

ENGT 1320
Process Operations Technical II
Instrumentation & Industrial Documentation Syllabus

Course Description: This course continues to explore the components and equipment of the process operations industry such as boilers, AC/DC motors, and generators. Students will also be able to identify and explain the operation of basic instruments used in a variety of industrial processes such as temperature, pressure, and flow. Students will also learn how to read and accurately interpret a standard drawing related to industry. It is the second in a series of courses on technical knowledge and focuses on larger industrial equipment.

Fundamental Goals & Outcomes:

- *Communications*
 - Students will communicate all written and verbal work in an organized and professional manner.
- *Critical Thinking*
 - Students will be able to identify and explain the function and use of various process instrumentation equipment.
 - Students will be able to read, interpret and create or modify process documentation utilized in the process industry.
- *Technology*
 - Students will learn and operate various current process equipment technologies utilized in industry.

Course scope and what the student can expect:

- The course will consist of a variety of lectures, research assignments, and hands-on demonstrations.
- Students will be able to identify and explain the operation of instrumentation technology utilized in a variety of industrial processes such as:
 - Physical Measurements: e.g., temperature, pressure, and flow.
 - Analytical Measurements: e.g., pH, CO₂, H₂S, O₂
 - Final Control Elements: e.g., Control Valves, Dampers and VFD's
- Students will also learn how to draw, modify, read and accurately interpret the standard drawing types utilized in the process industry such as:
 - Process Flow Diagrams (PFD)
 - Piping and Instrumentation Drawings (P&ID)
 - Electrical Schematics
 - Hydraulic Schematics
 - Logic Diagrams

Performance expected of the student:

- Embrace that understanding process instrumentation and documentation is essential to success in the process operations industry and as a process operator.
- Be fully engaged in my learning and on time every day.
- Self-identify and utilize learning resources inside and outside of class to meet my learning goals.
- Embrace that continuous learning is intrinsic to one's future career success.

Extra help available:

If you experience difficulties in this class, please notify us as soon as possible. If needed, we can work through the Academic Support Center to provide additional help (at no cost to the student).

Academic Integrity:

This program adheres to and will enforce the ICC Academic Integrity Policies.
<http://www.itascacc.edu/academics/college-policies/academic-integrity>

Performance and Grading Commitment:

Students can expect one or two private consultations with the instructor to discuss any performance, concerns or questions the student or instructor may have. I commit to providing a mid-semester assessment and final grade within one week of returning loaned research tools and the final submittal of deliverables.

Grading and Deliverables:

All deliverables are due on time; unexcused late submittals will receive a grade of **0%**. Final course grading for Exams, Quizzes, Assignments, etc. will be based on the accumulated individual scores as a percentage of the course total available points.

Deliverable	Score	Available	Percentage
Exams & Quizzes		TBD	
Research & Presentation Assignments		TBD	
Labs		TBD	
Engagement with learning & observations*		+/-20%	
Instructor Discretionary		+/-20%	

Engagement & observations include items such as but not limited to: e.g., on time, class participation, attitude, student's initiative, attendance, quality of work, etc. ***Students are expected to schedule all nonemergency personal business outside of scheduled class time.*** Two unexcused absences will result in unrecoverable 10% reduction in grade; three unexcused absences will result in a course grade of an "F," and the student will be dropped from the program.

Final Grading Policy:

Final %	Grade
>90%	A
80-89.99%	B
70-79.99%	C
<70%	F

Disability services:

The college will make reasonable accommodations for persons with documented disabilities. Students should notify the Director of the Disability Services/Office for Students with Disabilities (located in Backes Student Center right next to the Bookstore) and their instructors of any accommodation needs as soon as possible.

Signatures:

Student:

Date:

Instructor: *Thomas J. Raiche* 9/6/2018