

SYLLABUS

CHE K111: CONCEPTS OF CHEMISTRY
THREE RIVERS COMMUNITY COLLEGE
NORWICH, CONNECTICUT 06360

Ram Prasad Neupane, Instructor of Chemistry

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Office Hours:

Day	Time	Time
Monday	11:00 am – 12:00 pm	3:30 pm – 4:30 pm
Tuesday	2:00 pm – 3:30 pm	
Wednesday	11:00 am – 12:00 pm	
Thursday		
Friday		

******Special Notice******

If you have a visible or hidden disability which may require classroom, lab and/or test-taking modifications, please see me as soon as possible. If you have not registered with Chris Scarborough, learning specialist or a counselor in the Student Services Development Center, you must do so early in the semester.

Spring 2009

I. COURSE INFORMATION

Course Title/Number: Concepts of Chemistry/CHE K111

Credits: 4 (3 hrs. lecture/ 3 hrs. laboratory)

Textbook: Fundamentals of Chemistry, Ralph A. Burns (4th ed.)

Other required materials: Laboratory goggles (chemical safe), a calculator, and a three-hole folder

Description of the Course

A. Catalogue Description

A brief and comprehensive survey of the important theories and some of the applications of chemistry. Topics to be covered will include: the physical states of matter and their characteristics, measurements in chemistry, atomic structure, chemical bonding, chemical reactions and reaction rates, stoichiometry, gases and the gas laws, theories of solutions, and basic organic and biochemical concepts.

Course Design: CHE 111 is intended for students with little or no background in chemistry, who need this course as a prerequisite for General College Chemistry (CHE 121) or Higher, or as a pre-admission requirement for nursing or other allied health programs, or to meet the lab science requirement for Technical or LAS programs of study.

Prerequisites: Successful completion of ENG 100 with a C grade or higher, or placement score indicating eligibility to take English 101 and successful completion of Math 137 Intermediate Algebra with a (C grade or better).

B. General Course Objectives

1. Students will be able to understand that there are chemicals in various forms everywhere and we use them everyday in our lives one way or the other. They will also recognize the benefits and harms associated with various chemicals.
2. Students will learn how to read the periodic table and interpret the meanings of various chemical symbols.
3. Students will learn about the quantities and units associated with chemistry and use basic mathematical operations to gain an understanding of what those quantities mean. They will then use this knowledge to interpret information given in household products, such as Calories in food items.
4. Students will learn about the chemicals in living beings (such as carbohydrates, proteins, and lipids) and understand how they affect various processes and functions.
5. Students will explain concepts such as global warming, greenhouse effect, energy crisis in chemical terms and think critically and evaluate the role chemistry plays in solving these serious and important global issues.

6. Students will demonstrate an understanding of other basic chemical concepts and utilize the knowledge in higher level chemistry courses and in related allied health fields.

II. POLICIES

Class Attendance Policy

Attendance of all class activities in lecture and laboratory is required.

5% of the overall grade is also based on the attendance of lecture and laboratory periods. Two absences are permitted over the course of the semester and these two absences will not result in deduction of points from the attendance score. However, the third absence and beyond will directly impact the attendance score, unless there is a clear documentation that shows that the absence was caused because of some emergency.

Academic and Classroom Misconduct

1. The instructor has primary responsibility for control over classroom and/or laboratory behavior and maintenance of academic integrity, and can request the temporary removal or exclusion from the classroom or laboratory of any student engaged in conduct that:

a) violates the general rules and regulations of the institution.

b) is deemed hazardous in the laboratory.

2. Extended or permanent exclusion from lecture or laboratory activities or further disciplinary action can only be effected through appropriate procedures of the institution.

3. Plagiarism, cheating on quizzes or tests, or any form of academic dishonesty is strictly prohibited. Students guilty of academic dishonesty directly or indirectly will receive a zero for the exercise, quiz or test and may receive an F grade for the course in addition to other possible disciplinary sanctions which may be imposed through the regular institutional procedures.

4. Any student that believes that he or she has been erroneously accused may appeal the case through the appropriate institutional procedures if their grade was affected.

