AP/DC Chemistry
Chem 1311- General Chemistry
Chem 1111- Chemistry Lab
Syllabus

AP/DC Chemistry
2021-2022
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Course Description

The purpose of the AP/DC course is to provide college level course in Chemistry and to prepare the student to seek credit and/or appropriate placement in college chemistry courses. The course meets five times per week for 50 minutes each day. Labs will be conducted during the week during the designated class time. Learning will be an active process with the students engaging in the discussion and in the labs. Students will be conducting authentic laboratory experience at least 25% of the time if not more [CR 5a]. Emphasis is placed on the depth of the topic rather than the breadth of the material in order to gain a deeper understanding of the material.

Big Ideas

In this level of Chemistry we have what are called Big Ideas. These are themes that we utilize throughout the flow of course which is designed to foster a deeper understanding of the material.

Big Idea 1: Structure of Matter
Big Idea 2: Properties of Matter
Big Idea 3: Chemical Reactions
Big Idea 4: Rates of Chemical Reactions
Big Idea 5: Thermodynamics
Big Idea 6: Equilibrium

Academic Integrity

Students are responsible for understanding the Angelo State University Honor Code, which is found in the Student Handbook (www.angelo.edu/cstudent/). Students are expected to work independently on quizzes, exams, and lab reports. See the ASU Student Handbook for definitions of cheating and plagiarism.

Academic misconduct includes cheating, plagiarism, collusion, falsifying academic records, misrepresentation facts, violations of published professional ethics/standards, and any act or attempted act designed to give unfair academic advantage to oneself or another student

Plagiarism is a serious topic covered in ASU's Academic Integrity policy in the Student Handbook. Plagiarism is the action or practice of taking someone else's work, idea, etc., and passing it off as one's own. Plagiarism is literary theft.

In your discussion and/or papers, it is unacceptable to copy word for word without quotation marks and the source both in the body of your paper and the reference list.

Papers are subject to be evaluated for originality via Turnitin. Resources to help you understand this policy better are available at the ASU Writing Center.

Copyright Policy: Student officially enrolled in this course should make only one printed copy of the given articles and/or chapters. You are expressly prohibited from distributing or reproducing any portion or course reading in printed or electronic form without written permission from the copyright holders or publishers

Student Disability Service

ASU is committed to the principle that no qualified individual with a disability shall, on the basis of disability, be excluded from participation in or be denied the benefits of the services, programs or activities of the university, or be subjected to discrimination by the university, as provided by the American with Disabilities Act of 1990 (ADA), the Americans with Disabilities Act Amendments of 2008 (ADAAA), and subsequent legislation.

The Office of Student Affairs is the designated campus department charged with the responsibility of reviewing and authorizing requests for reasonable accommodations baed on a disability, and it is the student's responsibility to initiate such a request by contacting:

Ms. Dallas A Swafford: Director of Student Disability Services
325-942-2047
dallas.swafford@angelo.edu

Title IX Statement

Angelo State University is committed to the safety and security of all students. If you or someone you know experiences sexual harassment, sexual assault, domestic or dating violence, stalking, or discrimination, you may contact ASU's Title IX Coordinator:

Michelle Nicole Boone, J.D.: Director of Title IX Compliance
325-486-6357
michelle.boone@angelo.edu

Student Absence for Observance of Religious Holy Days

A student who intends to observe a religious holy day should make that intention known in writing to the instructor prior to the absence. See ASU Operating Policy 10.19 Student Absence for Observance of Religious Holy Day for more information

Incomplete Grade Policy

It is policy that incomplete grades be reserved for student illness or personal misfortune, Please contact faculty is you have serious illness or a personal misfortune that would keep you from completing course work. Documentation may be required. See ASU Operating Policy 10.11 Grading Procedures for more information

Objectives

Students will

1. Learn the inquiry process through numerous laboratory investigations
2. Gain an understanding of the six big ideas as articulated in the AP Chemistry Curriculum Framework. [CR2]
3. Apply mathematical and scientific knowledge and skills to solve quantitate, qualitative, spatial, and analytic problems.
4. Apply basic arithmetic, algebraic, and geometric concepts.
5. Formulate strategies for the development and testing of hypotheses.
6. Use basic statistical concepts to draw both inferences and conclusions from data
7. Identify implications and consequences of drawn conclusions.
8. Use manipulative and technological tools including Texas Instruments calculators, computers, Vernier Probes, Vernier Lab Pro, and Vernier Logger's Pro Software.
9. Measure, compare, order, scale, locate, and code accurately.
10. Scientific research, report, and display the results of this research.
11. Learn to think critically in order to solve problems.

Learning Management System

We will be utilizing Schoology which is used in all classes at Lake View High school. I will be posting material for the class through this platform. You as a student will need to access this platform for this class. If you are absent, you should check here for the material learned for the day.

Grading

This class will consist of lab and lecture work. Final grade will be awarded at the end of each semester. Grading will reflect the guidelines that we have in place at Lake View: 40% minor, 60% major.

Minor Grades include: Homework, Quizzes, Labs, Activities and Discussions

Quizzes will allow students an opportunity to apply their knowledge gained.

Major Grades include: Formal Lab Report and Assessment, Assessments

Laboratory

All of the laboratory experiments in this course are hands-on. Students work individually or in a group of two depending upon the lab. They will collect, process, manipulate, and graph data from both qualitative and quantitative observations. Inquiry is emphasized in many of the experiments that students complete. The laboratory work requires students to design, carry out, and analyze data using guided inquiry principles. For all labs, students are required to report the purpose, procedure, all data, data analysis, error analysis, results, and conclusions in a lab report that is submitted for grading. **[CR7]** All laboratory experiments are intended to be completed in 2-45 minute periods expect the following guided-inquiry labs that require double that time.

