Brazosport College

Syllabus for PTAC 1302 – Introduction to Process Technology

Instructor: Gregg Curry
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Scheduled Office Hours for Gregg Curry:

DAY	TIME
MONDAY	**11:00 AM – 4:00 PM**
TUESDAY	**8:30 – 11:30 AM**
WEDNESDAY	**9:00 AM – 12:00 PM** **7:00 PM – 8:00 PM**
THURSDAY	**8:30 – 11:30 AM**
FRIDAY	**OUT OF OFFICE**

***Meetings with the instructor by appointment only.**

***If posted office hours do not meet your availability, then another time can be arranged.**

I. COURSE DESCRIPTION:

PTAC 1302 - Introduction to Process Technology CIP 4103010003
Introduction to chemical and refinery plant operations. Topics include process technician duties, responsibilities, and expectations; plant organizations; plant process and utility systems; and the physical and mental requirements of the process technician. **Credit Hours:** 3 (3 lecture, 0 lab)

A. **Required skill level:** College-level reading and writing. Math: College-level with corequisite (placement code 3).

II. COURSE OBJECTIVES

Topic Name	Objectives
Course Overview	1. Describe the following components (aspects) of the PTAC Program: • Individual expectations • Program purpose • Program value • Industry involvement 2. Review course objectives
History of the Process Industry	1. Explain the growth and development of the process industries. 2. Report the impact of the industry on: • The community • Other industries • The environment • The economy 3. Identify industry responses to current issues and trends such as: • Global competition • Safety and environmental regulations • Technology advancements 4. Explain and describe the responsibility of the following regulatory agencies: • EPA (Environmental Protection Agency) • OSHA (Occupational Safety & Health Administration • DOT (Department of Transportation) • NRC (Nuclear Regulatory Commission) • Homeland Security • Local and state regulatory agencies
Green Technologies and Related Industries (Optional)	1. Describe Green technologies relevant to the industries in your area. • BioMass • Solar • Wind • Hydro/Water • Nuclear • Recycling Technology
Your Career as a Process Technician	1. Describe the roles, responsibilities, and expectations of the process technician: • Work environment (all weather, drug and alcohol free, team-structured, and constantly changing and 24 hours per day operations). • Employer expectations.

Topic Name	Objectives
Your Career as a Process Technician (cont.)	• Equipment and process operations, maintenance and control. • Physical requirements (lifting, pulling, climbing, etc.). • Following all procedures, safety systems, and rules for everyone's safety and the protection of the environment • Housekeeping/Auditing is 24/7 2. Describe the impact of shift work on: • Individual (Health and Safety) • Family relationships. 3. Describe changes and future trends in the role of the process technician. 4. List the factors responsible for future role changes of the process technician. 5. Describe the difference between organized and non-organized (union and non-union) operations.
Working as Teams	1. Describe the differences between work groups and teams. 2. Describe the different types of teams encountered in the process industries. 3. Identify the characteristics of a "High Performance" or an effective team. 4. Define the terms: • Synergy • Team Dynamics 5. Describe the steps or stages through which a team evolves (forming, storming, norming, and performing). 6. Identify factors that contribute to the failure of a team including: • Failure to achieve the defined outcome • Failure as a team to work together and achieve full synergy 7. Define workforce diversity and its impact on workplace relations: • In a team environment • Work group (co-worker)
Basic Physics	1. Define the application of physics in the process industries. 2. Define matter and the states in which it exists. 3. Use physical property characteristics to describe various states of matter (liquid, gas, and solids). 4. Define and provide examples of the following terms: • Mass • Density • Elasticity • Viscosity • Buoyancy • Specific Gravity • Flow • Evaporation • Pressure • Velocity