College's Withdrawal Policy

Any student who finds it necessary to discontinue this course **MUST** complete a withdrawal form in the Registrar's Office at the time of the withdrawal. If you can not withdraw in person you may call the Registrar's Office and provide them with the appropriate information.

Students may withdraw from the course anytime during the first 14 weeks of class, **without** written authorization from the instructor or their academic advisor.

Once you withdraw from class you are no longer eligible to continue attending class and/or take any remaining quizzes or test.

Students who do not withdraw, but stop attending will be assigned an **F** grade in this course. Verbal withdrawals **CANNOT** be accepted.

III. EXAMS AND QUIZZES

There will be a total of **9 quizzes, 3 unit exams and a final exam** for this course.

The two lowest quiz scores will be dropped.

The dates for the quizzes (given in the first ten minutes of the class), the unit tests, and the final exam are as follows:

Quiz 1: February 02

Quiz 2: February 11

Quiz 3: February 23

EXAM 1: March 02

Quiz 4: March 09

Quiz 5: March 25

Quiz 6: April 06

EXAM 2: April 13

Quiz 7: April 22

Quiz 8: April 29

Quiz 9: May 06

EXAM 3: May 13

FINAL EXAM: May 20

Additionally, there are two laboratory exams. The laboratory exams (practicals) will be given on the following dates:

Laboratory Exam 1: March 10

Laboratory Exam 2: May 12

IV. GRADING

There are five components toward the final grade for this course. Their contributions are listed in the parentheses:

1. Semester Average (50%)

The semester average is the average score of the three exams (100 points each) and the adjusted quiz score. The adjusted quiz score is the sum of the best seven quizzes, scaled to a maximum score of 100.

2. Laboratory Average (15%)

The laboratory average is the average score of all the laboratory reports and the two laboratory exams.

3. Homework (10%)

Homework will be assigned often during the semester and graded.

4. Attendance (5%)

Absence from a maximum two lecture periods is allowed. Any additional absences will lower your score.

5. Final Exam (20%)

The final exam will be cumulative.

Select students may be exempt from taking the final exam. This provision is contingent upon the students meeting the following requirements:

- 100% attendance throughout the semester
- score of 90% or higher in each of the top seven quizzes
- score of 90% or higher in each of the exams and laboratory reports
- a cumulative average of 95% or higher
- discretion of the instructor

Grading Scale (tentative)

A: 100-93.50	C: 77.49-73.50
A-: 93.49-90.00	C-: 73.49-70.00
B+: 89.99-87.50	D+: 69.99-67.50
B: 87.49-83.50	D: 67.49-63.50
B-: 83.49-80.00	D-: 63.49-60.00
C+: 79.99-77.50	F: 59.99 and below

V. MAKE-UP POLICY

1. There will be no make-ups for any of the quizzes, since there is a provision for the two lowest quizzes to be dropped from your final score.
2. There will also be no make-up exams (including the final exam) unless a documented emergency prohibits you from taking the exam. In such cases, the make-up exam will be scheduled after a consultation between the instructor and the student.

VI. MISCELLANEOUS

Revisions to the Syllabus

The instructor may make revisions to the syllabus at any time during the semester. If a revision has been made, the students will be notified of the change in exam dates, change of deadlines, and change in material to be covered.

Class Etiquette

Cellular phones and beepers are only allowed in class or lab if they are turned off or in silent mode. Under no circumstances are phones to be answered in class. When there are extenuating circumstances that require that a student be available by phone or beeper, that student must speak to the instructor prior to class, so that together they can arrive at an agreement.

