

### Course Expectations for AP Chemistry – 6860

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### COURSE DESCRIPTION:

This one-year course is designed to provide a comprehensive background for those students desiring an in-depth study of chemical concepts. This course will focus on meeting the requirements of the College Board Advanced Placement Chemistry exam. Instructors should refer to the current Advanced Placement course description for examination specifics. Topics included are atomic theory and structure; chemical bonding; nuclear chemistry; gases, liquids and solids; solutions; reaction types; acids and bases; stoichiometry; equilibrium; kinetics; thermodynamics; electrochemistry; oxidation-reduction; descriptive chemistry; and an introduction to carbon chemistry. Laboratory work of quantitative and qualitative nature is used to develop manipulative skills and reinforce topic areas. It is recommended that students successfully complete a first year biology and a first year chemistry course before enrolling in AP Chemistry. Instructional practices will incorporate integration of diversity awareness including appreciation of all cultures and their important contributions to our society. The appropriate use of technology is an integral part of this course. This course will fulfill one credit of the Nevada high school graduation requirement for science and qualifies as a laboratory science for college entrance.

### COURSE GOALS:

1. To engage in chemical inquiry using the scientific method of problem solving.
2. To develop the ability to analyze chemical statements critically.
3. To develop an understanding of systematic nomenclature, inorganic and organic, adopted by the International Union of Pure and Applied Chemists.
4. To improve the standard of communication of chemical ideas, both written and oral.
5. To enhance skill in formulation, proving dimensionally the concepts of stoichiometry with emphasis on significant figures.
6. To comprehend the development of chemical principles and concepts.
7. To demonstrate applications of chemical principles.
8. To relate fact to theory and properties to structure.
9. To enhance an understanding of the periodic table as it is related to atomic structure.
10. To enhance an understanding of the organization of the periodic table and its usefulness in writing formulas, determining bond types, and in determining chemical periodicity of elements and compounds.

11. To reinforce an understanding of valence electrons and their representation using Lewis formulas.
12. To develop an understanding of the Valence Shell Electron-Pair Repulsion Theory (VSEPR) for determining molecular structure.
13. To reinforce skills in using the International System (SI) of units and measurements, symbols, terms, equations, and mathematical calculations in analyzing and expressing chemical and physical processes.
14. To reinforce an understanding of the mole concept as it relates to balancing chemical equations and its usefulness in determining mass, volume, and/or energy relationships in chemical reactions.
15. To enhance an understanding of the Kinetic Molecular Theory.
16. To enhance an understanding of the states of matter and solutions.
17. To enhance an understanding of the various concepts of acids and bases and to quantitatively utilize those concepts.
18. To develop a qualitative and quantitative understanding of chemical kinetics and equilibrium.
19. To develop a qualitative and quantitative understanding of ionic equilibria of electrolytes.
20. To develop an understanding of the quantitative manipulations involving solubility product.
21. To introduce an understanding of the changes in enthalpy, entropy, and free energy.
22. To develop an understanding of the Laws of Thermochemistry.
23. To enhance a qualitative and quantitative understanding of electrochemistry and oxidation/reduction.
24. To develop a basic knowledge of hydrocarbons, their derivatives, and some representative reactions.
25. To develop an understanding of the spectroscopic methods of chemical analysis as they relate to atomic and molecular structure.
26. To develop an understanding of nuclear stability and nuclear reactions.
27. To develop an understanding of qualitative analysis and descriptive chemistry.
28. To develop manipulative and experimental skills necessary to become increasingly competent and confident in the processes of chemical investigation.

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29. To create an awareness of the impact and influence of chemistry on society, thus preparing one for living in a technological age.
30. To have an awareness of the occupational opportunities in areas related to chemistry.
31. To develop an understanding of character, ethics, and manners as appropriate for this course. There is no intended order for the following goals. The teacher is encouraged to integrate these goals throughout this course to provide all students with a foundation in science process skills.

The goals of science instruction for all students are to:

- Reason scientifically and think flexibly.
- Communicate scientifically.
- Understand science concepts and value science.
- Exhibit confidence in the ability to solve scientific problems.
- Collect, manipulate, and present data using proper mathematical form.

Note: Course goals exceed Nevada Content Standards for this subject.

### **COURSE OUTLINE:**

AP Chemistry is challenging considering not only the content, but also considering that there are many topics to cover in such a short duration. It is imperative that we cover the material below in the allotted time as to allow ourselves enough time to review for the AP exam.

