

## SYLLABUS

The instructor reserves the right to modify the syllabus and will notify students of such modifications.

**Instructor: Gino A. Romeo Jr., Ph.D.**

**Phone:** (928) 649-4582 **email:** [gino.romeo@yc.edu](mailto:gino.romeo@yc.edu), **Office:** Verde Building E114

**SKYPE:** gino.romeo Times are to be arranged

### CHM130 Class Schedule:

#### Lecture:

Online 1/21/2008–5/12/2009

#### Lab:

9:00AM–5:00PM – Saturdays,  
Chino Valley Campus

2275 Old Home Manor Dr., Chino Valley (928) 717-7720

[http://maps.yahoo.com/?\\_ylc=X3oDMTExNmlycG51BF9TAzI3MTYxNDkEc2VjA2ZwLWJ1dHRvbGZbGzGsDbGluaw--#mvt=m&lat=34.785981&lon=-112.424751&zoom=14&q1=2275%20Old%20Home%20Manor%20Dr%20chino%20valley%20az&q2=Prescott%20%20AZ%20United%20States](http://maps.yahoo.com/?_ylc=X3oDMTExNmlycG51BF9TAzI3MTYxNDkEc2VjA2ZwLWJ1dHRvbGZbGzGsDbGluaw--#mvt=m&lat=34.785981&lon=-112.424751&zoom=14&q1=2275%20Old%20Home%20Manor%20Dr%20chino%20valley%20az&q2=Prescott%20%20AZ%20United%20States)

**Final:** 5/4-5/12, to be taken at the campus of your choice:

**Prescott Campus Testing Services - Bldg 1 Rm 225 (928) 776-2200**

**Prescott Valley Campus Testing Services - (928) 717-7911**

**Chino Valley Center Testing Services - (928) 717-7720**

**Verde Valley Campus Testing Services - Bldg I Rm 123 (928) 634-6561**

**Course Description:** Fundamental Chemistry. Credit Hours: (4) Introduction to the study of chemistry as a basis for understanding our complicated world. Overview of classification, structure, and chemical behavior, including inorganic, organic, and biological materials.

**Prerequisite:** MAT 092 or one year of high school algebra or satisfactory score on mathematics skills assessment.

### Required Text:

Introduction to General, Organic and Biochemistry 8<sup>th</sup> edition, Bettleheim, Brown, Campbell, Farrell, Thomson-Brooks/Cole, 2007

CHM130 Lab Pack, Larry Eddy (in Blackboard)

***You need to print out the necessary experiments***

### Required Support Materials:

- Calculator with log function. Cell phones are **NOT to be USED** as calculators.
- Access to Blackboard – <http://blackboard.yc.edu>. Registration and username required for access.

### Course content:

1. The Scientific Method
2. Measurement and units of measurement.
  - a. The metric system, dimensional analysis
3. The structure, properties, and classification of matter
  - a. Atoms, isotopes, ions, elements and compounds

**SYLLABUS**

The instructor reserves the right to modify the syllabus and will notify students of such modifications.

- b. Electronic structure, and periodic properties
- c. Formulas, equations, names
4. Nuclear Radiation
  - a. Radioactivity and Radioisotopes
5. Compounds and Bonding
  - a. Ions and molecules
  - b. Ionic and covalent bonds
  - c. Geometry of molecules
6. Chemical Reactions
  - a. Writing and balancing chemical equations
  - b. Equations and the mole
  - c. Problem solving using dimensional analysis
7. Gases Liquids and Solids
  - a. Kinetic Molecular Theory
  - b. Intermolecular forces
  - c. Changes of state
8. Solutions
  - a. Concentration
  - b. Colligative properties
9. Chemical reactions and behavior
  - a. Acid -base equilibrium, pH, and buffers
10. Introductory aspects of elementary organic, and biological chemistry
  - a. Functional groups, isomers polymers, carbohydrates, lipids proteins, and enzymes
  - b. Reactions and synthesis