VII. LEARNING GOALS

1. The student will develop “critical thinking skills” and will learn to derive sound scientific conclusions by analyzing scientific data.
2. The student will demonstrate knowledge of the scientific method through examples.
3. The student will be able to define science.
4. The student will be able to define chemistry, list and describe the various branches of chemistry.
5. The student will be able to define matter.
6. The student will be able to identify the three physical states of matter and describe their basic characteristics.
7. The student will be able to distinguish between homogenous and heterogeneous matter.
8. The student will be able to explain the difference between pure substances, solutions, homogeneous mixtures, and heterogeneous mixtures.
9. The student will learn the laws of conservation of energy and mass, and explain the interrelationship between these two laws.
10. The student will learn the division of elements into metals and non-metals and will be able to describe their chemical and physical properties.
11. The student will learn the rules for identifying significant digits.
12. The student will learn the correct use of significant digits in basic mathematical operations.
13. The student will learn the metric system of measurements and its application in science.
14. The student will be able to make conversions within the metric system.
15. The student will be able to convert metric units to English units and vice versa.
16. The student will learn the basic measures of matter.
17. The student will learn the correct procedures for measuring mass (weight).
18. The student will learn the correct procedures for measuring volume.
19. The student will be able to define and/or describe the distinguishing characteristics of the following terms: mass, weight, energy, calorie, joule, Newton of force, specific heat, density, and specific gravity.
20. The student will be able to define the term atom, describe the structure of an atom and give the general characteristics of atoms.
21. The student will be able to name the subatomic particles, explain their unique characteristics, and describe the arrangement of these particles in an atom.
22. The student will be able to define the term isotope and explain how isotopes differ from each other.
23. The student will be able to describe the unique characteristics of natural radioactive isotopes.
24. The student will be able to understand the principal energy levels and their electron capacities in relationship to the Quantum Mathematical Model.
25. The student will be able to demonstrate the arrangement of electrons in the principle energy levels, the arrangement of electrons in the sub-levels and the arrangement of electrons in the suborbitals.
26. The student will be able to explain what is meant by valence electrons.

27. The student will be able to explain ionic charge, valence, and oxidation numbers.
28. The student will be able to explain electron arrangement as it relates to chemical bonding (ionic and covalent).
29. The student will be able to define terms, ions (cation and anion), molecules and compounds.
30. The student will learn to write chemical formulas for compounds.
31. The student will be able to understand the structure of some representative compounds.
32. The student will learn the general characteristics of the series and groups of elements in the periodic table.
33. The student will learn how to use the periodic table of elements as one of the tools for studying chemistry.
34. The student will learn the scientific methods for naming inorganic compounds.
35. The student will learn to calculate formula weights of elements, ions, molecules and compounds.
36. The student will learn to calculate the molar masses of elements, ions, molecules and compounds.
37. The student will learn to calculate the percent composition of each element in a compound.
38. The student will learn to calculate the empirical formula for compounds.
39. The student will learn the basic concepts of chemical equations.
40. The student will learn the terms and symbols used in writing a chemical equation, as well as their meanings.
41. The student will learn the guidelines for balancing chemical equations.
42. The student will be able to write and balance chemical equations.
43. The student will be able to do simple calculations involving chemical equations (Stoichiometry).
44. The student will be able to demonstrate knowledge of the unique characteristics of gases and the gas laws.
45. The student will be able to perform calculations involving the gas laws.
46. The student will demonstrate knowledge of the characteristics of water and other liquids.
47. The student will demonstrate knowledge of the characteristics of solids.
48. The student will be able to define the term solution, identify and give the characteristics of different types of solutions.
49. The student will be able to explain solubility and list factors that affect solubility, as well as, factors that affect the rate of solubility.
50. The student will be able to explain the difference between saturated, unsaturated and supersaturated solutions.
51. The student will be able perform calculations involving solutions (percent mass, molal, molar, normal).
52. The student will be able to give various definitions of acids and bases, and explain their properties.
53. The student will be able to define pH.
54. The student will be able to define the term buffer and explain the process of neutralization.
55. The student will be able to distinguish between electrolytes and non-electrolytes.
56. The student will be able to understand oxidation-reduction reactions and balance Redox equations.
57. The student will be able to understand reaction rates and chemical equilibrium.
58. The student will be able to define organic chemistry.
59. The student will be able to give the chemical composition and the basic characteristics of carbohydrates, lipids, proteins, nucleic acids and vitamins.
60. The student will be able to define the following terms: metabolism, anabolism and catabolism.
61. The student will learn the basic biochemical mechanisms of photosynthesis, DNA and RNA synthesis, protein synthesis, and cellular respiration.
62. The student will learn the characteristics and classification of the major groups of hydrocarbons.
63. The student will learn the IUPAC system for naming hydrocarbons.
64. The student will learn the chemical composition of some of the derivatives of the hydrocarbons.