Below is a tentative schedule detailing the topics that will be covered and the labs that will be performed on a weekly basis:

WEEK	DATES	DESCRIPTION	LAB ACTIVITIES
Week 1	8/30-9/3	Chp.1 Matter & Measurement	The Laboratory Notebook
Week 2	9/6-9/10	Chp.2 Atoms, Molecules, & Ions	Laboratory Safety
Week 3	9/13-9/17	Chp.3 Stoichiometry	Lab 1 – Density
Week 4	9/20-9/24	Chp.4 Aqueous Reactions	Lab 2 – Determining Density
Week 5	9/27-10/1		Lab 3 – Filtration/Distillation
Week 6	10/4-10/8	Chp.5 Thermochemistry	Lab 4 – Chromotography
Week 7	10/11-10/15		Lab 5 – Determining Melting Pt.
Week 8	10/18-10/22	Chp.6 Electronic Structure of Atoms	Lab 6 – Applied Stoichiometry
Week 9	10/25-10/29	Chp.7 Periodic Properties of Elements	Lab 7 – Chemical Reactions
Week 10	11/1-11/5		Lab 8 – Gravimetric Analysis
Week 11	11/8-11/12	Chp.8 Chemical Bonding	
Week 12	11/15-11/19	Chp.9 Molecular Geometry	Lab 9 – Calorimetry
Week 13	11/22-11/26		
Week 14	11/29-12/3	Chp.10 Gases	Lab 10 – Gases
Week 15	12/6-12/10		Lab 11 – Volume of a Gas
Week 16	12/13-12/17	Chp.11 Liquids and Solids	Lab 12 – Molar Mass of Liquids

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	12/20-12/31	Winter Break	
Week 17	1/3-1/7	Chp.13 Properties of Solutions	Lab 13 – Colloids
Week 18	1/10-1/14		
Week 19	1/17-1/21	Semester 1 Final Exams	
Week 20	1/24-1/28	Chp.14 Chemical Kinetics	Lab 14 – Colligative Properties
Week 22	1/31-2/4		Lab 15 – Rates of Chemical Rxns
Week 22	2/7-2/11	Chp.15 Chemical Equilibrium	Lab 16 – Chemical Equilibrium
Week 23	2/14-2/18		
Week 24	2/21-2/25	Chp.16 Acid-Base Equilibria	Lab 17 – Acid-Base Titrations
Week 25	2/28-3/4		
Week 26	3/7-3/11	Chp.17 Aqueous Equilibria	Lab 18 – Dissociation of Weak Acids
Week 27	3/14-3/18		
Week 28	3/21-3/25	Chp.19 Chemical Thermodynamics	Lab 19 – Ksp of Calcium Hydroxide
Week 29	3/28-4/1		
Week 30	4/4-4/8	Chp.20 Electrochemistry	Lab 20 – Electrochemistry
Week 31	4/11-4/15		Lab 21 – Hydrates
	4/18-4/22	Spring Break	
Week 32	4/25-4/29	Review	
Week 33	5/2-5/6	May 2 <sup>nd</sup> – AP Chemistry Exam	
Week 34	5/9-5/13	Independent Activities	
Week 35	5/16-5/20	Independent Activities	
Week 36	5/23-5/27	Independent Activities	
Week 37	5/31-6/3	Independent Activities	
Week 38	6/6-6/10	Semester 2 Final Exams	

### LABORATORY ACTIVITIES

The laboratory activities included are designed to not only reinforce the content knowledge discussed in lecture, but to also build the necessary skills and knowledge of working in a laboratory environment. Chemical knowledge, proficiency in using lab equipment, as well as good teamwork and problem solving skills will all contribute to a successful laboratory experience. Since labs are fairly frequent, care must be taken to prepare appropriately not only mentally (i.e. pre-lab work), but physically (i.e. laboratory attire).

### COURSE REQUIREMENTS AND GRADING PROCEDURES:

#### GRADING POLICY

The purpose of grades is to provide effective feedback to students, parents, and the school administration about a student's progress towards mastery of the established standards for a particular course or subject. As such, other factors such as attendance, effort and behavior will not be considered when calculating a student's grade. However, **excessive absences** (Seven unexcused absences during a semester) may result in a loss of credit in accordance with CCSD Regulation 5113. Extra credit will **not** be permitted unless the work is specifically designed to provide more evidence of a student's progress towards mastery of the established standards.

