experience or witness an emergency, call 9-1-1 first and then the Department of Public Safety at 505-566-3333 (or just 3333 if calling from a campus phone).

When you are on campus, be aware of your surroundings. If you need an escort to your vehicle, call 505-566-4444 (DPS non-emergency line) or 505-215-3091 (officer on duty line).

The College will send information for campus emergencies through SJC AlertAware, email and the webpage. Stay informed and stay safe.

## Inclement Weather Information

Students will receive notification of class delays and cancellations due to inclement weather via the SJC AlertAware and SJC student email. Face-to-face classes will not meet in person; however, students are advised to check with instructors about alternative meeting options, as some may

choose to meet via zoom. Hybrid classes will meet as scheduled via zoom. For questions regarding your class delay or cancelation, please contact your instructor.

## Online Course Fee

Online Courses - San Juan College requires all online courses to include some form of assessment to demonstrate the mastery of course objectives. This could include exams, capstone projects, e-portfolios, presentations, final papers or other appropriate assessments. The use of a proctoring platform, plagiarism detection software or other method to ensure that assessments are completed by the enrolled student is required.

A course fee of \$5.00 is assessed for all online courses at San Juan College to cover the cost of the above services. Students who are required to take a proctored exam and choose to use a physical testing center outside the SJC Testing Center or SJC Disability Services will be responsible for the cost of using that center.