Textbook

Lake View High school has available through the library our textbook:

Chemistry: The Central Science 13th edition

Brown and Lemay

Technology-

Students will be using their iPads, TI Calculators, Computers, Logger Pro, Lab Pros, and various Vernier Probes in order to gather their data for their experiments. Graphs will be produced by the Vernier Logger Pro Software.

Laboratory Notebook

A laboratory notebook is required for the course. All completed lab reports documenting all lab experiences must be included in the notebook. The notebook is checked, but the students are also expected to formalize their lab report. They are expected to type up the full lab report and include all data and calculations for further verification. **[CR7]**

Test

A Unit test is assigned for each unit. Some units are larger than others, so multiple test will be assigned. Likewise since lab skills and lab learning are essential to the course, lab test will be administered throughout both semesters. Students will be required to complete a full lab report as well as performing the lab for their assessment. A comprehensive, standardized semester exam is administered at the end of the 1st semester and a final exam at the end of the year.

AP Exam Review

The final ten days before the exam will be set aside so that students can prepare for the AP Chemistry Exam. Students will be able to practice the exam, review material, and work cooperatively on free response practice problems from older exams. Students will also practice net ionic equations and will be quizzed on their progress. Several practice AP exams are administered as part of the two week review prior to the AP Chemistry Exam.

These time frames are relative and adjustments may incur due to student needs.

Unit	Topics	AP Big Ideas	Time Frame
0	Review Nomenclature and Stoichiometry	Reaction Types & Stoichiometry (B3)	About 10 days
1	Gas Laws	Gases (B1 & 2)	About 12 days
2	Kinetics	Kinetics (B4)	About 24 days
3	Equilibrium- Acid- Base Equilibria, Solubility Equilibria	Equilibrium (B6)	About 46 Days- Subject blends over into S2
4	Thermodynamics, Thermochemistry, Electrochemistry	Thermodynamics (B5)	About 15 Days
5	Atomic Structure, Periodic Table	Atomic Theory & Atomic Structure (B1 & 2)	About 14 days
6	Chemical Bonding, Molecular Geometry, and Hybridization	Chemical Bonding (B1 & 2)	About 14 days
7	Intermolecular Forces, Solution Properties, Reaction Products	Liquids, Solids, & Solutions (B1 & 2)	About 12 Days
8	Organic Chemistry Intro	Descriptive Chemistry (B2)	About 10 days
9	Nuclear	Descriptive Chemistry (B2)	About 5 days
10	Review- Exam Prep		

B- Refers to Big Ideas: B1- Structure of matter; B2-Properties of matter- characteristics, states, and forces of attraction; B3- Chemical reactions, B4- Rates of Chemical reactions, B5- Thermodynamics, Bg- Equilibrium

Tentative and subject to change

Week	Goals	Labs
8/16	Welcome Back/ Intro to class	Complete Pre Lab work for ASU
8/23	Review Stoichiometry and Chemistry Basics	Lab Safety Lab/ Hydrate Lab
8/30	Continue Math review work and Discuss tools utilized in Chemistry including Spectrscopes **EXAM #1**	Chromatography: Koolaid Chemistry (AP 5)
9/6	Gas Laws Intro/ Math work	Ideal Gas Law Lab
9/13	Ideal Gas Laws and extension of concepts	Hydrogen Peroxide Lab (AP 8) **(Formal Lab Report)**
9/20	Introduction of Kinetics **EXAM #2**	Acid Rain (AP Lab 10)
9/27	Kinetics problems and explanations	Iodine Clock Lab: Kinetics and Equilibrium
10/4	Continue Kinetics and More practice	Crystal Violet Lab (AP 11)
10/11	Kinetics and Equilibrium	Titration lab with Kinetics
10/18	Equilibrium and what it means **EXAM #3**	Le Chatelier's (AP 13)
10/25	Continuing Equilibrium	Reaction Lab: System changes
11/1	Equilibrium practice	Food Dyes (AP 1) **(Formal Lab Report)**
11/8	Equilibrium	Reaction Lab
11/15	Equilibrium Calculations and changes **EXAM #4**	Reaction Lab
11/29	Equilibrium and Acids and Bases	Soft Drink Titration (AP 4)
12/6	Finals	Finals
12/13		

2nd Semester

Week	Goals	Labs
1/4	Equilibrium- Acids and Bases	Titration Lab (AP 14)
1/10	Equilibrium- Acids and Bases	Buffers Lab (AP 15)
1/17	Equilibrium- Acids and Bases	Buffer effectiveness (AP 16). **(Formal Lab Report)**
1/24	Thermochemistry Intro	Calorimetry Review Lab
1/31	Thermochemistry/ Hess's Law **EXAM #5**	Hand warmers (AP 12)
2/7	Thermochemistry and into Electrochemistry	Half Cell Lab
2/14	Electrochemistry Calculations	Electrolysis Lab
2/21	Atomic Structure and Periodic table **EXAM #6**	Reaction Lab
2/28	Atomic Structure and Periodic table	Reaction Lab
3/7	Atomic Structure and Periodic table	Tables Lab (AP 9)
3/21	Chemical bonding and VSEPR	Separate Solids (AP 6) **(Formal Lab Report)**
3/28	Chemical bonding and VSEPR	Purity Mixture (AP 7)
4/4	Chemical bonding and VSEPR **EXAM #7**	Reaction Lab
4/11	Intermolecular Forces	Copper Brass (AP 2)
4/18	Intermolecular Forces	Hard Water (AP 3)
4/25	Organic Chemistry **EXAM #8**	Reaction Lab
5/2	Organic Chemistry	Reaction Lab
5/9	Nuclear Chemistry	Reaction Lab
5/16	Finals	
5/23		