

CH176 – Fundamentals of Chemistry

Fall 2012

5 Credit Hours

Instructor: Jeff Stephens

Office: TBD

Office hours: TBD

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Lecture Times: MW 10:50 - 12:05 THO 407

Lab Times: W 13:40 - 16:30 THO 408

ABOUT THIS CLASS

Three hours of lecture and three hours of laboratory per week are included. This is a study of the basic principles, laws and theories of chemistry, designed for those students needing five or more hours of general chemistry. Inorganic, important metallic and nonmetallic substances are covered. The course is recommended for certain students of agriculture, home economics, nursing, biology and general education. A physical lab is required with lecture in this course. (Offered each semester)

COURSE OBJECTIVES

1. A higher level of critical and creative thinking processes
2. The ability to solve problems using a variety of techniques and methods
3. The ability to utilize the technology relevant to the learner's discipline
4. An awareness of the world around you

EXPECTED STUDENT OUTCOMES

Students will be able to:

- 1.) Recognize the three major subatomic particles and their general arrangements in the atom.
- 2.) Identify an element from its symbol and/or provide a symbol for a given element.
- 3.) Relate the properties of the elements to their relative positions in the periodic table.
- 4.) Distinguish between ionic, covalent and polar covalent compounds.
- 5.) Create Lewis electron-dot symbols/formulas for various elements and simple molecules.
- 6.) Recognize shape and determine polarity for simple molecules.
- 7.) Distinguish between the various classes of matter and differentiate between physical and chemical properties and changes.
- 8.) Calculate the formula or molecular mass of a compound.
- 9.) Convert between mass, moles, and number of molecules of a substance.
- 10.) Perform simple stoichiometric calculations.
- 11.) Identify and balance simple chemical reaction equations.
- 12.) Predict the products of simple reactions.

ATTENDANCE/MAKEUP POLICY

It is the responsibility of the student to check his/her schedule and make any adjustments through the drop/add procedure. Students must attend classes within the certification period in order to be enrolled. State law requires the withdrawal of any student who does not attend class at least one time during this period.

Students will have five instructional days to add or drop with a full refund for a full-semester or first 8-week classes. To add a class after five days, the student must first receive written approval from the Dean of Academic Affairs and then the instructor. After 15 days students will not be allowed to add a full-semester or first 8-week class.

Students may withdraw any time after this five day period and until the date published by the Registrar's Office as the last date to withdraw, in which case a W will be recorded on their transcripts. After that time a grade of W cannot be given.

COURSE MATERIALS:

Required Text: *Introductory Chemistry*, Nivaldo J. Tro

Students are expected to attend classes. However, various sports events, the judging team, etc. will require students to miss class. If a student is absent, it is his/her responsibility to obtain the notes and any assignments.

PREREQUISITES

None.

COURSE REQUIREMENTS

Lecture Exams: 4 exams, 100 pts each

Quizzes: 10 pts each

Final Exam 200 pts

Lab Write-Ups: 20 pts each

ASSIGNMENT POLICY

All assignments must be typewritten unless otherwise indicated. All assignments are due at class time on the due date unless other arrangements are made with the instructor prior to the due date. No Exceptions! True emergencies will be discussed.

TEST POLICY

All tests, quizzes and exams must be taken the date scheduled unless arrangements are made with the instructor prior to the test date. No Exceptions! True emergencies will be discussed.

FINAL EXAMINATION

A comprehensive final exam will be scheduled according to the final schedule and cannot be altered. The final exam will be composed of one-half of the material covered since the last exam and one-half comprehensive material. Generally, the test will be (but not limited to) true and false, matching and short answer.

LABORATORY SESSIONS

Laboratory sessions meet once a week for the designated 180 minute long periods found in the line schedule, for a total of three hours in lab each week. Each lab exercise that is evaluated will be valued up to 100 points. Any biological/natural science laboratory is associated with the possibility of exposure to chemical preservatives, disinfectants and potentially pathogenic organisms. Any individual with known allergies to chemical agents, is pregnant, or immunity challenged, should consult the instructor and their physician prior to attending lab. All students are expected to attend all lab sessions. Missed Lab assignments cannot be made up. No eating, drinking, chewing or smoking is allowed in any of the labs at any time.