Teachers will provide students with unit overviews that outline the performance expectations for that unit. These outlines will be accompanied by rubrics that define the

levels of proficiency students are expected to demonstrate. The goal is for students to become more involved in monitoring their level of proficiency and participating in Assessment for Learning in order to improve their performance.

Students will be graded on a 0-100 point scale, with the following grade equivalents:

90-100	=	A	Consistently exceeds standards
80-89	=	B	Consistently meets standards
70-79	=	C	Approaching standards
60-69	=	D	Emergent
0-59	=	F	Does not meet standards/ Evidence not provided

In order to demonstrate sufficient evidence of proficiency, a student will be required to make arrangements with the teacher to make-up any assessments missed due to an absence. Failure to complete required assessments may result in a lower grade or a failing grade due to a lack of evidence.

Throughout the semester, students will be expected to complete formative and summative assessments. The Southwest Career and Technical Academy will be incorporating Project-Based Learning across the curriculum. The project-driven assessments will be implemented and assessed according to a standard rubric for all students, based on our beliefs in the attributes of Academic Knowledge, Character, Skills, Work Ethic, and Preparation. Further assessments include, but are not limited to, homework, class activities, participation, lab activities, class projects, quizzes, and exams. For this subject, assessments will be weighted as follows:

### Project-Based Learning and the Six Tenets

The Southwest Career and Technical Academy is dedicated to assessing student learning and achievement through Project-Based Learning (PBL). The Southwest CTA uses six tenets, or beliefs, to assess student performance during each PBL assessment. These tenets will be the basis of grading during each PBL project. The six tenets are as follows:

- Content Knowledge
- Work Ethic
- Use of Resources
- Teamwork and Collaboration
- Professional Presentations
- Writing Skills

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These tenets may also be used in the classroom setting at the teacher's discretion.

Content Knowledge	30%
Writing Skills	20%
Presentation Skills	20%
Use of Resources	10%
Teamwork	10%
Work Ethic	10%

Tenet	Program Area	Core/Elective Area
Content Knowledge = Tests/Quiz, Homework, Project	Program Vocabulary Program Skills	Content Vocabulary Content Skills
Written Skills = Tests/Quiz, Homework, Project	Writing skills appropriate to program (HTML Coding, Drafting, Auto Diagnostic)	Writing skills appropriate to core (Scientific Method, Geometric Proofs, Essay Responses)
Presentation Skills = Project, Hands-on Mastery	Traditional Presentation (PowerPoint, Delivery to audience) Professional Presentation (Uniform, Showcase of Skill Mastery during Peer- Teacher Demonstration)	Traditional Presentation (PowerPoint, Delivery to audience) Professional Presentation (Professional apparel, vocal delivery)
Use of Resources = Appropriate use of secondary resources, utilization of technology, mastery of tools	Accessing career specific resources (databases, manuals, textbook) Appropriately using tools and materials (medical equipment, sewing machines, drafting tools)	Accessing core specific resources (databases, tutoring programs, textbook) Appropriately using core-specific tools and materials (Podcasts, Interactive Notebook, Cornell Notes, I-Touch)

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Teamwork/Collaboration = Participation (Group Level)	Group Labs Project Collaboration	Daily Group Work Project Collaboration
Work Ethic = Meeting Deadlines, Participation (Individual Level)	Meeting designated deadlines (assignments, project scaffolds) Class participation	Meeting designated deadlines (assignments, project scaffolds) Class participation

According to CCSD regulation 5121, “Semester exams shall be comprehensive of the material covered during the semester and may be worth up to, but not exceed, 20% of the student’s final semester grade. Final semester grades shall reflect assignments and assessments completed throughout the semester and the final exam grade”. Semester grades are not to account for more than 10% of the final grade. Semester grades will be calculated as follows:

Quarter 1 Grade	=	45%
Quarter 2 Grade	=	45%
Semester Exam	=	10%
Semester Grade	=	100%

### REQUIRED MATERIALS

- Textbook: Brown, Theodore L., et al. *Chemistry: The Central Science*. 10<sup>th</sup> ed.
- Lab Notebook (8-1/2” x 11” graph paper notebook with at least 80 pages)
- Scientific / Graphing Calculator
- 3-ring binder w/dividers

### MAKEUP WORK POLICY

**The following language is from CCSD Regulation 5113:**

Teachers shall provide an opportunity for a student to make up missed work due to any absence, and students shall be held accountable for the work. When a student is absent, however, the educational experiences lost during that absence might be irretrievable because the instruction and interaction in the instructional setting cannot be duplicated through makeup work.

