Course Syllabus

CHE 180 4182-4522 (4740):
General College Chemistry Summer 2019 Online

Instructor Contact Information

Instructor Name/Title: Ramon E. Cuellar
Office Hours: By Appointment
Office Location: Online
Phone Number: 423-300-2756
Email Address: ramon.cuellar@kctcs.edu

Course Information

Course Description
Continues CHE 170. Focuses on major chemical topics, including acid-base chemistry, kinetics, thermodynamics, and chemical equilibrium. Emphasizes solving of mathematical problems which illustrate the principles of chemistry. Designed for students in the sciences, engineering, and pre-professional programs.

Prerequisites
(CHE 170 with a grade of “C” or better) and (College Algebra with “C” or better).

Start Date: 7-1-19
Midterm/Last Date to Withdraw Without Instructor Permission: 7-15-19
Last Date to Withdraw with Instructor Approval: 7-26-19

Textbook Information and Supplies
NOTE: The above book is included in the cost of the course. There is nothing separate you need to purchase.

Course Competencies/Student Learning Outcomes

1. Demonstrate an understanding of general chemistry, including stoichiometry, atomic structure, properties of matter and the relationship between molecular structure and chemical behavior.
2. Evaluate and interpret numerical, chemical, and general scientific information.
3. Apply information from other areas of study (such as mathematics and physics) to facilitate their understanding and manipulation of fundamental chemical theories.
4. Analyze and solve chemical problems.
5. Relate chemical concepts to daily life.

General Education Course Competencies/Student Learning Outcomes

Natural Sciences (NS)

1. Demonstrate an understanding of the methods of science inquiry.
2. Explain basic concepts and principles in one or more of the sciences.
3. Apply scientific principles to interpret and make predictions in one or more of the sciences.
4. Explain how scientific principles relate to issues of personal and/or public importance.

Course Structure, Evaluation, and Grading Methods
This course is arranged in four units. Each unit consists of 2-3 chapters. Each chapter has two assignments, a LearnSmart Lesson, and a study guide. Additional materials may also be available for units to help you with the materials but they are not assigned. Once a unit is completed, there will be a unit exam. After all four units are complete, there will be a comprehensive final.

Grading Policy/Scale
LearnSmart Lesson: This will guide you through the reading of the chapter and ask your questions to reinforce what you have learned.

Chapter Study Guide: This will present you with material that you are expected to know for the unit and final exams. Guided Solutions are available for most problems, and this assignment may be repeated as many times as you like.

Unit Exam: This is a timed (120 min), two attempt exam with 40 questions covering the 2-3 chapters within the unit.

Final Exam: This is a timed (120 min), single attempt exam with 40 questions covering the four units.

There is no Extra Credit in this course.

A Midterm Grade is given to you as an indicator of your progress for the material due at the midterm. This grade should not be taken to be equivalent to your final grade as you still have 50% or more of the assignments left to complete before the term is finished.

All assignments are due by the end of Day on their specified due date.

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<thead>
<tr>
<th>Grading Summary</th>
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<tbody>
<tr>
<td><strong>UNIT 1</strong></td>
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<tr>
<td>Assignment</td>
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<tr>
<td>Chapter 12 LearnSmart</td>
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<td>Chapter 13 LearnSmart</td>
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<td>Chapter 14 LearnSmart</td>
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<td>Unit 1 Exam</td>
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<td><strong>Unit 2</strong></td>
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<td>Chapter 15 LearnSmart</td>
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<td>Chapter 16 LearnSmart</td>
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<td>Chapter 17 LearnSmart</td>
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<td>Unit 2 Exam</td>
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## Grading Summary

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<thead>
<tr>
<th>UNIT 1</th>
<th>Assignment</th>
<th>Points</th>
<th>Due Date</th>
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<tbody>
<tr>
<td></td>
<td>Unit 3</td>
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<td>Chapter 18 LearnSmart</td>
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<td>Chapter 19 LearnSmart</td>
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<td>Chapter 20 LearnSmart</td>
<td>100</td>
<td>7/20</td>
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<tr>
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<td>Unit 3 Exam</td>
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<td>Unit 4</td>
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<td>Chapter 21 LearnSmart</td>
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<td>7/27</td>
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<td>Chapter 22 LearnSmart</td>
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<td>Unit 4 Exam</td>
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<td>7/27</td>
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<td>Final Exam</td>
<td>900</td>
<td>7/29</td>
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**LearnSmart assignments are Multiple Choice.**

