Brazosport College

Syllabus for PTAC 1302 – Introduction to Process Technology

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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. (3 SCH, 3 lecture, 0 lab)

Chad Abney	Ron Colwell
Gregg Curry	Mark Farrar
David Hendrix	Mark Stoltenberg
Gary Hicks	Jeff Detrick

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A. Prerequisite*:* N/A
Required skill level: College-level reading and writing.
Beginning algebra level math (placement code 2).

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. • Equipment and process operations, maintenance and control.

Topic Name	Objectives
Your Career as a Process Technician (cont.)	• 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 • Friction

Topic Name	Objectives
Basic Physics (cont.)	• 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	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

Topic Name	Objectives
Principles of Quality (cont.)	3. Describe the four (4) components of Total Quality Management (TQM) and how it is applied in today's workplace. 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 there application: • Ball • Butterfly • Check • Diaphragm • Gate • Globe • Plug • Relief/Safety

Topic Name	Objectives
Piping and Valves (cont.)	6. Discuss the hazards associated with the improper operation of a valve: • Personnel hazards • 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)

Topic Name	Objectives
Tanks, Drums, and Vessels (cont.)	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 **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

Topic Name	Objectives
Pumps (cont.)	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) 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.

Topic Name	Objectives
Steam Turbines (cont.)	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 o Check for leaks at seals and flanges o 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:** o Check lubrication o Check for loose covers and shrouds • **Listen:** for abnormal noise • **Inspect:** o Check for excessive heat o 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.

Topic Name	Objectives
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 • 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)

Topic Name	Objectives
Heat Exchangers (Part 2) Air Cooled Exchangers (cont.)	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. 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

Topic Name	Objectives
Furnaces (cont.)	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. 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

Topic Name	Objectives
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) 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

Topic Name	Objectives
Process Control Instrumentation (cont.)	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: • 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.

Topic Name	Objectives
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., Pearson Publisher 2010, ISBN: 978-0-13-700414-0
2. Safety Glasses (not required for online course)

Required course materials are available at the Brazosport College bookstore, on campus or online at http://www.brazosport.edu/bookstore. 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://www.brazosport.edu/bookstore

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

This is a sample outline which may vary with individual instructors. It will also vary based on whether the course is a summer course or a fall/spring course. Students should contact their instructor for the outline of the course they are taking.

WEEK	Assignment Due Date every Sunday 11:59pm	TOPIC- Chapter Homework (CYK), Chapter Quizzes and Major Exams
1.	6/11/17	Syllabus quiz and acknowledge page Chp 1 Process Technology Overview Chp 2 Oil and Gas Industry Overview Chp 3 Chemical Industry Overview
2.	6/18/17	Chp 4 Mining Industry Overview Chp 5 Power Generation Industry Overview Chp 6 Pulp and Paper Industry Overview
3.	6/25/17	Chp 7 Water and Wastewater Treatment Industry Overview Chp 8 Food and Beverage Industry Overview Chp 9 Pharmaceutical Industry Overview *Exam 1 – Chps 1-9

4.	7/2/17	Chp 10 Basic Physics Chp 11 Basic Chemistry Chp 12 Safety, Health, Environment, and Security
5.	7/9/17	Chp 13 Quality Chp 14 Teams Chp 15 Process Drawings *Exam 2 – Chps 10-15
6.	7/16/17	Chp 16 Piping and Valves Chp 17 Vessels Chp 18 Pumps
7.	7/23/17	Chp 19 Compressors Chp 20 Turbines Chp 21 Electricity and Motors *Exam 3- chps 16-21
8.	7/30/17	Chp 22 Heat Exchangers Chp 23 Cooling Towers Chp 24 Furnaces
9.	8/6/17	Chp 25 Boilers *Exam 4 – Chps 22-25 Chp 26 Distillation Chp 27 Process Utilities
10.	8/13/17	Chp 28 Process Auxiliaries Chp 29 Instrumentation *Exam 5 – Chps 26-29
11.	Aug 14-17	Final Exam – this is required to be proctored at Learning Services on campus and you will be responsible for scheduling your appointment with them. Spots are limited and are first come, first serve

Important Semester Dates:
Last day to Withdraw from Classes – Check BC Academic Calendar

C. Virtual Campus/D2L: (for Online and Hybrid courses only)

Knowing how to use Virtual Campus is an absolute must to succeed in this course. Location of technical support information on the Virtual Campus is 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://www.brazosport.edu/distancelearning/Pages/Virtual-Campus-Support.aspx
In addition, the Distance Learning department conducts webinars and on campus training for using D2L, but you must sign-up ahead of time. Here is a link to sign-up, but call them if there is a problem with the link: https://form.jotform.com/mcconnel/rsvpvirtualtour

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. Lack of user knowledge resulting in technical difficulties is not an allowable excuse. Make sure and ensure you know how to upload assignments and do quizzes during the week when the HELP DESK is available.**

- Students must use D2L to keep up with announcements, assignments, etc.

- I'd highly recommend forwarding your D2L email to whatever email account you check regularly. This way, you won't miss communications from me in a timely manner.

- Several elements of D2L may be used including Dropbox, Discussions, Contents, Quizzes and more.

- The assignments and quizzes should all appear in "Contents". Contents are a key area for you to check.