Topic Name	Objectives
Basic Physics (cont.)	• Friction • Temperature • British Thermal Unit • Calorie • Electricity 5. Describe the three (3) methods of BTU (British Thermal Unit) transfer: • Convection • Conduction • Radiation 6. Describe how Boyle's Law explains the relationship between pressure and volume of gases. 7. Describe how Charles' Law explains the relationship between temperature and volume of gases. 8. Describe how Dalton's Law explains the relationship between total and partial pressure of a gas. 9. Describe how the General Gas Law explains the relationship between temperature, pressure, and volume of gas. 10. Describe how Bernoulli's Law explains the flow of liquids and gasses. 11. Describe force and leverage and their application to the process industry. 12. Convert between scales using mass, flow and temperature which are commonly used in the process industry.
Basic Chemistry	1. Define the application of chemistry in the process industries. 2. Describe the relationship between molecules, atoms, protons, neutrons, and electrons. 3. Define the difference between organic and inorganic chemistry. 4. Explain the difference between chemical properties and physical properties. 5. Define and provide examples of the following terms: • Hydrocarbon • Boiling Point • Chemical Reaction • Oxidation/ Reduction • Acidic • Alkaline • Exothermic • Endothermic • Compounds • Mixtures • Solutions • Homogenous • Equilibrium • Catalyst 6. Describe the difference between an acid and a base (caustic).

Topic Name	Objectives
Basic Chemistry (cont.)	7. Describe the method of measurement for acids and bases. (What is pH?)**.**
Safety, Health, and the Environment	1. Discuss the safety, health, and environmental hazards found in the process industries. 2. Describe the intent and application of the primary regulations impacting the process industries: CFR (Code of Federal Regulations) • CFR 29 • OSHA 1910.119 – Process Safety Management (PSM) • OSHA 1910.132 – Personal Protective Equipment (PPE) • OSHA 1910.1200 – Hazard Communication (HAZCOM) • OSHA 1910.120 – Hazardous Waste Operations and Emergency Response (HAZWOPER) • DOT CFR 49.173.1 – Hazardous Materials – General Requirements for Shipments and Packaging • EPA CFR 260 - 270 – Resource Conservation and Recovery Act (RCRA) • 40 CFR 60-63 – Clean Air Act 3. Describe the role of the process technician in achieving successful compliance with regulations. 4. Describe the personal attitudes and behaviors that can help to prevent workplace accidents and incidents. 5. Describe the components of the fire triangle and the fire and fire tetrahedron. 6. Identify the consequences of non-compliance with regulations: • Legal • Moral and Ethical • Safety, Health, and Environmental • Economics 7. Explain the managerial and engineering controls used in the industry to minimize hazards and maximize worker and system protection in the workplace. 8. Describe (demonstrate, if possible) the correct use of personal protective equipment (PPE). 9. Describe the intent of the OSHA – Voluntary Protection Program (VPP). 10. Describe the application of the International Organization of Standards (ISO)-14000 as it relates to the process industries.
Principles of Quality	1. Identify responses in the process industries to quality issues. 2. Describe the role each of the following played in quality implementation: • W. E. Deming • Joseph Juran • Philip Crosby 3. Describe the four (4) components of Total Quality Management (TQM) and how it is applied in today's workplace.

Topic Name	Objectives
Principles of Quality (cont.)	4. Describe the application of the International Organization of Standards, ISO-9000, as it relates to the process industries. 5. Describe the use of Statistical Process Control (SPC) in the workplace. Describe the roles and responsibilities of the process technician in supporting quality improvement within the workplace.
Piping and Valves	1. Describe the purpose or function of piping and valves in the process industries. 2. Identify the different materials used to manufacture piping and valve components: • Carbon Steel • Stainless Steel • Iron • Plastic • Exotic Metals (alloys) 3. Identify the different types of piping and valve connecting methods: • Screwed • Flanged • Welded • Glued or bonded 4. Identify the different types of pipe fittings used in the industry and their application: • Coupling • Elbow • Tee • Cross • Union • Nipple • Bushing • Plug • Cap 5. Identify the different types of valves used in the industry and their application: • Ball • Butterfly • Check • Diaphragm • Gate • Globe • Plug • Relief/Safety 6. Discuss the hazards associated with the improper operation of a valve: • Personnel hazards