After any absence, a secondary student is required to initiate contact with the teacher(s) to obtain appropriate makeup work **within** three school days immediately following the absence. Once contact has been made with the teacher(s), specific makeup work must be completed and returned to the teacher(s) within a reasonable length of time, to be determined by the teacher and communicated to the student/parent or legal guardian. The makeup work must be returned to the teacher(s) by the specified due date if it is to be acknowledged. Students shall be allowed a minimum of three (3) days to complete makeup work.

## **LATE WORK POLICY**

Late work that is considered practice (homework, classwork, etc.) will be accepted and graded for credit at the teacher's discretion.

## ***DISCIPLINE PROCEDURES AND CITIZENSHIP GRADING:***

### **A. Classroom Discipline Plan**

- Be respectful to others.
- Be prepared and on time for class.
- Practice on-task behavior.
- Use only appropriate language.
- Keep food, gum, and beverages out of the classroom.

The following steps in the Southwest Career and Technical Academy Progressive Discipline Plan will be followed when students do not follow established rules and behave inappropriately:

<b>STEP ONE:</b>	<b>Teacher-Student Conference (Warning)</b>
<b>STEP TWO:</b>	<b>Parent Contact by Teacher (Phone or Letter)</b>
<b>STEP THREE:</b>	<b>Counselor Referral</b>
<b>STEP FOUR:</b>	<b>Dean's Referral</b>

**Some offenses are serious enough to warrant a referral to the Dean for the initial infraction (e.g.: physical violence, gross insubordination, truancy, etc.)**

### **B. Tardy Policy**

Timeliness Is Expected (T.I.E.) program promotes being on time as a basic skill for success that every person needs to possess. Through this program, it is our expectation that SWCTA students arrive on time to every class. Not only are students developing skills for success in high school but for the rest of their lives. Being on time before school may require special attention from the student's parent or guardian.

When a student is tardy during the 2011-2012 school year, the student will bring home a tardy slip. Any tardy during 1st block will result in a deans' detention to be served after school the following day. Detention will be served from 1:30-2:00 in a room designated by

the dean’s office. In addition to dean’s detention, the third tardy in 1st block will also result in a Required Parent Conference, and a sixth tardy will result in one day of suspension. A day of suspension will be given for every tardy thereafter. Tardies received for any other periods of the day will require a parent or guardian to bring the student to school the next day and sign them in at the dean’s office. Students who attempt to attend classes before being reinstated will be required to call home and get a parent to come sign them in or get permission to leave campus. Students not signed in will be placed on RPC (Required Parent Conference) pending a parent conference.

It is our goal that all students achieve to the best of their ability. By being on time to each class, students have a better opportunity to be successful. Parents or guardians may contact the Dean’s Office at 799-5766 (X4500) in the event that there are questions regarding our Timeliness Is Expected program.

**C. Cell Phone/Nuisance Item Policy**

The Southwest Career and Technical Academy cell phone/nuisance item policy is in accordance with CCSD Regulation 5136 and the specific needs of the Southwest Career and Technical Academy.

- FIRST OFFENSE: Warning/Copy of Policy/Confiscation**
- SECOND OFFENSE: RPC-B/Parent Pick-Up/Confiscation**
- THIRD OFFENSE: RPC-T/Behavior Contract/Parent PickUp/Confiscation**
- FOURTH OFFENSE: 1 Day Suspension/Parent Pick-Up/Confiscation**
- FIFTH OFFENSE: 3 Day Suspension/Parent Pick-Up/Confiscation**
- SIXTH OFFENSE: 5 Day Suspension/Parent Pick-Up/Confiscation**

**D. Citizenship Policy**

CATEGORY	<b>Outstanding (4)</b>	<b>Satisfactory (3)</b>	<b>Needs Improvement (2)</b>	<b>Unsatisfactory (1)</b>
Engagement	Consistently involved in class activities; contributes to overall learning process; collaborates with others and/or the teacher.	Engages in class activities, but may have to be encouraged; works with others or groups, but may not initiate collaboration.	Does not engage in class activities; rarely demonstrates initiative and may occasionally disengage from class.	Consistently uninvolved in class activities. Adamant refusal to work.

