

Chemistry 12

Course Outline

2023-2024

Welcome to Chemistry 12!

Chemistry 12 is a very intensive course and in order to be successful, it is strongly recommended that you have a sufficient and **strong** understanding of the Chemistry 11 content.

The course is divided into 5 main units:

Unit 1 – Reaction Kinetics

- Explain the significance of reaction rates, demonstrate how rates can be measured and explain, with reference to Collision Theory and reaction mechanisms, how rates are altered.

Unit 2 – Equilibrium

- Analyze reversible reacting systems, with reference to equilibrium systems, Le Chatelier's Principle, and the concept of a reaction constant, K_{eq} .

Unit 3 – Solubility Equilibrium

- Demonstrate and explain solute-solvent interactions in solubility equilibria and describe the significance of K_{sp} with respect to saturated systems.

Unit 4 – Acid-Base Equilibrium

- Describe the specific characteristics of acids and bases and distinguish the varying strengths of acids or bases for equilibria using a Bronsted-Lowry model.
- Describe the special role played by water in aqueous systems and use the acid-base equilibrium constants (K_a and K_b) and the ionization constant of water (K_w) to calculate pH and pOH values for different acid-base equilibria.
- Identify practical applications of acid-base systems, demonstrate the use of titrations to determine quantities of materials, explain the significance of hydrolysis, and relate buffer systems and acid rain to the concept of acid-base equilibrium.

Unit 5 – Electrochemistry

- Describe the essential components of reaction systems that involve electron transfer and determine the stoichiometry of redox reactions by balancing redox reactions.
- Use the concept of spontaneous and non-spontaneous reactions to explain practical applications of redox such as batteries, electroplating, electrorefining and corrosion.

Required Materials: Please bring the following to every class

- Binder with lined paper and dividers for each unit (see above)
- Pencil, eraser, highlighters, ruler
- Scientific Calculator
- Data Booklet
- Hebden Chemistry 12 Workbook (\$25)

Ms. Wang

Room 204

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Website: <http://mswangscience.weebly.com>

Evaluation: Your overall grade for this course is cumulative and based on the following:

- Labs/Unit Reviews 30%
- Quizzes/Tests 70%

Final Assessment 15% (of overall mark)

** Homework practice, check-points, and reviews are not collected for marks, but are **essential** to your success in this course!

Performance Standards for Work Habits (G/S/N)

	Good	Satisfactory	Needs Improvement
Attendance	No unexcused absences	Some unexcused absences	Unexcused absences
Punctuality	On time to every class	One or two late arrivals	Frequently late to class and/or late by several minutes
Preparation	Always brings necessary materials to class	Occasionally has forgotten materials	Frequently does not bring materials
Work Ethic	Gets to work quickly; remains on task	Works well as directed and generally remains on task	Slow to get started, must be supervised constantly and closely or goes off task
Attitude	Shows interest in the class; offers constructive ideas	Is generally accepting of class work and displays a positive attitude	Often brings a negative attitude to class; complains and/or goes off task
Participation	Frequently offers productive ideas; works to support the activity in class	Takes part in activities; responds when called upon	Avoids taking part in class activities; rarely contributes to class or contributes negatively
Homework	Work is always completed; excellent quality is produced; evidence of home study for exams	Complete work most of the time to an acceptable quality; some evidence of home study for exams	Frequently incomplete, showing minimal effort; rare evidence of home study for exams
Responsibility	Often shows initiative; accepts feedback willingly and takes responsibility to improve; always present for due dates, scheduled presentations, and tests	Occasionally shows initiative; responds appropriately to feedback and makes corrections as directed; some absenteeism for due dates, scheduled presentations, and tests	Rarely shows initiative; responds poorly to feedback; avoids doing remedial work; frequently absent for due dates, scheduled presentations, and tests

*** Please note that it will be class policy that if you display **satisfactory** work habits in **two** or more categories it will result in you receiving an **S** on your report card; if you display work habits that **need improvement** in **two** or more categories you will receive an **N**

Class Expectations

Class Conduct

Considerate, polite, and respectful behaviour is expected at all times towards the other students, teacher, and learning environment. You are **ALL** responsible for each other's behaviour and learning!

Attendance

Please be respectful of your classmates and teachers by arriving to class on time. If tardiness becomes habitual, your guardians will be notified and/or you will be sent to administration.

Regular attendance is **required** in a senior science course. Being in class allows you to follow the flow of the lesson and sequentially build your skills. When absent, it is **your** responsibility to find out what you missed.

If you are absent:

- Look up the notes, practice, and keys on <http://mswangscience.weebly.com>
 - Ask a classmate
 - Ask the teacher
- Flex (Room 204) Email: cwang@deltalearns.ca

Lab Conduct

You must always read and prepare a "pre-lab write up" before entering the lab. Completing the pre-lab will not only prepare you to complete the experiment, but it will allow you to think about the reasons why you are performing the lab. **Students without a completed pre-lab will not be permitted to conduct the lab activity.**

It is critical that you follow the appropriate safety procedures while conducting experiments in the lab. DO NOT wear sandals or contact lenses on lab days, eat/drink in the lab, and ensure to report any accidents to the teacher immediately!

Lab Policy

One of the most important things you can do to maximize your chances of success is to develop good work habits. You will have homework practice most nights, but the course is designed so that a significant portion of your work can be completed in class. **It is expected that you will make the most of the time you are given.**

Please respect all given due dates. This course covers a lot of material and builds skills sequentially. While I will accept late labs, any lab submitted after the due date will affect your **work habits** mark.

Opportunities to improve your mark on a lab will only be provided if the work was completed and submitted on time. All corrections must be done under the supervision of the teacher and completed during Flex within **one week** of the assignment being returned.

Quiz/Test Policy

If you know of an upcoming absence, it is **your** responsibility to notify the teacher and arrange an alternative day to complete the quiz/test. It is always preferable to complete the quiz/test **prior** to your absence; if that is not possible, it will be made up the day of the student's return to school during Flex or at the teacher's discretion.

All quizzes are considered formative and can be omitted if the test score of the same unit is higher.

Personal Technology

Cell phones, music players and other electronic devices should be turned off and kept out of sight at all times as to not impair your learning. If you require an electronic device for an activity, you will be informed in advance. Students who do not follow these guidelines will be asked to surrender their device for the remainder of the class or day, at the discretion of the teacher.

Personal technology will be collected during quizzes and tests.

Academic Integrity

Plagiarism or cheating will not be tolerated. Students who submit plagiarized work will receive a mark of zero, their guardians will be contacted, and they will be referred to administration. Plagiarism and cheating will result in the inability to rewrite an assignment

Communication

Extra help is always available. Should you require or wish to have further explanations, a meeting during Flex can be arranged. ***Please self-advocate!!***

If you have any questions or concerns, please see me in Room 204 or email me at cwang@deltalearns.ca

By signing below, this indicates that both student and parent/guardian have read, understood, and agree to the expectations outlined above for the school year:

Student's Signature: _____ Date: _____

Parent/Guardian's Signature: _____ Date: _____