Course Outline for Chemistry K111 - Concepts of Chemistry

UNIT I

1. Introduction

- A) What is Science?
- B) The Scientific Method
- C) Chemistry
- D) Branches of Chemistry
 - i. Inorganic
 - ii. Organic
 - iii. Analytical
 - iv. Physical
 - v. Biochemistry

2. Matter and Energy

- A) Definition of Matter
- B) Physical States of Matter
 - i. Solids
 - ii. Liquids
 - iii. Gases
- C) Divisions of Matter
 - i. Homogeneous matter
 - a) Pure substance
 - b) Solution
 - c) Homogeneous mixture
 - ii. Heterogeneous matter (mixture)
- D) Definition of Energy
- E) Forms of Energy
 - i. Potential
 - ii. Kinetic
- F) Types or Kinds of Energy
 - i. Solar or light
 - ii. Radiation
 - iii. Electrical
 - iv. Chemical
 - v. Mechanical
 - vi. Heat
 - a) endothermal
 - b) exothermal
- G) Law of Conservation of Energy
- H) Law of Conservation of Mass
- I) Energy – Mass Relationship
- J) Elements
 - i. Definition
 - ii. Composition
 - iii. Division of the elements (metals and nonmetals)
 - a) physical properties
 - b) chemical properties

3. Measurements

- A) Significant Digits
- B) Mathematical Operations Involving Measurements and Significant Digits
- C) Mass and Weight
 - i. Definitions
 - ii. Measurements
- D) Quantitative Measurements of Matter
 - i. Mass (Weight)
 - ii. Volume
 - iii. Linear (Area)
- E) Metric System
 - i. Standard units
 - a) Gram for Mass
 - b) Liter for Volume
 - c) Meter for Length
 - ii. Prefixes and their meanings
 - a) mega
 - b) kilo
 - c) hecto
 - d) deca
 - e) deci
 - f) centi
 - g) milli
 - h) micro
 - iii. Conversions within the metric system
 - iv. English to Metric conversions and Metric to English conversions.
 - v. Energy
 - vi. Heat Energy(Temperature measurements)
 - a) calorie
 - b) joule
 - vii. Temperature scales
 - a) Fahrenheit scale - °F
 - b) Celsius scale - °C
 - c) Kelvin scale - °K
 - viii. Conversions within the temperature scales
 - a) Fahrenheit to Celsius
 - b) Celsius to Fahrenheit
 - c) Celsius to Kelvin
 - d) Kelvin to Celsius
- F) Specific Heat
- G) Density
- H) Specific Gravity

4. The Atom

- A) Definition
- B) Atomic Theories

- C) Subatomic Particles
 - i. Electrons

- ii. Protons
- iii. Neutrons
- D) Atomic Number
- E) Atomic Mass or Atomic Weight
- F) Isotopes
 - i. Definition
 - ii. Natural radioactive particles
 - a) Alpha
 - b) Beta
 - c) Gamma
- G) Electron Configuration and Distribution
 - i. Principal energy levels and their capacities
 - ii. Sublevels and their capacities
 - iii. Suborbitals and their capacities
 - iv. The arrangements of electrons in the principal energy levels and sublevels
 - v. The arrangement of electrons in the suborbitals – the order of filling
 - vi. The electron dot method
- H) Electron Arrangement versus Reactivity
 - i. Ions – cations, anions, - ionic charge and valence
 - ii. Oxidation Numbers
 - iii. Chemical Bonding
 - a) Ionic or electrovalent bonds
 - b) Covalent bonds
 - polar
 - non-polar
 - iv. Molecules and Compounds
 - v. Writing Chemical Formulas
 - a) Rules for writing chemical formulas
 - b) Chemical symbols and subscripts

