



Course Syllabus

Petroleum Instrumentation

PTRT 1424

Course Description: Study of instruments, instrument systems, terminology, process variables, and control loops as used in a petroleum environment.

Semester Hours Credit: 4

Lecture/Lab Hours: Class meets for (3) lecture hours and (3) lab hours per week.

Prerequisite: Introductory

Textbook(s): Introduction to Process Control Series 771: Schoolcraft Publishing.
Introduction to Instrumentation Series SPC 118: Schoolcraft Publishing.

Student Learning Outcomes: The course will provide the student with information of the different types of unit measurements used in the oil and gas field. The student will have a basic knowledge of how the different control devices work and how to adjust the corrective action to make the instruments operable in the oil and gas industry. The student will have a knowledge of the internal working parts of the following control devices: pneumatic, hydraulic, fluids, and electronic.

Upon completion of this course the student should have an understanding of how oil field instrumentation is vital in the industry. The student will have a basic knowledge of the following:

1. The nature of process control
2. Elements of process control
3. Process control signals
4. Process control drawings
5. Using symbols and diagrams
6. Process control loop operations
7. Principles of pressure in liquids and gases
8. Pressure sensors
9. Properties of fluid flow
10. Primary measuring devices
11. Principles of level measurement



12. Electrical instruments
13. Temperature measurement principles and indicators
14. Bimetallic and fluid filled temperature instruments
15. Fundamentals of control loops
16. Principles of transducer operations
17. Electrical level instruments
18. PLC systems
19. Familiarization of SCADA systems

Evaluation Methods: Will be based on the following criteria:

Tests & Assignments	50%
Lab	25%
Final Exam	25%

A-100-90 Points, B 89-80, C 79-70, D 69-60, F 59 & Below

ADA Statement: No qualified individual with a disability shall, by reason of such disability, be excluded from participation in or be denied the benefits of the services, programs, or activities of the College District, or be subjected to discrimination by the College District. Nor shall the College District exclude or otherwise deny equal services, programs, or activities to an individual because of the known disability of an individual with whom the individual is known to have a relationship or association. 42 U.S.C. 12132; 28 CFR 35.130(g).

See at: [GL \(Legal\)](#)

Special Needs Services: Students with special needs, including physical and learning disabilities, who wish to request accommodations in this course should contact the Student Development Office as soon as possible to make arrangements; this should occur no later than the second week of class or as soon as the student has the documentation on the disability and requested accommodation per a certified medical or psychological professional. In accordance with federal law, a student requesting accommodations must provide documentation of disability to the Student Development Advisor.

For more information, contact: in Alice at sdalice@coastalbend.edu; Beeville at sdbeeville@coastalbend.edu; Kingsville at sdkingsville@coastalbend.edu; and Pleasanton at sdpleasanton@coastalbend.edu.

Academic Dishonesty: Each student is charged with notice and knowledge of the contents and provisions of Coastal Bend College's rules and regulations concerning student conduct. All students shall obey the law, show respect for properly constituted authority, and observe correct standards of conduct. Scholastic dishonesty shall constitute a violation of these rules and regulations and is punishable as prescribed by Coastal Bend College Policies FLB (Local) and FM (Local). Scholastic dishonesty shall include, but not be limited to, cheating on a test, plagiarism, and collusion.

See at: [FLB \(Local\)](#) and [FM \(Local\)](#).



See the [Student Handbook](#) for further explanation of Scholastic Dishonesty.

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NOTE: The College website (www.coastalbend.edu) serves as the main source with the most current version of the Coastal Bend College Board Policies and the Coastal Bend College Catalog.