

Sullivan High School/Ivy Tech Community College

Course Syllabus – Chemistry II/CHM 101

Course Information

Course: Chemistry II/CHM 101
Class Location: Room 108

Teacher Information

Name: Mr. Wallace
E-Mail: mwallace@swest.k12.in.us
Conference: 1st Period

Catalog Description

An introductory course that includes the science of chemistry and measurement, atomic theory and the periodic table, chemical bonding, equation writing and balancing, stoichiometry, gases and acids/bases. Includes lab.

Materials Required for Class Every Meeting:

Students are expected to bring to every class meeting: a notebook that includes all materials assigned and issued throughout the course (a 2” D-ring binder with dividers having storage pockets is recommended), a scientific calculator, and a laboratory notebook. The laboratory notebook is a composition notebook and for laboratory use only. Since assignments will require the use of information obtained in previous meetings and since the course is comprehensive, it is very important that a student maintain an organized, complete notebook.

Course Content

Introduction to Chemistry	Elements, Atoms, and Ions	pH and pOH
Measurements and Calculations	Nomenclature	Acids and Bases
Matter and Energy	Chemical Reactions	Chemical Quantities
Modern Atomic Theory	Chemical Bonding	Stoichiometry
Chemical Compositions	Gases	

Course Objectives

1. Measure with S.I. (Systeme Internationale) and U.S.C.S. (U.S. Customary System) units of length, volume and mass.
2. Distinguish between accuracy and precision of measurement while using the correct number of significant figures.
3. Perform mathematical calculations using scientific notation, and solve mathematical problems using dimensional analysis.
4. Describe modern atomic theory. Differentiate among electrons, protons, and neutrons and describe how they affect the properties of elements.
5. Explain the differences between the common states of matter in terms of visible properties and particle movement.
6. Distinguish between elements, compounds, homogeneous mixtures and heterogeneous mixtures.
7. Describe the periodic table in terms of element arrangement in periods, groups, and subshell blocks.
8. Describe the electron configurations of elements, determine the number of valence electrons for all representative elements, write Lewis Structures for the representative elements and simple compounds.
9. Distinguish between ionic and covalent bonding and relate that to the description of the different types of intermolecular forces.
10. Given the name (or formula) of a compound, write the formula (or name) of that compound.
11. Given the mass (or moles) of an element or compound, calculate the moles (or mass) of that element or compound.
12. Calculate the concentration of a solution in terms of percent and molarity.
13. Classify chemical reactions into one of the three major groups (synthesis, oxidation-reduction, and exchange).
14. Balance a chemical equation by inspection and calculate mass relationships in chemical reasons by using stoichiometry.
15. Describe the properties of acids, bases, and salt, and determine simple pH and pOH.
16. Calculate changes in pressure, volume, or temperature of a gas using the appropriate gas laws.
17. Describe and illustrate chemical principles in laboratory situations while following lab safety procedures.

18. Obtain reproducible data from chemical experiments; analyze, interpret, and communicate the data in a logical and coherent manner, and recognize non-human potential sources of errors when obtaining inaccurate results.

Laboratory:

- A. The laboratory experience is a key element of the Chemistry II course so labs will be integral to each major topic covered.
- B. The title, objectives/hypothesis, procedure and all necessary data tables must be prepared prior to conducting the experimentation. Sometimes these will be developed by you and sometimes they will be provided.
- C. Data is taken during the lab (and is recorded directly in the lab notebook) and calculations, discussions and conclusions are completed following clean up!
- D. All lab information is recorded in the lab notebook.
- E. Lab safety rules will be strictly enforced.
- F. Lab information may be quizzed/tested on the day the lab is submitted or on the exam for the corresponding chapter.

Assessment:

The students understanding will be assessed through the grading of a combination of problem sets, in-class assignments, laboratory work and notebook, quizzes, projects, and exams.

Exams	35%
Quizzes	25%
Weekly Quizzes	5%
Quick Checks	10%
Homework	10%
Laboratory Work	15%

This course is laboratory oriented and thus lab reports are required. Many different formats exist and what we do depends upon the exercise. A separate handout explains the lab report format.

Classroom Expectations

1. **Arrive to class on time and prepared.**
2. **Complete all assignments carefully and on time.**
3. **Be respectful.** We are in this class as a learning community, and as such, need to respect each other's thoughts and ideas.
4. **You are responsible for your actions.**
5. **Cell phones, earbuds, and other electronic devices.** These items are not to be used in the classroom unless approved by your teacher as necessary to advance the learning of Chemistry.
6. **Food and drinks are not allowed in the classroom (water in a clear bottle is allowed via the handbook).**

Absences:

If you are absent the day of an exam or quiz you will be expected to take the exam or quiz in the next class period you attend. If you are absent for a laboratory activity you may be able to make it up. You will be required to complete the report with sample data if it is not possible to perform the lab. It is YOUR responsibility to come before or after school to catch up on missed work from your absences. I will NOT re-teach the lesson during class time.

Exams:

Exams will take place at the end of each unit. Exam questions will consist of multiple choice and free response questions similar to those seen on the AP Chemistry exam. If a student misses an exam, an alternate exam will be given the day after the student returns to class. All exams will be announced several days in advance so to ensure plenty of time to prepare. Students should make every effort to be present on the day of an exam.

Quizzes:

Quizzes will be given in class at different points during a unit to reinforce, review, and help determine if the student understands the topic(s) being covered. Materials covered in laboratory work are subject to quizzes as well. Quizzes may or may not be announced ahead of time. Weekly quizzes over ions will be posted on Canvas (They will be open Monday morning through Sunday evening each week). Weekly quizzes cannot be made up and the lowest weekly quiz score will be dropped at the end of each grading period. Any topic quiz on which the student earns lower than a 80% will be able to be corrected up to an 80% by correcting the entire quiz.

Homework

You will have homework on a regular basis. This may be everyday depending on the material we are covering. Homework is given as review and reinforcement—the more effort you put into homework, the more prepared you will be for quizzes and exams. Assignments are due at the beginning of the class, unless stated differently; it will be graded for effort and completion and/or collected. Some questions will be mandatory and the rest will be optional. More challenging problems may be assigned as extra credit.

Quick Checks:

You will be given reading assignments with quick checks on Canvas to ensure you are doing the required reading. Multiple attempts will be allowed and the highest grade will be recorded. It is important that you understand the quick check questions before coming to class because the information will be used in lectures.

Academic Integrity:

When working in groups, you are free to discuss the activity or lab. However, you should answer all questions in your own words. Likewise—when working on homework assignments you may discuss the topics but must answer the specific problems yourself alone. Copying from someone else and discussing material from a quiz or exam with other students who have not taken the quiz or exam are all examples of cheating. If in doubt, ask your teacher.

General Instructions:

I want you to do as well as you are able. If you find that you need help, the earlier you seek it the better...A bit of first aid early is less painful, and more successful, than major reconstructive surgery later.

Therefore:

1. Read text assignments. Take note of all the information presented including captions, pictures, notes, graphs, and text. Complete the quick checks over the reading assignments.
2. View all assigned videos and take good notes.
3. Do all assigned homework problems—show all work.
4. Keep a running list of all important formulas, constants, rules, etc.
5. Seek help whenever necessary—before and after school or A.C.T. (when possible).
6. Take responsibility for your own learning.

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Please sign below and return to Mr. Wallace.

By signing below I certify that I have read the information provided in the course syllabus and I fully understand what is expected of me during the Chemistry II course.

Student Signature: _____

Date: _____

Guardian Signature: _____

Date: _____