UNIT II

5. The Periodic Classification of the Elements

- A) The Periodic Law
- B) The Periodic Table of Elements
 - i. Periods or series
 - ii. Groups or families
 - iii. Metals
 - iv. Nonmetals
- C) General Characteristics of the Groups
- D) General Characteristics of the Periods
- E) The use of the Periodic Table

6. Chemical Nomenclature of Inorganic Compounds

- A) Systemic Chemicals Names
 - i. Binary Compounds
 - a) inorganic compounds combining metals with a **fixed** oxidation number with a nonmetal
 - b) inorganic compounds combining metals with **variable** oxidation numbers with a nonmetal

- c) inorganic compounds combining two nonmetals
 - d) Greek prefixes and their meanings
 - mono
 - di or bi
 - tri
 - tetra
 - penta
 - hexa
 - hepta
 - octa
 - ennea
 - deca
 - ii. Ternary and Higher Compounds
 - a) polyatomic ions
 - b) oxyanions (ate or ite endings)
 - iii. Naming bases
 - iv. Naming acids
 - a) binary acids
 - b) ternary acids
- B) Common Names of Some Compounds

7. Calculations Involving Elements and Compounds

- A) Calculation of Formula Weights
 - i. Formula Mass
 - ii. Molecular Mass
- B) Avogadro's Number
- C) The Mole
- D) Calculating Molar Masses
- E) Conversions From Moles to Grams and Grams to Moles
- F) Molar Volume of Gases
- G) Conversions From Moles to Liters and Liters to Moles
- H) Simple Calculations – Percent Composition of Compounds
- I) Calculation of Empirical and Molecular Formulas

8. Chemical Equations

- A) What is a Chemical Equation?
- B) Definition of Terms
 - i. Reactants
 - ii. Products
 - iii. Catalyst
- C) Symbols and Their Meanings
 - i. Single arrow pointing from left to right
 - ii. Double arrows pointing in opposite directions
 - iii. Equal sign
 - iv. Arrow pointing upward
 - v. Arrow pointing downward
 - vi. Plus (+) sign
 - vii. Delta sign above or below the directional arrow
 - viii. Chemical symbol(s) above or below the directional arrow

- ix. States (g, l, s, aq.)
- D) Rules for Balancing Chemical Equations
- E) Balancing Chemical Equations
 - i. Composition reactions
 - ii. Decomposition reactions
 - iii. Single or double replacement reactions
- F) Predicting the Product(s) and Balancing the Chemical Equation
- G) Writing and Balancing Word Equations

9. Stoichiometry – Calculations Involving Chemical Equations

- A) Three Basic Steps for Solving Stoichiometry Problems the Mole Method
- B) Types of Stoichiometry Problems
 - i. Mass – Mass
 - ii. Mass – Volume / Volume – Mass
 - iii. Volume – Volume

10. Gases

- A) Basic Characteristics of Gases
- B) The Kinetic Theory
- C) The Gas Laws
 - i. Boyle's law
 - ii. Charles' law
 - iii. Gay-Lussac's law
 - iv. The combined gas law
 - v. The ideal gas law
 - vi. Dalton's law of the partial pressure of gases
 - vii. Henry's law
 - viii. Problem solving related to the gas laws

11. Water and Other Liquids

- A) Water
 - i. Basic characteristics
 - ii. Chemical properties
 - iii. Physical properties
 - iv. Hydrates
 - v. Hydrogen peroxide
- B) Liquids
 - i. Basic characteristics
 - ii. Evaporation
 - iii. Vapor pressure
 - iv. Boiling points
 - v. Distillation

12. Solids

- A) Basic Characteristics
- B) Structural Forms
 - i. Crystalline solids
 - ii. Amorphous solids
- C) Melting or Freezing Points