Topic Name	Objectives
Piping and Valves (cont.)	• Equipment hazards • Production Loss or Product Damage • Environmental Damage and Cost of Cleanup 7. Describe the monitoring and maintenance activities associated with piping and valves: **Look:** o Inspect for connection leaks o Inspect for wear from corrosion or erosion o Check for loose valve parts o Verify proper positioning of valves **Do:** o Grease and lubricate o Adjust packing o Labeling 8. Identify the symbols used to represent the different types of piping and valve components presented in this session.
Tanks, Drums, and Vessels	1. Describe the purpose or function of tanks, drums, and vessels in the process industries. 2. Explain the relationship of pressure to the vessel shape and wall thickness. 3. Describe the purpose of dikes, firewalls and containment walls around tanks, drums, and vessels. 4. Define and provide examples of the following terms as they relate to tanks, drums, and vessels: • Floating Roof • Sphere • Blanket • Vapor Recovery • Foam Chamber • Vortex Breaker • Sump (Possum Belly) • Baffle • Mixer • Weir • Gauge Hatch • Boot • Manway • Heat Tracing (steam or electrical) 5. Describe the monitoring and maintenance activities associated with tank farm operations: **Listen:** abnormal noise **Touch:** abnormal heat on vessels and piping **Look:** • Monitor levels • Check firewalls and sumps • Corrosion and Discoloration

Topic Name	Objectives
Tanks, Drums, and Vessels (cont.)	**Feel:** excessive vibration-pumps/mixers **Smell:** abnormal odors-leaks 6. Identify the symbols used to represent the different types of tanks, drums, and vessels presented in this session. 7. Identify and describe the various types of reactors and their purpose. 8. Identify possible impacts from the following: • Improper valve lineup • Loss of nitrogen flow • Cross contamination • Failure of vent system • Leaks/Spills • Chemical Reactions (such as corrosion, pH, etc.)
Pumps	1. Describe the purpose or function of pumps in the process industries. 2. Explain the difference between the two common types of pumps used in the process industries: • Centrifugal (horizontal and vertical) • Positive displacement (rotary and reciprocating) 3. Identify the primary parts of a typical centrifugal pump: 4. Describe the operations of a centrifugal pump. 5. Explain the difference between the rotary and reciprocating positive displacement pumps. 6. 6. Identify the primary parts of various positive displacement pumps: 7. Describe the operations of a positive displacement pump. 8. Discuss the hazards associated with the improper operation of both the positive displacement and centrifugal pump: • Personnel hazards • Equipment hazards • Production • Environment 9. Describe the monitoring and maintenance activities associated with pumps: **Listen:** abnormal noise **Inspect:** excessive heat and vibration (be aware of high temperatures) **Look:** Check oil levels **Look:** Check for Leaks at seals and flanges **Look:** Discharge Pressure 10. Identify the symbols used to represent the different types of pumps.
Compressors	1. Describe the purpose or function of compressors in the process industries. 2. Explain the difference between a pump and compressor in terms of what function each performs. 3. Explain the difference between the two (2) more common types of compressors used in the process industries: • Dynamic (centrifugal and axial) • Positive Displacement (rotary and reciprocating)

Topic Name	Objectives
Compressors (cont.)	4. Identify the primary parts of a typical centrifugal compressor: 5. Describe the operations of a centrifugal compressor. 6. Explain the difference between rotary and reciprocating positive displacement compressors. 7. Identify the primary parts of a positive displacement compressor. 8. Describe the operations of a positive displacement compressor. 9. Discuss the hazards associated with the improper operation of both the positive displacement and centrifugal compressor: • Personnel hazards • Equipment hazards • Production • Environment 10. Describe the monitoring and maintenance activities associated with compressors: **Look:** • Check oil levels, check for leaks at seals and flange • Check suction and discharge pressures **Listen:** Inspect for abnormal noise **Inspect:** Inspect for excessive heat and vibration (be aware of high temperatures) 11. Identify the symbols used to represent the different types of compressors presented in this session.
Steam Turbines	1. Describe the purpose or function of steam turbines in the process industries. 2. Identify the primary parts of a typical (non-condensing) steam turbine: • Casing • Shaft • Moving and fixed blades • Governor • Nozzle • Inlet (Suction) • Outlet (Discharge) • Trip and Throttle Valve 3. Describe how a steam turbine operates. 4. Discuss the hazards associated with the improper operation of a steam turbine: • Personnel hazards • Equipment hazards • Production • Environment 5. Describe the monitoring and maintenance activities associated with a steam turbine: • **Look:** o Check oil levels-lubrication o Check bearings

