



**Course Syllabus**

**Petroleum Instrumentation  
PTRT 1324**

\*\*\*\*\* Note to Student \*\*\*\*\*

Student Success is our number one priority at Coastal Bend College and we realize that prompt, effective communication plays a significant role in achieving that goal. It is vitally important that you have the proper contact information for your instructor. This should include their phone number, email address, and if applicable, their office number, and office hours. If you ever have any problems contacting your instructor, or do not receive a prompt response to your inquiries, please contact the Director of Technical Programs, or the Dean of Workforce, as soon as possible. Their contact information is provided below:

Coordinator of Industrial Workforce: Rolando Chavarria; 361-664-2981 EX 3027; [rolandjr@coastalbend.edu](mailto:rolandjr@coastalbend.edu)  
Director of Technical Program, Noemi Aguilar: 361-354-2306; [aguilar@coastalbend.edu](mailto:aguilar@coastalbend.edu)  
Dean of Workforce Programs, Julia Garcia: (830) 569-4222 X1202; [jgarcia@coastalbend.edu](mailto:jgarcia@coastalbend.edu)

<b>Course Description:</b>	Study of instruments, instrument systems, terminology, process variables, and control loops as used in a petroleum environment.
<b>Semester Hours Credit:</b>	4
<b>Lecture/Lab Hours:</b>	Class meets for (2) lecture hours and (4) lab hours per week.
<b>Prerequisite:</b>	Introductory
<b>Textbook(s):</b>	Introduction to Process Control Series 771: Schoolcraft Publishing. Introduction to Instrumentation Series SPC 118: Schoolcraft Publishing.



**End-of Course 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

**Student Learning Outcome:** The student will describe in detail the elements of process control operations on both open and close loop systems.



**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](mailto:sdalice@coastalbend.edu); Beeville at [sdbeeville@coastalbend.edu](mailto:sdbeeville@coastalbend.edu); Kingsville at [sdkingsville@coastalbend.edu](mailto:sdkingsville@coastalbend.edu); and Pleasanton at [sdpleasanton@coastalbend.edu](mailto: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.

**Copyright Law and Intellectual Property Rights Policy:** Copyright is the right of an author, artist, composer or other creator of a work of authorship to control the use of his or her work by others. Protection extends to literary works, musical works, dramatic works, pantomimes and choreographic works, pictorial and graphic works, sculpture, motion pictures and other audiovisual works, sound recordings and architectural works. Generally speaking, a copyrighted work may not be reproduced by others without the copyright owner's permission. The public display or performance of copyrighted works is similarly restricted. Generally, the unauthorized reproduction, performance or distribution of a copyrighted work is copyright infringement and may subject the infringer to civil and criminal penalties. The Fair Use Doctrine outlines exceptions to this Law and is outlined in Coastal Bend College Policy, [CT \(Legal\)](#).

Coastal Bend College



Coastal Bend College, its faculty, students and employees must comply with Copyright Law. Detailed information on Copyright Law and Intellectual Property Rights is available in Coastal Bend College Policy [CT \(Legal\)](#) and [CT \(Local\)](#).

Questions regarding this information should be directed to the Director of Library Services at: [library@coastalbend.edu](mailto:library@coastalbend.edu) or the Office of Marketing and Public Relations at: [socialmedia@coastalbend.edu](mailto:socialmedia@coastalbend.edu).

**Intellectual Property: Student /Third Party Works:** Rights to copyrightable or patentable works created by a student or a third party, that is, not a College District employee, shall reside with the author/ creator. Detailed information on Copyright Law and Intellectual Property Rights is available in Coastal Bend College Policy [CT \(Legal\)](#) and [CT \(Local\)](#).

Questions regarding this information should be directed to the Director of Library Services at: [library@coastalbend.edu](mailto:library@coastalbend.edu) or the Office of Marketing and Public Relations at: [socialmedia@coastalbend.edu](mailto:socialmedia@coastalbend.edu).

**NOTE:** The College website ([www.coastalbend.edu](http://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.

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