D. Weekly Homework is due every Sunday night by 11:59 pm. The link to submit homework can be found in "Content" (see top menu bar) and the associated week folder. Submit this in Dropbox in a Word document (created and saved on your PC or flashdrive) with title as Week 1 HW.doc (Note: include **all** chapters for that week's assignment in **one** document. Please type questions and answers and make sure numbering matches textbook and a separate line for each question answer). NOTE: for summer session only answers are required (typing question not required) Make sure your document is submitted properly into dropbox. No excuses will be accepted because you later find out the homework did not get submitted. Also, your homework must be your OWN work. Sharing homework answers is considered "cheating" and in violation of the academic honesty policy. Violators will be reported and at risk of failing the course.

- See the HW format example document at top of "Content" section for a guideline to format your HW. Points will be deducted if homework not submitted in ONE weekly document. Points also deducted for not typing questions AND answers and for any missed answers. (does not apply to summer semester) Homework will be graded within 5 days of submission. I provide feedback on your assignments on what was incorrect or why points deducted. Make sure and read feedback! Assignments are typically graded for accuracy, but not always.

E. Weekly Chapter Quizzes are also due weekly per schedule and can be accessed by Content tab or Assessment/Quizzes (see top menu bar in D2L). You can take these ahead of time if desired. Each quiz can be taken only once and is timed. They are due every week on Sunday no later than 11:59 p.m. Quizzes are automatically graded in D2L. You can review scores upon submission or in Assessment/Grades section of D2L. Quizzes are mostly taken from the homework assigned weekly. Note: Make sure you get confirmation that your quiz was submitted properly. No excuses will be accepted because you later find out the quiz did not get saved and submitted.

F. Major Exams are assigned per schedule in Contents and have a start and end date allowed. These can only be taken using Respondus Browser. You must download this software onto your home computer so I would advise doing this right away in case you need to get the Help Desk involved. I have provided a practice Respondus exam to ensure you get the system working before the first major exam is due.

The other option is to take the exam at Learning Services on campus (these must be scheduled and I must be notified AHEAD of time). For information on Respondus, try this link: http://www.brazosport.edu/BConline/Pages/RespondusLDB.aspx Exams are automatically graded in D2L. You can review scores upon submission or in Assessment/Grades section of D2L. Note: Make sure you get confirmation that your exam was submitted properly.

G. Final Exam is required to be proctored by Learning Services. The exam schedule will be in D2L and it will be your responsibility to call Learning Services asap in order to secure an appointment. Their appointment spots are limited, so you will need to not delay in scheduling. You will be allowed to take in your textbook.

H. Misc.: The schedule will vary from semester to semester. In summer sessions the schedule will be adjusted to have more contact hours per week to accommodate the shorter semester.

I. Communications with Instructor

- Please send any emails to me through D2L or at edie.myer@brazosport.edu The Brazosport policy is for students nor faculty to communicate via personal email or texting unless urgent/emergency.
- Make sure and identify which course and section you are in because I instruct more than one course/section and need this information to locate your information online.
- I would highly recommend forwarding your D2L emails to an email account that you check regularly. Instructions for this are on D2L along with other useful resources.
- *But please note that you cannot reply to these forwarded emails from your personal email. You will have to log in to D2L to reply using the D2L email.*
- I would also recommend using the D2L notifications feature to remind you of upcoming assignments and other available topics.

V. STUDENTS WITH DISABILITIES

Brazosport College is committed to providing equal education opportunities to every student. Brazosport College offers services for individuals with special needs and capabilities including counseling, tutoring, equipment, and software to assist students with special needs. Please contact the Special Populations Counselor, 979.230.3236, for further information.

VI. 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. Please refer to the Brazosport College Student Guide for more information. This is available online at http://www.brazosport.edu. Click on the CATALOGS AND SCHEDULES link under STUDENTS.

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. Sanctions may be imposed beyond your grade in this course by the Dean of Student Services.

VII. 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).

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

Grade and Grade Points

The grading system used at Brazosport College and the grade points assigned are as follows:

Grade	Description	Grade Points per Semester Hour
A	Excellent	4
B	Good	3
C	Average	2
D	Passing (local)	1
F	Failing	0

I Incomplete
W Withdrew
AU Audit
P Pass
CR Credit
NC No Credit
Grades of I, W, AU, P, CR, and NC do not affect grade point averages

Grade point averages can be calculated by dividing the total number of grade points by the total number of semester hours attempted.

A. Grading Policy:

The components for the final course grade are weighted per below:

Major Exams	30%	5 multi-chapter exams
Chapter Quizzes	30%	30 quizzes (syllabus quiz and 1 per chapter)
Homework	25%	From end of chapter (Checking Your Knowledge section) and additional assignments per D2L
Final Exam	15%	Must be proctored and taken at Learning Services
Total	100%	

Grades are assigned as follows:

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

IX. 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.

X. OTHER STUDENT SERVICES INFORMATION

Information about the Library is available at http://www.brazosport.edu/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://www.brazosport.edu/learningservices.

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://www.brazosport.edu/studentsuccesscenter.

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 in D2L Week 1 Dropbox 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:

Note: Submit this page only as a Word document and place in dropbox for homework grade