Topic Name	Objectives
Steam Turbines (cont.)	○ Check for leaks at seals and flanges ○ Check RPMs • **Listen:** for abnormal noise • **Inspect:** Check for excessive vibration (be aware of high temperatures) 6. Identify the symbols used to represent the steam turbine and associated equipment presented in this session.
Electricity and Motors	1. Explain the difference between AC and DC current. 2. Identify what current (AC, DC, 3-phase, single phase) is most commonly used in the Processing Industry. 3. Explain basic motor controllers 4. Describe the purpose or function of the electric motor in the process industries. 5. Identify the primary parts of a typical electric motor: 6. Discuss the hazards associated with the improper inspection and operation of an AC motor: • Personnel hazards • Equipment hazards • Production • Environment 7. Describe the monitoring and maintenance activities associated with an electric motor: • **Look:** ○ Check lubrication ○ Check for loose covers and shrouds • **Listen:** for abnormal noise • **Inspect:** ○ Check for excessive heat ○ Check for excessive vibration (be aware of high temperatures) 8. Identify the symbols used to represent electric motors and associated equipment presented in this session.
Heat Exchangers (Part 1) Shell and Tube	1. Describe the purpose or function of heat exchangers in the process industries. 2. Recall the three (3) methods of heat (BTU) transfer: • Convection • Conduction • Radiation 3. Identify the primary parts of a typical shell and tube exchanger. 4. Describe the operations of a typical shell and tube exchanger. 5. Describe the different applications of a typical shell and tube exchanger: • Reboiler (forced feed and thermo siphon) • Heater/preheater • After-cooler • Condenser

Topic Name	Objectives
Heat Exchangers (Part I) Shell and Tube (cont.)	• Chiller • Interchanger 6. Discuss the hazards associated with the improper operation of a heat exchanger: • Personnel hazards • Equipment hazards • Production • Environmental 7. Describe the monitoring and maintenance activities associated with a heat exchanger: • **Look:** o Check for external leaks – head, flanges, and bleeders o Check for internal tube leaks – sample results o Check inlet and outlet pressures o Check inlet and outlet temperatures • **Listen:** Inspect for abnormal noise • **Inspect:** Check for excessive vibration **(**be aware of high temperatures) 8. Identify the symbols used to represent the heat exchanger and associated equipment presented in this session.
Heat Exchangers (Part 2) Air Cooled Exchangers	1. Describe the purpose or function of an air cooled heat exchanger in the process industries. 2. Identify the primary parts and support systems of a typical air cooled exchanger. 3. Describe the operation of an air cooled exchanger 4. Describe the different applications or use of water from a cooling tower: • Process condensers • Lubricating system coolers (Rotating Equipment) 5. Discuss the hazards associated with the improper operation of an air cooled exchanger • Personnel hazards • Equipment hazards • Production • Environment 6. Describe the monitoring and maintenance activities associated with an air cooled exchanger: **Look:** Leaks **Listen:** Inspect for abnormal noise (fans and motors) **Inspect:** Check for excessive vibration (fans and motors) be aware of high temperatures Identify the symbols used to represent air cooled exchangers, and associated equipment.
Heat Exchangers (Part 3) Cooling Towers	1. Describe the purpose or function of a cooling tower in the process industries.