GRADING SYSTEM

90% - 100%	A
80% - 89%	B
70% - 79%	C
60% - 69%	D
59% and below	F

ACADEMIC DISHONESTY

Colby Community College defines academic integrity as learning that leads to the development of knowledge and/or skills without any form of cheating or plagiarism. This learning requires respect for Colby's institutional values of quality, service and integrity. All Colby Community College students, faculty, staff, and administrators are responsible for upholding academic integrity.

Cheating is giving, receiving, or using unauthorized help on individual and group academic exercises such as papers, quizzes, tests, and presentations through any delivery system in any learning environment. This includes impersonating another student, sharing content without authorization, fabricating data, and altering academic documents, including records, with or without the use of personal and college electronic devices.

Plagiarism is representing or turning in someone else's work without proper citation of the source. This includes unacknowledged paraphrase, quotation, or complete use of someone else's work in any form. It also includes citing work that is not used and taking credit for a group project without contributing to it. The following procedure will be used for students who violate the policy:

- First Offense – Student will receive a zero for the assignment and the student will be reported to the Dean of Academic Affairs.
- Second Offense – The student will be reported to the Dean of Academic Affairs and removed from the class.
- Third Offense – The student will be reported to the Dean of Academic Affairs and dismissed from the college.

Any questions about this policy may be referred to the Dean of Academic Affairs.

Access and Opportunity - Reasonable Accommodation and Institutional Standards

According to the Americans with Disabilities

Act, it is the responsibility of each student with a disability to notify the college of his/her disability and to request accommodation. If a member of the class has a documented learning

disability or a physical disability and needs special accommodations, he/she should contact Student Support Services, which is located in the Student Union.

EXTRA CREDIT

Reserved for true emergencies and at the discretion of the instructor.

LECTURE SCHEDULE Spring 2012

Week	Date (Tuesdays)	Date (Thursdays)
1		22-August Chapter 1
2	27-August Chapter 2	29-August Chapter 3
3	3-September Labor Day	5-September Exam #1 (Ch 1-3)
4	10- September Chapter 4	12-September Chapter 5
5	17-September Chapter 6	19-September Chapter 7
6	24-September Chapter 8	26-September Exam #2 (Chp 5-8)
7	1-October Chapter 9	3-October Chapter 9
8	8-October Chapter 10	10-October Chapter 10
9	15-October Chapter 11	17- October Chapter 11
10	22-October Chapter 12	24-October Exam # 3 (Ch 9-11)
11	29- October Chapter 12	31- October Chapter 12
12	5-November Chapter 13	7-November Chapter 13
13	12-November Chapter 14	14-November Exam #4 (Ch 12-14)
14	19-November Chapter 15	21-November Thanksgiving
15	26-November Chapter 16	28-November Chapter 16
16	3-December Chapter 17	5-December Chapter 17
17	Finals	Finals

LAB SCHEDULE Spring 2012

Week	Topic (Tuesday or Thursday)
2	Basic Laboratory Operations (Exp 1)
3	Identification of a Compound (Exp 2)
4	Percent Water in a Hydrated Salt (Exp 5)
5	Acids, Bases, and Salts (Exp 6)
6	Paper Chromotgraphy
7	Vinegar Analysis (Exp 10)
8	Buffers (Exp 16)
9	Antacid Anylsis (Exp 17)
11	Aspirin Synthesis (Exp 19)
12	Common Ion Effect (Exp 22)
13	Thermodynamics of the Dissolution of Borax (Exp 26)
14	Bleach Analysis (29)

Disclaimer: This syllabus is not a contract and the instructor retains the right to make changes in the course's schedule, policies and requirements as necessary so long as those changes with the policies of Colby Community College and do not affect transferability.