- D) Boiling Points
- E) Sublimation

UNIT III

13. Solutions

- A) Definition
- B) Components of a Solution
- C) Solubility and Factors Affecting Solubility
 - i. Chemical properties of the solute and the solvent
 - ii. Temperature
 - iii. Pressure
- D) Factors Affecting the Rate of Solubility
 - i. Temperature
 - ii. Stirring
 - iii. Particle size
- E) Concentrations of the Solute in Solutions
 - i. Saturated
 - ii. Unsaturated
 - iii. Supersaturated
- F) Types of Solutions and Their Basic Characteristics
 - i. True solution
 - ii. Emulsion
 - iii. Suspension
 - iv. Colloidal
- G) Calculations Involving Solutions
 - i. Percent by mass
 - ii. Molality
 - iii. Molarity
 - iv. Normality

14. Acids, Bases, and Ionic Equations

- A) Definition(s) of Acids
- B) The Properties of Acids
- C) The Properties of Bases
- D) pH and pH Values
- E) Buffers and Neutralization
- F) Methods of Neutralization – Titration
- G) Ionization
- H) Electrolytes and Non-electrolytes
- I) Writing Compounds in Ionic Form
- J) Rules for Writing Ionic Equations

15. Oxidation and Reduction

- A) Definitions
- B) Oxidizing and Reducing Agents
- C) Energy Cells
 - i. Electrolytic
 - ii. Voltaic (Galvanic)

- iii. Practical
 - a) dry cells
- D) Writing and Balancing Oxidation – Reduction Equations
 - i. The Oxidation Number Method
 - ii. The Ion Electron Method

16. Reaction Rates and Chemical Equilibrium

- A) The Law of Mass Action
- B) Factors Affecting Reaction Rates
 - i. The nature of the reactants
 - ii. The concentration of the reactants
 - iii. Temperature
 - iv. Catalyst
- C) Chemical Equilibrium
 - i. Irreversible reactions
 - ii. Reversible reactions
- D) Principles of Chemical Equilibrium
 - i. LeChatelier's principle
 - ii. Weak electrolyte equilibrium principle
 - iii. Solubility product equilibrium principle

17. Concepts of Organic and Biochemistry

- A) Definitions and Basic Characteristics
- B) The Major Classes of Organic Compounds in Living Systems, Their Composition and Their Biological Usage's
 - i. Carbohydrates
 - ii. Lipids
 - iii. Proteins
 - iv. Nucleic acids
 - a) DNA
 - b) RNA
 - v. Vitamins
- C) Metabolism
 - i. Anabolism
 - ii. Catabolism
- D) Enzymes
- E) Biosynthesis
 - i. Photosynthesis
 - ii. Cellular respiration
 - a) glycolysis
 - b) Kreb's cycle
 - c) the electron transport system
 - iii. Anaerobic metabolism – fermentation
 - iv. DNA synthesis
 - v. Protein synthesis
 - a) transcription
 - b) translation
- F) Hydrocarbon
 - i. Chemical composition
 - ii. Divisions of hydrocarbons

- iii. Classification and unique characteristics of the aliphatic hydrocarbons
 - a) alkanes
 - b) alkenes
 - c) alkynes
- iv. The IUPAC system for naming the aliphatic hydrocarbons
- v. Aromatic hydrocarbons
- vi. Derivatives of hydrocarbons
 - a) alcohols
 - b) phenols
 - c) ethers
 - d) esters
 - e) ketones
 - f) carboxylic acids
 - g) aldehydes
 - h) amides
 - i) amines
 - j) organic halides

Tentative: ACADEMIC SCHEDULE

CHE 111 CONCEPTS OF CHEMISTRY

Lecture: 9:30am – 10:55am / Monday (M) and Wednesday (W) Room D126

Lab: 9:30am – 12:25pm Tuesday (T) Room B216

Spring 2009

Ram P. Neupane, Instructor

WEEK – DATE *** LESSON(S) *******

1 01/19 No Class – Martin Luther King Day

1 01/21 Orientation(Review syllabus) / Scientific Method / Required reading
– Chapters 1 & 2

2 01/26 Chemistry, Matter & Energy – Required reading – Chapter 2

2 01/28 Matter & Energy – Required reading – Chapter 2
Measurements in Chemistry – Required reading – Chapter 3

3 02/02 Quiz 1 / Measurements in Chemistry – Required reading – Chapter 3

3 02/04 Measurements in Chemistry – Required reading – Chapter 3

4 02/09 Atoms, Elements, Molecules & Compounds – Required reading –
Chapters 4 & 18

4 02/11 Quiz 2 / Atoms, Elements, Molecule & Compounds cont'd / Electrons
and Principal Energy Levels – Required reading – Chapter 5

5 02/16 **HOLIDAY**

5 02/18 Electrons Arrangement – Required reading – Chapter 5

6 02/23 Quiz 3 / Electron Arrangement –Required reading – Chapter 5
Chemical Bonding – Required reading – Chapter 8

6 02/25 Chemical Bonding & Writing Chemical Formulas – Required reading
Chapter 8

WEEK – DATE *** LESSON(S) *******

7	03/02	***** <i>UNIT TEST 1</i> *****
7	03/04	The Periodic Table – Required reading – Chapter 7

8	03/09	The Periodic Table – Required reading – Chapter 7 / <u>Quiz 4</u>
8	03/11	The Periodic Table cont'd / Naming inorganic compounds – Required reading – Chapter 6

9	03/16	SPRING BREAK
9	03/18	SPRING BREAK

10	03/23	Naming inorganic compounds cont'd / Calculation of Formula Weight (Molar mass & Molecular mass)-Required reading – Chapters 4 & 9
10	03/25	<u>Quiz 5</u> / Calculations: Formulas Weight, Moles, Percent Composition, and Empirical Formulas – Required reading Chapters 4 & 9

11	03/30	Chemical Equations – Required reading – Chapter 10
11	04/01	Stoichiometry – Required reading – Chapter 11

12	04/06	<u>Quiz 6</u> / Gases and the Gas Laws – Required reading – Chapter 12
12	04/08	Liquids(Water) & Solids – Required reading – Chapter 13

13	04/13	***** <i>UNIT TEST 2</i> *****
13	04/15	Solutions – Required reading – Chapter 14

WEEK – DATE ***LESSON(S) *******

14 04/20 Solutions - Required reading – Chapter 14

14 04/22 *Quiz 7/ Acids, Bases, Electrolytes, Ionization and Ionic Equation*
Required reading – Chapters 16 & 17

15 04/27 Oxidation-Reduction Reactions/Reaction Rates and Chemical
Equilibrium – Required reading – Chapters 15, 16 & 17

15 04/29 *Quiz 8 / Organic Chemistry* – Required reading – Chapter 20

16 05/04 Organic Chemistry/Biochemical processes –Required reading – Chp. 20

16 05/06 *Quiz 9 / Bio-chemistry cont'd*

17 05/11 Hydrocarbons – Required reading Chapter 19

17 05/13 ***** *UNIT TEST 3* *****

18 05/18 Review the third exam and explain the final exam process

18 05/20 **FINAL EXAM** - 09:30am – 12:30pm

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CHE 111 LABORATORY SCHEDULE – ROOM B216 – SPRING 2009

9:30am – 12:30pm Tuesdays

WEEK – DATE(S) – ***LESSON(S) *******

1	01/27	Lab Procedures, Safety & Equipment
2	02/03	Measurements in Chemistry
3	02/10	Percent of Water in a Hydrate
4	02/17	Properties of Chemical Substances/Physical or Chemical Changes
5	02/24	Atoms, Molecular Bonds, & Writing Chemical Formulas
6	03/03	***** LAB PRACTICAL 1 *****
7	03/10	Qualitative Analysis & Quantitative Analysis (Chemical Formulas)
8	03/24	Stoichiometry (Mass – Mass) Acid/Base reaction
9	03/31	<i>PROBLEM SOLVING SESSION I</i>
10	04/07	<i>PROBLEM SOLVING SESSION II</i>
11	04/14	Solutions
12	04/21	Acids / Bases – Titration - Electrolytes
13	04/28	OPEN
14	05/05	Organic / Bio - Chemistry
15	05/12	***** LAB PRACTICAL 2 *****