Topic Name	Objectives
Heat Exchangers (Part 3) Cooling Towers (cont.)	2. Identify the primary parts and support systems of a typical cooling tower. 3. Describe the operation of a Cooling Tower 4. Discuss the hazards associated with improper operation of a Cooling tower and the potential fire hazard when shutting one down. 5. Describe the monitoring and maintenance activities associated with a Cooling Tower: **Look:** Leaks **Listen**: for abnormal noise (fans and motors) be aware of high temperatures 6. Identify the symbols used with cooling towers and associated equipment presented in this session
Furnaces	1. Describe the purpose or function of a furnace in the process industries. 2. Describe the types of fuel used in a furnace • Natural gas • Fuel oil • Process oil • Process gas • Fuel gas 3. Identify the primary parts of a typical furnace. 4. Describe the different types of furnaces by draft: • Natural draft • Forced draft • Induced draft • Balanced draft 5. Describe the different furnace designs: • Cylindrical • Cabin • A-Frame 6. Describe the monitoring and maintenance activities associated with a furnace. **Look:** positive/negative pressure, flame inspection, hot spots **Listen:** abnormal noise (i.e., incomplete combustion **Inspect:** visible emissions, on-line analysis 7. Discuss the hazards associated with the improper operation of a furnace: • Personnel hazards • Equipment hazards • Protection (PPE) • Environment Identify the symbols used with furnaces and associated equipment presented in this session
Boilers	1. Describe the fundamental principles of boiler operation. 2. Describe the operation of boilers in different applications in the process industries. 3. Identify the primary parts and support systems of a typical fuel-fired boiler.

Topic Name	Objectives
Boilers (cont.)	4. Describe the types of fuel used in a boiler: • Natural gas • Fuel oil • Fuel gas • Process oil • Process gas 5. Describe the different types of boilers by draft: • Natural draft • Forced draft • Induced draft • Balanced draft 6. Describe the difference in fire tube and water tube boilers. 7. Describe the monitoring and maintenance activities associated with operating boilers: **Look:** Fire eye, boiler level, boiler pressure • **Listen:** abnormal noises **Check:** safety systems associated with a boiler **Inspect:** water level, water quality 8. Discuss the hazards associated with the improper operation of a boiler: • Personnel hazards • Equipment hazards • Production • Environment 9. Identify the symbols used with boilers and associated equipment presented in this session
Distillation	1. Describe the purpose or function of a distillation column or tower in the process industries. 2. Identify the primary parts and support systems of a typical tray-type distillation column: 3. Describe the distillation process. 4. Describe the use of packing as it pertains to distillation. 5. Discuss the hazards associated with the improper operation of a distillation column: • Personnel hazards • Equipment hazards • Production • Environment 6. Describe the monitoring and maintenance activities associated with distillation column operations: **Listen:** Inspect for abnormal noise (pumps and reboilers) **Look:** Check for leaks **Look:** Check samples for separation **Look:** Check temperature and pressure differentials **(**be aware of high temperatures)

Topic Name	Objectives
Distillation (cont.)	Identify the symbols used with distillation columns and associated equipment presented in this session.
Process Control Instrumentation	1. Describe the purpose or function of process control instrumentation in the process industries. 2. Describe the difference between process control indicators and control loop inputs. 3. Describe the major types of process control instrumentation: • Electronic • Pneumatic • Digital • Analog 4. Define a generic control loop and provide an example. 5. Identify four key variables which are controlled by process control instrumentation: • Temperature • Pressure • Level • Flow 6. Identify typical process control instruments, their applications and functions. 7. Describe distributive control systems and how they are applied in the process industries. 8. Discuss the hazards associated with process control instruments (i.e., positioners, fail open/fail closed, leaks). **Look:** Valve position **Listen:** Leaks on pneumatic air systems **Check:** valve stroke 9. Describe the monitoring and maintenance activities associated with process control instrumentation. Identify symbols used to represent process control instruments.
Process Utilities	1. Discuss the different types of process utilities and their applications: • Water Systems (Boiler feed water, Drinking water, Cooling water, Fire water, Service water, Process water, Potable water, Condensate) • Steam • Electrical • Air Systems (Plant, instrument air, breathing) • • Sour water • Gas Systems (Fuel Gas, Natural gas, nitrogen, etc.) • CO2 (carbon monoxide) 2. Describe the different types of equipment associated with each of the utility systems found in the process industries. Identify symbols used to represent process utilities.
Process Auxiliaries	1. Describe the purpose or function of the different process auxiliary systems and their applications. 2. Discuss the different types of waste water systems and their applications in process:

