

Brazosport College

Syllabus for CTEC1401 - Applied Petrochemical Technology (Technical Physics)

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I. COURSE DESCRIPTION

CTEC1401 - Applied Petrochemical Technology (Technical Physics). CIP 4103010003
Instruction in the basic principles of physics and their application to process facilities. Topics include units of measurement; gas laws; thermodynamics; temperature; pressure; and the properties of solids; liquids; and gases and how these properties relate to the operation of process equipment. **Credit Hours:** 4 (3 lecture, 2 lab)

Kenan Caymaz

Gary Hicks

Jeff Detrick

August 2021

A. Required skill level: College-level reading, writing and math.

II. COURSE OBJECTIVES

The main objective of this physics course is to provide students with a clear and logical presentation of some of the basic principles of physics as they relate to the field of process technology. Emphasis is placed on sound physical arguments and discussions of everyday experiences. At the same time, an attempt is made to motivate the student through practical examples that demonstrate the role of physics in other disciplines.

III. STUDENT LEARNING OUTCOMES

OUTCOME	METHOD OF ASSESSMENT
Apply Newton's laws of motion to mechanical systems.	The average of homework sets for chapters 2, 3, 4, 5, and Test 1 must be greater than or equal to 70%.
Apply the laws of conservation of energy and conservation of momentum to interacting systems.	The average of homework sets for chapters 6, 7, 8, and Test 2 must be greater than or equal to 70%.
Understand the basic properties of matter (solid, liquid, gas) such as pressure, density, elasticity, buoyancy, and others.	The average of homework sets for chapters 11, 12, 13, 14 and Test 3 must be greater than or equal to 70%.
Understand the mechanisms of heat transfer (conduction, convection, radiation). Apply the first and second laws of thermodynamics to interacting systems.	The average of homework sets for chapters 15, 16, 17, 18 and Test 4 must be greater than or equal to 70%.
Understand the definitions of electric voltage and current and apply Ohm's Law to basic electric circuits (series and parallel). Understand the significance of AC electricity, particularly the application of electromagnetic induction.	The average of homework sets for chapters 22, 23, 24, 25 and Test 5 must be greater than or equal to 70%.

IV. TEXTBOOK OR COURSE MATERIAL INFORMATION

A. Textbook

1. Conceptual Physics, Paul G. Hewitt, Pearson/Addison-Wesley Publisher, 12th Edition, 2015. ISBN: 978-0-321-909107 (required)
2. Calculator (required)

Required course materials are available at the Brazosport College bookstore, on campus or online at <http://brazosport.edu/bookstore/home.html>. Students are 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>.

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.

Tentative Schedule for Fall 2019

Aug. 26	Chapter 2 & 3
Sep. 02	Holiday (Labor Day)
09	Chapter 3 & 4
16	Chapter 4 & 5
23	Test 1, Chapter 6
30	Chapter 7
Oct. 07	Chapter 8
14	Test 2, Chapter 11
21	Chapter 12 & 13
28	Chapter 13 & 14
Nov. 04	Test 3, Chapter 15
11	Chapter 16 & 17
18	Test 4, Chapter 22
25	Chapter 23
Dec. 02	Chapter 24 & 25
09	Final Exam (Test 5)

Important Semester Dates:

Last Day to Withdraw from Classes– Check BC Academic Calendar - <http://catalog.brazosport.edu/index.php>

V. LAB REQUIREMENTS

Students must make at least a “D” in the laboratory portion of this course in order to pass the course.

VI. 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.

VII. 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

VIII. 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.

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/>

IX. ATTENDANCE AND WITHDRAWAL

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's office. 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).

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

Your grade will be determined by your work on tests, laboratory exercises, and homework. Partial credit may be given for work done. The average of your test grades will count 50% of the course grade. Homework will count 30% of the grade, and laboratory performance will complete the grade (20%). (These percentages can vary for different instructors.)

Your course grade is determined according to the following scale:

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

A. Testing

Tests occur at the end of groups of chapters, and the test's problems are similar to problems students have worked for homework and/or classroom discussions of topics.

B. Assignments

Homework will be assigned for each chapter. Since the course progresses through the semester according to a schedule, it is important that students complete the homework on time. Consequently, late homework is not accepted. Each homework assignment has a due date. It is due at the beginning of class on that date. (A chapter's homework is due the day we start the next chapter, or, if a test occurs before the next chapter, then the homework is due on the day of the test.) These specific requirements may vary by instructor.

C. Make-Up Policy

Absences happen... work situations, family situations, or personal situations arise which cause you to be absent from class. I understand this. If you are absent, do not wait until the next class meeting to contact me and/or to turn in your homework. I do not accept one-week-old late homework. Email me a copy of your homework or leave it at my office. Call me (or a classmate), or email me, to obtain the missed chapter's homework assignment, which will be due at the start of the next class meeting. I do not give makeup homework. If your absence occurs during a test, contact me and we will schedule a time you can take the test in the Learning Services Department. Scheduling a makeup test is not an automatic process. Makeup test must be completed within one week of the absence.

XI. 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.

XII. COVID-19 STATEMENT

At Brazosport College, all of us, including faculty, staff and students, share a common goal this fall semester, to keep our classes running in the safest manner possible and avoid any disruption

to your progress in achieving your educational and career goals. To that end, we ask and encourage you to conduct yourself in the following manner while on campus this semester:

- Every day, perform a self-health check prior to coming to campus and stay home if sick.
- To the greatest extent possible, maintain your distance between you and other students, faculty, and staff while on campus.
- Wear a properly fitted face covering over your mouth and nose while indoors on campus. If you do not have a mask, they will be available to you in all classrooms this fall.
- Practice good hygiene, washing your hands regularly and/or using hand sanitizer.
- The most effective way to protect yourself from Covid-19 is through vaccination. The vaccine is readily available and at no cost to you. Vaccine information and availability can be found at <https://brazosport.edu/coronavirus/vaccine/>.

If at any time this semester you begin to experience Covid symptoms, or if you are exposed to someone who has tested positive for Covid-19, please take the following steps:

- Stay home if you're feeling sick and minimize your contact with others.
- Alert the College by completing the Covid-19 Exposure Report Form online at <https://brazosport.edu/coronavirus/report/>. Be sure to provide accurate contact information, including a working phone number that you will answer.
- After submitting the report, you will be promptly contacted by a member of our Rapid Response Team, who will ask you some specific questions about your situation and provide you with guidance moving forward.
- If it is determined that you should not come to class, your instructor will be notified. **Please know that your instructor will consider course adjustments and potential make-up work only if your case has been reported to Brazosport College, and they've been notified by our response team.** Your instructor will work with you to determine how to manage any make-up work.

The Community Health Network (CHN) Clinic at Brazosport College (located in BC Central B-Wing) is scheduled to be open from 8 AM to 6 PM Tuesday through Thursday during the Fall 2021 semester. While walk-ins are available, your visit will be easier if you pre-register by creating an account at www.mychn.org. In addition to providing health and behavioral services, CHN also provides COVID vaccinations and testing. All insurance is accepted, and healthcare is provided on a sliding scale including no cost for those who need it.

Throughout the semester, please regularly check the College's Covid-19 information page at <https://brazosport.edu/coronavirus/>, where the latest updates and guidelines will be posted. As members of the BC community, all of us share a responsibility to each other to be as safe as possible.

XIII. 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.

XIV. 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
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/>.

To contact the Physical Sciences and Process Technologies 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.