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Preparation	Consistently prepared with materials; work is on time and may go beyond expectations.	Student has materials and submits work in a timely fashion and as expected.	Student may have had multiple instances of being unprepared, late work, or not completed as requested.	Consistently unprepared for class. Does not submit work on time or at all.
Behavior	Consistently respectful of both classmates and adults; Takes responsibility for individual actions; Consistently complies with school and classroom rules.	Respectful to both peers and adults. Occasionally accepts personal responsibility. Mostly complies with school and classroom rules.	Disruptive to others. Argumentative and defensive when disciplined. Disregard for school or class rules.	Consistent disrespect to classmates or adults. Regularly disruptive to learning process and violation of school or class rules. <b>Plagiarism</b>

**Student citizenship grades are reported as follows: (This part cannot be changed)**

**O = Outstanding**  
**S = Satisfactory citizenship**  
**N = Needs Improvement**  
**U = Unsatisfactory citizenship**  
**CODE OF HONOR**

### Nevada Department of Education

There is a clear expectation that all students will perform academic tasks with honor and integrity, with the support of parents, staff, faculty, administration, and the community. The learning process requires students to think, process, organize and create their own ideas. Throughout this process, students gain knowledge, self-respect, and ownership in the work that they do. These qualities provide a solid foundation for life skills, impacting people positively throughout their lives. Cheating and plagiarism violate the fundamental learning process and compromise personal integrity and one's honor. Students demonstrate academic honesty and integrity by not cheating, plagiarizing or using information unethically in any way.

#### What is cheating?

Cheating or academic dishonesty can take many forms, but always involves the improper taking of information from and/or giving of information to another student, individual, or other source. Examples of cheating can include, but are not limited to:

- ☞ Taking or copying answers on an examination or any other assignment from another student or other source

- ➡ Giving answers on an examination or any other assignment to another student
- ➡ Copying assignments that are turned in as original work\*
- ➡ Collaborating on exams, assignments, papers, and/or projects without specific teacher permission
- ➡ Allowing others to do the research or writing for an assigned paper
- ➡ Using unauthorized electronic devices
- ➡ Falsifying data or lab results, including changing grades electronically

*\*This includes submitting the same assignment to two separate teachers without prior permission.*

### **What is plagiarism?**

Plagiarism is a common form of cheating or academic dishonesty in the school setting. It is representing another person's works or ideas as your own without giving credit to the proper source and submitting it for any purpose. Examples of plagiarism can include, but are not limited to:

- ➡ Submitting someone else's work, such as published sources in part or whole, as your own without giving credit to the source
- ➡ Turning in purchased papers or papers from the Internet written by someone else
- ➡ Representing another person's artistic or scholarly works such as musical compositions, computer programs, photographs, drawings, or paintings as your own
- ➡ Helping others plagiarize by giving them your work

All stakeholders have a responsibility in maintaining academic honesty. Educators must provide the tools and teach the concepts that afford students the knowledge to understand the characteristics of cheating and plagiarism. Parents must support their students in making good decisions relative to completing coursework assignments and taking exams. Students must produce work that is theirs alone, recognizing the importance of thinking for themselves and learning independently, when that is the nature of the assignment. Adhering to the Code of Honor for the purposes of academic honesty promotes an essential skill that goes beyond the school environment. Honesty and integrity are useful and valuable traits impacting one's life.

*\*This includes submitting the same assignment to two separate teachers without prior permission.*

*Questions or concerns regarding the consequences associated with a violation of the Code of Honor may be directed towards your child's school administration and/or the school district.*

**Dear Families,**

Please sign and detach this portion along the line above and have your child return it to the teacher listed below, so that you may keep this copy of the course expectations for future reference. Please contact (teacher) at 799-5766, if you have any questions regarding the information included in this document. I look forward to meeting you and becoming a partner in your child’s educational experience at Southwest Career and Technical Academy.

**Teacher**  
**Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**I HAVE READ THESE COURSE EXPECTATIONS AND UNDERSTAND THE EXPECTATIONS FOR MY CHILD THIS YEAR.**

**Parent/Guardian**  
**Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**I HAVE READ THESE COURSE EXPECTATIONS AND UNDERSTAND THE EXPECTATIONS FOR ME DURING THIS SCHOOL YEAR.**

**Student Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

*Please indicate your preference, sign and date this form below.*

- I give** my child permission to view “PG” rated films.
- I do not give** my child permission to view “PG” rated films with the understanding that an alternative assignment will be given.

Parent/Guardian Signature: \_\_\_\_\_

Date: \_\_\_\_\_