Topic Name	Objectives
Process Auxiliaries (cont.)	• Treated water • Waste water (Sewer, Storm, Oily) 3. Discuss the equipment associated with flare systems found in the process industries. 4. Discuss the parts associated with refrigeration systems found in the process industries. 5. Discuss the parts associated with lubrication systems found in the process industries. 6. Discuss the parts associated with hot oil systems found in the process industries. Identify symbols used to represent process auxiliary systems.
Process Print Reading	1. Describe the purpose or function of process systems drawings. 2. Identify the common components and information within process systems drawings. 3. Identify the different drawing types and their uses: • Block Flow Diagrams • Process Flow Diagrams (PFD) • Piping and Instrument Diagrams (P&ID) • Plan drawing • Engineering Flow Drawing (EFD) • Electrical Drawings**:** −Mechanical - Wiring Diagrams −Schematics • Isometrics Identify the different components and their symbols in each of the drawings listed above.
Process Facility Tour (optional)	Establish the relationship between content in the course and actual equipment in a process by conducting a facility tour. Consider the following: 1. Transportation 2. Access to the facility/safety orientation 3. Tour Guide 4. Proper clothing (PPE) *Suggested alternatives to touring process facility: • College physical plant Public/municipal utilities

III. STUDENT LEARNING OUTCOMES

OUTCOME	METHOD OF ASSESSMENT
Soft skills. This should include knowledge of what the job of process operator includes, teamwork, quality, safety, and the history of the process industry.	Individual Assignments Closed book Exams Final Exam
The vocabulary of the process industry. This should include common terms for both activities and for pieces of equipment and equipment operation.	Individual Assignments Closed book Exams Final Exam
Equipment such as valves, heat exchangers pumps, compressors, etc. This knowledge should include operation and the names of the equipment and the parts of the equipment.	Individual Assignments Closed book Exams Final Exam
Safety is an issue of primary concern to the chemical industry. Doing the job safely is one of the objectives in the Introduction to Process Technology course.	Individual Assignments Closed book Exams Final Exam
Process operations such as distillation, utilities and other "auxiliary" equipment, basic reactor flows, furnace and boiler operation and process control. Process control should include the basic symbols used in process control.	Individual Assignments Closed book Exams Final Exam
Beginning analytical thinking-- trouble shooting of simple operations problems.	Individual Assignments Closed book Exams Final Exam

IV. TEXTBOOK OR COURSE MATERIAL INFORMATION

A. Textbook

1. Introduction to Process Technology. CAPT, Inc., 2nd Ed., Pearson Publisher 2018 ISBN: 978-0-13-480824-6 (required)
2. Hard-hat
3. Side-sheild safety glasses

Required course materials are available at the Brazosport College bookstore, on campus or online at http://brazosport.edu/bookstore/home.html. A student of this institution is not under any obligation to purchase a textbook from the college bookstore. The same textbook is/may also be available from an independent retailer, including an online retailer.

For Distance Education Courses include the following: Contact the Brazosport College Bookstore with a credit card for course materials. Phone: 979-230-3651. Fax: 979-230-3653. Email:bookstore@brazosport.edu. Website: http://brazosport.edu/bookstore/home.html.

Introduction to Process Technology is the first process technology course that a student will take in the degree program for an Associate of Applied Science Degree in Chemical Technology – Process Operations Option. This curriculum is designed as a 2-year (full time) program to train students for careers as Process Technicians in the chemical and refining process industries. This course is the foundation course for the program.