**Learning outcomes:**

1. Use scientific reasoning to evaluate physical and natural phenomena.
  - a. Solve chemical problems using concepts central to chemistry
  - b. Relate molecular shape and polarity to physical properties
2. Identify the unifying themes of the scientific field of study.
  - a. Use scientific vocabulary to describe chemical phenomenon.
  - b. Write equations that describe chemical change using accepted nomenclature and symbols.
  - c. Describe the major themes associated with concepts presented during the term of study.
3. Interpret the numerical and graphical presentation of scientific data.
  - a. Use data to support a conclusion or interpretation.
  - b. Use graphical data to analyze unknowns.
  - c. Draw conclusions regarding a chemical relationship using information presented on graphs.
4. Use the tools and equipment necessary for basic scientific analysis and research.
  - a. Use standard glassware and instruments to manipulate and measure chemical quantities.
5. Record the results of investigation through writing.
  - a. Complete a report sheet that documents the result of an investigation.

**SYLLABUS**

The instructor reserves the right to modify the syllabus and will notify students of such modifications.

The learning outcomes addressed are listed using the number and letter corresponding to the specific learning outcome written out previously in the **Learning Outcomes** section of the syllabus.

Topic
<p>Chapters 1:</p> <p>Course Content: Introduction, Scientific Method, Metric System, Conversion Factors, Dimensional analysis.</p> <p>Learning Outcomes: 1a, 2a, 2b, 2c, 3a, 3,b, 3c, 5a</p>
<p>Chapter. 2:</p> <p>Course Content: The structure, properties, and classification of matter. Atoms, isotopes, ions, elements and compounds. Electronic structure, and periodic properties. Formulas, equations, names.</p> <p>Learning Outcomes: 1a, 2a, 2b, 2c, 3a, 3,b, 3c, 5a</p>
<p>Chapter 3.</p> <p>Course Content: Nuclear radiation, radioactivity and radioisotopes.</p> <p>Learning Outcomes: 1a, 2a, 2b, 2c, 3a, 3,b, 3c, 5a</p>
<p>Chapter 4.</p> <p>Course Content: Compounds and bonding. Ions and molecules, ionic and covalent bonds, geometry of molecules.</p> <p>Learning Outcomes: 1a, 2a, 2b, 2c, 3a, 3,b, 3c, 5a</p>
<p>Chapter 4 continued</p>
<p>Chapter 5.</p> <p>Course Content: Chemical reactions, writing and balancing chemical equations, equations and the mole, problem solving using dimensional analysis.</p> <p>Learning Outcomes: 1a, 2a, 2b, 2c, 3a, 3,b, 3c, 5a</p>
<p>Chapter 6.</p> <p>Course Content: Gases, liquids and solids. Kinetic Molecular theory, Intermolecular forces, Changes of state</p> <p>Learning Outcomes: 1a, 2a, 2b, 2c, 3a, 3,b, 3c, 5a</p>
<p>Chapter 7.</p> <p>Course Content: Solutions, concentration and colligative properties.</p> <p>Learning Outcomes: 1a, 2a, 2b, 2c, 3a, 3,b, 3c, 5a</p>
<p>Chapter 8.</p> <p>Course Content: Chemical reactions and behavior.</p>

**SYLLABUS**

The instructor reserves the right to modify the syllabus and will notify students of such modifications.

Learning Outcomes: 1a, 2a, 2b, 2c, 3a, 3,b, 3c, 5a
Chapter 9.  Course Content: Acid-base equilibrium, pH and buffers.  Learning Outcomes: 1a, 2a, 2b, 2c, 3a, 3,b, 3c, 5a
Chapter 9. continued
Chapter 10.  Course Content: Introductory organic chemistry  Learning Outcomes: 1a, 2a, 2b, 2c, 3a, 3,b, 3c, 5a
Chapter 10 continued
Chapter 20 and 21  Course Content: Carbohydrates and Lipids.  Learning Outcomes: 1a, 2a, 2b, 2c, 3a, 3,b, 3c, 5a
Chapter 22 and 23  Course Content: Proteins and Enzymes  Learning Outcomes: 1a, 2a, 2b, 2c, 3a, 3,b, 3c, 5a

