El Paso Community College
Syllabus
Part II
Official Course Description

SUBJECT AREA	**Chemistry**
COURSE RUBRIC AND NUMBER	**CHEM 1311**
COURSE TITLE	**General Chemistry I**
COURSE CREDIT HOURS	**3 3 0** **Credits Lec Lab**

I. Catalog Description:

Provides a sound foundation for advanced work in the natural sciences. Covers the quantitative aspects of the laws of chemistry and the behavior of chemical substances, atomic structure and chemical bonding, stoichiometry of chemical reactions, enthalpy changes, and the nature of solids, liquids, and gases. Requires one year of high school algebra, or MATH 0303 and one year of high school chemistry. **Prerequisites: INRW 0311 or ESOL 0340 (can be taken concurrently) or by placement exam or ENGL 1301 with a "C" or better or ENGL 1302 with a "C" or better and MATH 1314. Corequisite: CHEM 1111. (3:0).**

II. Course Objectives:

Upon satisfactory completion of this course, the student will be able to:

A. Engage in **critical thinking skills**, creative thinking, innovation and inquiry; demonstrate analysis, evaluation, and synthesis of information.

B. Demonstrate effective written, oral, and/or visual **communication skills**.

C. Demonstrate **teamwork skills** including the ability to consider different points of view, work effectively with others to support a shared purpose or goal, and integrate peer responses and instructor suggestions into the revision process.

D. Students will demonstrate the ability to formulate an inquiry and then identify and follow an investigative process using **empirical and/or qualitative/quantitative skills** and reasoning to satisfy the inquiry.

E. Convert units, mathematically, from the metric system to the British system and vice versa. Distinguish among elements, mixtures and compounds. Distinguish among the laws of chemistry, i.e. Law of Definite Proportions, Law of Multiple Proportions, etc.

F. Distinguish between atoms and molecules. Write and balance chemical formula for compounds. Name chemical compounds from the chemical formula. Determine atomic, molecular and formula weights of elements and compounds. Calculate the percent composition of elements in compounds. Engage in molar conversions. Write and balance chemical equations, predict products in equation Writing and calculate stoichiometric applications.

G. Solve problems involving gas laws and their applications. The pressure – volume; the temperature– volume; and the pressure- temperature relationships. Apply thermodynamics to problems involving energy changes. Calculate Standard Enthalpy of reactions using Hesse's Law and standard Enthalpy of formations. Introduction to Thermodynamics.

H. Electromagnetic radiation and quantum numbers. Write correct electron configurations of elements. Correlate the position of elements on the periodic chart to their physical and chemical properties. Distinguishing among several types of chemical bonds. Differentiate between physical and chemical properties of covalent and ionic compounds. Write Lewis Structures and predict the molecular geometry of selected compounds. Write resonance structures of ions and molecules and predict the type of hybridization scheme of the central atom. Calculate the dipole moments of molecules and calculate the formal charge.

III. THECB Learning Outcomes (ACGM)

Upon successful completion of this course, students will:

1. Define the fundamental properties of matter.
2. Classify matter, compounds, and chemical reactions.
3. Determine the basic nuclear and electronic structure of atoms.
4. Identify trends in chemical and physical properties of the elements using the Periodic Table.
5. Describe the bonding in and the shape of simple molecules and ions.
6. Solve stoichiometric problems.
7. Write chemical formulas.
8. Write and balance equations.
9. Use the rules of nomenclature to name chemical compounds.
10. Define the types and characteristics of chemical reactions.
11. Use the gas laws and basics of the Kinetic Molecular Theory to solve gas problems.
12. Determine the role of energy in physical changes and chemical reactions.
13. Convert units of measure and demonstrate dimensional analysis skills.

IV. Evaluation

A. Pre-assessment
Instructors should check each student's prerequisites the first week of class; those who do not qualify should be sent back to Admissions.

B. Challenge Exam
Students who wish to challenge the course should contact the Testing Center and the Division Dean. Challenges must be accomplished before the census cut-off date. Students who previously have received a W or a letter grade for the course are not eligible to challenge the course.

C. Post-assessment

1. The instructor will maintain a continuous record of each student's progress on an institutionally approved grade sheet or computerized substitute. All instructors must keep records in such a way that information would be clear to a second party having to check grade computation in special cases. An explanatory legend should be provided on the grade sheet.

2. The evaluation of the exams should be in an objective and reproducible manner. In addition to reading assignments, the instructor may require quizzes and exercises on the subject material.

It is essential that students commit themselves to the assignments throughout the semester.

Number and Types of Examinations: The course will include a minimum of four major written examinations and one final examination.

Reading assignments of textbook or library materials may vary in length, depending on the nature of the subject, and may be part of the examinations.

The following approaches may be involved; however, instructors should stress the possible overlap of these strategies.

1. Process analysis
2. Critical thinking
3. Comparison/contrast
4. Classification
5. Definition
6. Description
7. Causal analysis
8. Analogy
9. Problem/solution

D. Final Examination
A final examination is required in all Chemistry 1311 classes. The exam should consist of all material covered in class during the semester in the scheduled two-hour final examination period. The final essay should reflect a satisfactory mastery of the course objectives including the use of appropriate strategies of problem solving.

E. Grading Percentages
Grade percentages for determining the course grade may be devised by the individual instructor, but the grade for the final exam should be averaged as 200% of the regular exam grades.

F. Remediation
There will be no remediation. Since the lowest exam grade is dropped, there are no make-up examinations.

G. Grading Scale:

A = 90 - 100	I = Incomplete
B = 80 - 89	W = Withdrew or withdrawn
C = 70 - 79	
D = 60 - 69	
F = below 60	

V. Disability Statement (Americans with/Disabilities Act [ADA])

EPCC offers a variety of services to persons with documented sensory, mental, physical, or temporary disabling conditions to promote success in classes. If you have a disability and believe you may need services, you are encouraged to contact the Center for Students with Disabilities to discuss your needs with a counselor. All discussions and documentation are kept confidential. Offices located: VV Rm C-112 (831-2426); TM Rm 1400 (831-5808); RG Rm B-201 (831-4198); NWC Rm M-54 (831-8815); and MDP Rm A-125 (831-7024*)*

VI. 6 Drop Rule

Students who began attending Texas public institutions of higher education for the first time during the Fall 2007 semester or later are subject to a 6-Drop limit for all undergraduate classes. Developmental, ESL, Dual Credit and Early College High School classes are exempt from this rule. All students should consult with their instructor before dropping a class. Academic assistance is available. Students are encouraged to see Counseling Services if dropping because exemptions may apply. Refer to the EPCC catalog and website for additional information.