Introduction to Process Technology provides a general overview of the process industry, the roles and responsibilities of Process Technicians, types of equipment and processes handled on the job, and the general knowledge, skills, and attitudes needed to succeed as a Process Technician.

B. Course Outline: See the course schedule for information on what is covered and when assessments occur according to course-specific dates. GC

Important Semester Dates:
Last Day to Withdraw from Classes– Check BC Academic Calendar at
http://catalog.brazosport.edu/index.php

Office Hours: Located on the first page of this syllabus. GC

C. Virtual Campus/D2L:

Knowing how to use Virtual Campus is an absolute must to succeed in this course. Locations of technical support information on the Virtual Campus are on the school website, the Virtual Campus login page, on the My Home page, and Course Home areas of each online course. These areas contain links to:

- technical support
- manuals & videos
- orientation to online courses
- distance learning website

Here is one of several links you can use to review and learn how to use Virtual Campus:
http://brazosport.edu/DL

D. Check "Contents" in D2L to keep up with weekly assignments starting your first week. Check D2L for up-to-date due dates/deadlines.

- **Deadlines are not flexible. Only negotiable due to emergencies/event out of your control, and with written excuse from employer, doctor, etc.**
- Students must use D2L to keep up with announcements, assignments, etc.
- Recommendation is for students to forward their D2L email to whatever email account is checked regularly. This way, important communication is not missed.
- Several elements of D2L may be used including Dropbox, Discussions, Contents, Quizzes and more.
- The assignments and quizzes will appear in "Contents," a key area for students to check.

E. **Homework** is due according to the course schedule. The link to complete homework is found in "Content" (see top menu bar) in the associated folder. GC

Homework will be accomplished through reading chapters, completing chapter quizzes, and practicing with equipment animations. Other homework assignments may be scheduled as needed. If students complete a specific quiz by the due date, then they will have unlimited tries at completing the quiz, and all attempt scores for that quiz will be averaged into one grade. GC

F. **Major Exams** are completed during class. See the course schedule for dates and location. GC

Makeup exams must be approved by the instructor ahead of time and will be decided based on individual need. All makeup exams will be completed at Learning Services on campus (E.130). The student will be expected to contact Learning Services at (979) 230-3253 to set up an appointment for testing. GC

J. **Communications with Instructor**

- Please send any emails to the instructor through D2L or brazosport email.
- Recommendation is for students to forward their D2L email to an email account that is check regularly. Instructions for this are on D2L along with other useful resource.
- Students should consider using the D2L notifications feature for reminding of upcoming assignments and other available topics.

V. STUDENTS WITH DISABILITIES

Brazosport College is committed to providing equal education opportunities to every student. BC offers services for individuals with special needs and capabilities including counseling, tutoring, equipment, and software to assist students with special needs. For student to receive any accommodation, documentation must be completed in the Office of Disability Services. Please contact Phil Robertson, Special Populations Counselor at 979-230-3236 for further information.

VI. TITLE IX STATEMENT

Brazosport College faculty and staff are committed to supporting students and upholding the College District's non-discrimination policy. Under Title IX and Brazosport College's policy FFDA (Local), discrimination based on sex, gender, sexual orientation, gender identity, and gender expression is prohibited. If you experience an incident of discrimination, we encourage you to report it. While you may talk to a faculty or staff member at BC, please understand that they are "Responsible Employees" and must report what you tell them to college officials. You can also contact the Title IX Coordinators directly by using the contact information below. Additional information is found on the Sexual Misconduct webpage at www.brazosport.edu/sexualmisconduct.

Alex Crouse, Director of Student Life and Title IX Coordinator
979-230-3355; alex.crouse@brazosport.edu

Mareille Rolon, HR Coordinator and Deputy Title IX Coordinator
979-230-3303; mareille.rolon@brazosport.edu

VII. ACADEMIC HONESTY

Brazosport College assumes that students eligible to perform on the college level are familiar with the ordinary rules governing proper conduct including academic honesty. The principle of academic honesty is that all work presented by you is yours alone. Academic dishonesty including, but not limited to, cheating, plagiarism, and collusion shall be treated appropriately.