**Exams have mixed question types. 5/4 is the last day to submit assignments.**

### GRADING SCALE:

- 90% - 100% = A
- 80% - 89% = B
- 70% - 79% = C
- 60% - 69% = D
- Below 60% = E

### Approved Course Outline:

I. Chemical Kinetics
   - A. Collision and transition state theories
   - B. Factors that influence reaction rates
   - C. Reaction order
   - D. Reaction mechanisms

II. Chemical Equilibria
   - A. Dynamic equilibria
     - B. Reversible reactions
     - C. Definition of equilibrium constants
     - D. Calculations of equilibrium concentrations
     - E. LeChatelier's principle
   - F. Gas phase equilibria
   - G. Heterogeneous equilibria
   - H. Acid-base equilibria
   - I. Solubility equilibria
   - J. Complex ion equilibria

Will open on this day only (8 am to 11:59 pm)
III. Chemical Reactions: Acid-Base and Redox
   A. Acid-base definitions and reactions
   B. Titrations and titration curves
   C. Oxidation numbers
   D. Balancing redox reactions

IV. Chemical Thermodynamics
   A. Enthalpy changes and spontaneity
   B. Entropy and spontaneity
   C. Laws of thermodynamics
   D. Gibbs free energy
   E. Standard free energy
   F. Free energy and equilibrium

V. Solutions
   A. Definitions
   B. Concentration and stoichiometry
   C. Colligative properties

VI. Electrochemistry
   A. Electrolytic cells and Faraday's law
   B. Voltaic cells and the Nernst equation

VII. Selected Topics
   A. Organic chemistry
   B. Coordination chemistry
   C. Nuclear chemistry
   D. Descriptive inorganic chemistry
   E. Materials science
   F. Hess's law

Class Policies/Procedures

Inclement Weather Class Policy/Procedure
During periods of inclement weather, HCTC will either open at 11:00 or be closed. On days that HCTC open at 11:00 a.m., all courses scheduled BEFORE 11:00 a.m., will be canceled. Decisions regarding evening classes will be made by 4:00 p.m. Check local radio, TV stations, or the HCTC website for information.

General Class Make-up, Late Assignment Class Policy/Procedure
Though there are specific due dates for the course, all assignments are available to the course start date, and it is in your best interest to not wait until the last minute to do the course work. You are even encouraged to work ahead when possible. Policies regarding late assignments are listed above in the “Descriptions of Graded Assignments” section. Exceptions, including those that are weather-related, will be considered on a case by case basis. No assignments will be accepted after 11:59 pm Eastern on July 26th, 2019.

Attendance Class Policy/Procedure
As this is a web-based class, there is no formal attendance; however, students are expected to complete the work in the time allotted. Any student who has not completed the Course
Orientation Assignment in Blackboard by July 3rd will be reported as a “no-show” under KCTCS policy.

Withdrawal Class Policy/Procedure
A student may officially withdraw from any class up to and including the date of midterm with a W grade assigned to the student’s record. After midterm and through the last class day (not including the period for final, students will need instructor’s permission.

Accommodations Procedure
HCTC recognizes that a disability may preclude a student from demonstrating required course competencies or from completing course requirements. In compliance with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, any qualified student with disabilities may request appropriate course accommodations to ensure that full benefits are received and that the instructor is aware and can make the proper adjustments. Students are encouraged to meet with the Disability Services Representative to develop and complete an Accommodations Plan.
Julie Caudill, HCTC Disabilities Services Representative
Phone: 606-487-3486 and Email: jcaudill0129@kctcs.edu

Appeals Process
Always begin the informal process by talking to your instructor. If issues cannot be resolved, then talk with the Dean/Supervisor (see below for contact information) of the faculty member. For information about academic rights, academic offenses, and the student’s formal right to appeal, review the KCTCS Code of Student Conduct.

Dean/Supervisor Contact Information
Dean/Supervisor: Leila Sandlin Smith  
Office Location: Lees Campus/Admin 101A  
Phone Number: 606-487-3504  
Email Address: leila.smith@kctcs.edu

Additional Syllabus Information:
Review the HCTC Website: (from HCTC Website Click Current Students > Academic Resources)

Print Version of URLs listed in the syllabus:
Academic Calendar: https://hazard.kctcs.edu/education-training/academic-calendar/index.aspx
HCTC Syllabus Website: https://hazard.kctcs.edu/current-students/academic-resources/syllabus_information.aspx
Student Code of Conduct: https://kctcs.edu/current_students/code_of_student_conduct.aspx