**ONLINE COMPONENT**

*Difficulties with technology are acceptable excuses...*

**Quizzes**

- **1 Hour**
- Availability – **Now** until cut-off dates

Quiz	Cutoff Date (11:55pm)
Syllabus Quiz	1/26
1	2/1
2	2/8
3	2/15
4	2/22
5	3/1
6	3/8
7	3/15
8	3/22
9	3/29
10	4/5
11	4/12

**SYLLABUS**

The instructor reserves the right to modify the syllabus and will notify students of such modifications.

12	4/19
13	4/26
14	5/3
15	5/10

Late penalty: One point per day per quiz. A day ranges from a second within a 24 hour period to a complete 24 hours. Quiz 15 cannot be taken late.

**Online Discussion Topics\***

	<b>Discussion</b>	<b>Dates Available</b>
1	Intro & Scientific Discoveries	1/21-2/22
2	Nuclear etc.	2/23-3/22
3	The flu shot	3/23-4/19
4	Cholesterol Meds	4/20-5/10

\*For grading criteria, see the discussion grading rubric in Blackboard.

**Practice Problems (Not Graded) – Look in Course Documents**

**LABORATORY COMPONENT – No Late Work, nor Make-up labs**

**Labs:** At the Chino campus

**Lab write-ups:** One per group of two students.  
To be handed in at the end of the lab session.

**Lab Quizzes:**

- Up to 10 questions
- Covers the lab session
- Will be taken at the end of each lab session (i.e. Saturday)
- You are allowed to use your lab write-ups and notes when taking the quiz

**LAB Attendance Policy\***

**LATE /EARLY LEAVE/ABSENT POLICY: YOU WILL RECEIVE A SCORE OF “0” FOR YOUR HIGHEST QUIZ SCORE UPON YOUR COMBINED SECOND LATE ARRIVAL, EARLY LEAVE AND ABSENCE\***

Late arrival: 10 minutes after scheduled time

- It is expected that you attend classes regularly and that you fully participate in class.
- You must be present in the laboratory and actively participating in the experiment and data analysis.

**Labs Scheduled for CHM 130 Spring 2009  
At the Chino Campus**

Date:	Time:	Labs Covered
2/7	9:00 AM to 5:00 PM	1. Measurement in Laboratory, pg. 7

**SYLLABUS**

The instructor reserves the right to modify the syllabus and will notify students of such modifications.

		2. Mathematical Operations, pg. 13 3. Density of a Liquid, pg. 19
3/7	9:00 AM to 5:00 PM	1. Inorganic Nomenclature, pg. 25 2. Radioactivity (in Blackboard) 3. Lewis Structures (in Blackboard)
4/4	9:00 AM to 5:00 PM	1. Double Displacement Reactions, (handout) 2. Osmotic Eggs, pg. 51 3. LeChatelier's Principle (handout)
5/2	9:00 AM to 5:00 PM	4. Dumas Gas Experiment (handout) 5. Buffers (in Blackboard) 6. Preparation of Soap, pg. 67

During the course of the laboratory experiments students will use all of the concepts listed in the **Learning Outcomes** portion of the syllabus to successfully complete the lab.

\*\*\*\*\*

**FINAL EXAM:** Comprehensive final, CLOSED-BOOK, with formulas (200 pts).

**The Final Exam must be taken. If you score lower than 65% on the final you will receive an "F" for the course.** The final will be taken at the campus testing center of the student's choice (Prescott, Prescott Valley, Chino Valley or Verde Valley campuses) during the last week of the course, **5/4-5/12**. The student is responsible for scheduling a time to take the test during the operating hours of the testing center.

**Prescott Campus Testing Services - Bldg 1 Rm 225 (928) 776-2200**

**Prescott Valley Campus Testing Services - (928) 717-7911**

**Chino Valley Center Testing Services - (928) 717-7720**

**Verde Valley Campus Testing Services - Bldg I Rm 123 (928) 634-6561**

**ABSENCES:** There are no make-ups labs or make-up Final Exam.

There is no extra credit work in this course

**Grade Breakdown:** Points may be adjusted to ensure your lab grade is at least 20% of your grade

	Amount	Points Per	Total Points	Percentage
<b>Syllabus Quiz</b>	1	20	20	2
<b>Pre Assessment*</b>	1	25	25	2
<b>Online Chapter Quiz</b>	15	25	375	33
<b>Discussion</b>	4	40	160	14
<b>Lab Write-up</b>	10	20	200	17
<b>Lab Quiz</b>	4	30	120	10
<b>Final Exam</b>	1	250	250	22

**SYLLABUS**

The instructor reserves the right to modify the syllabus and will notify students of such modifications.

\*Regardless of the amount correct, you will receive 25 points for your effort.

<sup>1</sup>Less than 65% on Final equals F for the course <sup>2</sup>Less than 70% on Lab total equals F for the course  
100 - 90% A, 89 - 80% B, 79 - 65% C, 64 - 50% D, < 50% F

There is no extra credit work in this course

**Cell Phone Policy**

3 points will deducted from your grade each time your cell phone rings in class, during class. No phone conversations during in class, during class

**Classroom Behavior**

You will be removed from class (for the day) if I believe you're disrupting the learning environment.

**Headphones**

No headphones/ear pieces are to be worn during an exam or quiz during class.

**Academic Integrity:** Honesty in academic work is a central element of the learning environment. The presentation of another individual's work as one's own or the act of seeking unfair academic advantage through cheating, plagiarism or other dishonest means are violations of the College's "Student Code of Conduct." Definitions of plagiarism, cheating, and violation of copyright and penalties for violation are available on the YC website, see <http://www2.yc.edu/content/registration/integrity.htm>. Plagiarism will not be tolerated and may be reported to the Office of Judicial Affairs.

**Student Code of Conduct:** Respect for the rights of others and for the College and its property are fundamental expectations for every student. The "Student Code of Conduct" outlines behavioral expectations, and explains the process for responding to allegations of student misconduct.

**Satisfactory/Unsatisfactory Grades and Withdrawals – Up to week before last day**

The "S" grade is defined as equivalent to a grade of "C" or better on the conventional grading scale of A-F. A course completed with an "S" grade indicates appropriate subject area knowledge to satisfy the prerequisite requirement of a related higher-level course.

Specified courses are graded only S/U. Students in other course who prefer the S/U grading option must notify the class instructor. Conditions of Satisfactory/Unsatisfactory (S/U) grading:

- Since some college and universities limit the number of credits completed with S/U grading that will transfer, or restrict the way that such credits may be applied to degree
- requirements, it is recommended that students preparing to transfer select the S/U grading option only for elective courses.
- A maximum of twelve (12) hours of "S" credit from 100- and 200-level courses may be applied toward Yavapai College graduation requirements.
- S/U grading is not an option for courses applied to the Arizona General Education Curriculum (AGEC).
- S/U grades are not computed in the students' Yavapai College grade point average.

**Grade of Incomplete (I) will not be awarded.**

**Student Support Services and Resources:**

**SYLLABUS**

The instructor reserves the right to modify the syllabus and will notify students of such modifications.

**Disability Support Services:** Yavapai College is committed to providing educational support services to students with documented disabilities. Academic support services or accommodations for mobility-impaired students must be arranged through Student Support Services (Prescott Campus: 928-776-2079).

**Learning Resource Centers:** A Learning Resource Center is available at the Prescott and Verde Valley Campuses

**Library:** Library services are available at the Prescott Campus and the Verde Valley Campus libraries. Both libraries are members of a countywide library network, which provides access to a wide-range of information and resources at libraries throughout Yavapai County. Possession of a College library card entitles students to access materials housed at member libraries. Instructors may place required course materials on reserve in the library or make assignments that require the use of library resources.