Academic dishonesty violates both the policies of this course and the Student Code of Conduct. In this class, any occurrence of academic dishonesty will be referred to the Dean of Student Services for prompt adjudication, and may, at a minimum, result in F, in this course. Sanctions may be imposed beyond your grade in this course by the Dean of Student Services. Please refer to the Brazosport College Student Guide for more information. This is available online at http://brazosport.edu/students/for-students/student-services/.

VIII. ATTENDANCE AND WITHDRAWAL POLICIES

Class attendance contributes to your final grade, but you must attend class to successfully complete the course. If you are unable to complete this course, you must complete and submit a withdrawal form with the registrar. If the student decides to drop out of the class, it is the responsibility of the student to initiate a withdrawal before the withdrawal deadline in order to get a "W" on their transcript. If this is not done the student will receive a grade based on test grades and class grades earned during their attendance and absence (i.e., zeros on all missed materials, exams, skills tests, and final exam).

IX. COURSE REQUIREMENTS AND GRADING POLICY TESTING MAKE-UP POLICY

A. Grading Policy:

Homework	25%
Exams	25%
Process Technician Profile	25%
Final Exam	25%

Grades are assigned as follows:

Grade	Final Average
A	90-100
B	80-89
C	70-79
D	60-69
F	Below 60

X. STUDENT CONDUCT STATEMENT

Students are expected to be aware of and follow the Brazosport College Student Code of Conduct. Students have violated the Code if they "fail to comply with any lawful directions, verbal or written, of any official at BC." Lawful directions include precautions and requirements taken to prevent the spread of COVID-19 at Brazosport College. Students who do not follow safety requirements, including the wearing of a mask, may be removed from class by their instructor and referred to the Dean of Student Services.

XI. CAMPUS CLOSURE STATEMENT

Brazosport College is committed to the health and safety of all students, staff, and faculty and adheres to all federal and state guidelines. The College intends to stay open for the duration of the semester and provide access to classes and support services on campus in the safest way possible. The College will also comply with lawful orders given by applicable authorities, including the Governor of Texas, up to and including campus closure. It is possible that on campus activities may be moved online and/or postpone if such orders are given.

XII. STUDENT RESPONSIBILITIES

Students are expected to fully participate in this course. The following criteria are intended to assist you in being successful in this course:

1. Understand the syllabus requirements
2. Use appropriate time management skills
3. Communicate with the instructor
4. Complete course work on time, and
5. Utilize online components (such as Desire2Learn) as required.

XV. OTHER STUDENT SERVICES INFORMATION

Information about the Library is available at http://brazosport.edu/students/for-students/places-services/library/about-the-library or by calling 979-230-3310.

For assistance with online courses, an open computer lab, online and make-up testing, audio/visual services, and study skills, visit Learning Services next to the Library, call 979-230-3253, or visit http://brazosport.edu/students/for-students/places-services/learning-services/.

For drop-in math tutoring, the writing center, supplemental instruction and other tutoring including e-tutoring, visit the Student Success Center, call 979-230-3527, or visit http://brazosport.edu/students/for-students/student-success-center/math-center/.

To contact the Physical Sciences and Process Technology Department call 979-230-3618.

The Student Services provides assistance in the following:

Counseling and Advising	979-230-3040
Financial Aid	979-230-3294
Student Life	979-230-3355

To reach the Information Technology Department for computer, email, or other technical assistance call the Helpdesk at 979-230-3266.

Get the information you need – when you need it. Click http://geni.us/BRAZO to install **BC Connect** on your mobile device to receive reminders, explore careers, map your educational plan, be in the know about events, find out about scholarships, achieve your goals and much more.

****Submit acknowledgement of having read this syllabus per instructions. This is a grade.**

Read and Sign Syllabus and submit to the instructor for grade

PTAC-1302: I have read this syllabus and understand the course content and expectations of my instructor for this class.

Print (Type) Name:

Date: