**SYLLABUS**

**DATE OF LAST REVIEW:** 02/2013  
**CIP CODE:** 24.0101  
**SEMESTER:** Departmental Syllabus  
**COURSE TITLE:** Basic Math for Chemistry  
**COURSE NUMBER:** CHEM-0090  
**CREDIT HOURS:** 2  
**INSTRUCTOR:** Departmental Syllabus  
**OFFICE LOCATION:** Departmental Syllabus  
**OFFICE HOURS:** Departmental Syllabus  
**TELEPHONE:** Departmental Syllabus  
**EMAIL:** Departmental Syllabus  

*KCKCC issued email accounts are the official means for electronically communicating with our students.*

**PREREQUISITES:**  
NONE

**REQUIRED TEXT AND MATERIALS:**  
Please check with the KCKCC bookstore, [http://www.kckccbookstore.com/](http://www.kckccbookstore.com/), for the required texts for your particular class.

**COURSE DESCRIPTION:**  
This course is designed for students who have had no high school chemistry, have performed poorly in a chemistry course in high school or college, or are returning to college after an absence of several years and need General Chemistry or College Chemistry. Fundamental topics of inorganic chemistry including scientific notation, chemical mathematics, metric system, the periodic table, gases, and solutions. High school algebra or Elementary Algebra, MATH-0099 is strongly recommended.

**METHOD OF INSTRUCTION:** A variety of instructional methods may be used depending on content area. These include but are not limited to: lecture, multimedia, cooperative/collaborative learning, labs and demonstrations, projects and presentations, speeches, debates, and panels, conferencing, performances, and learning experiences outside the classroom. Methodology will be selected to best meet student needs.

**COURSE OUTLINE:**  
I. Math Concept for Chemistry  
II. Unit and Dimensional Analysis  
III. Graphing as a Tool in Chemistry  
IV. Use of Calculator  
V. Metric System  
VI. Atoms, Molecules, Compounds, Elements  
VII. Structure of Atoms
VIII. Periodic Table
IX. Chemical Formulas - Names
X. Gases, Liquids, Solid
XI. Water
XII. Solutions
XIII. Acids/Bases/Salt
XIV. pH
XV. General Organic - if time permits
XVI. Aliphatic vs Aromatic - if time permits

EXPECTED LEARNER OUTCOMES:

A. The learner will be able to demonstrate the mathematical tools that are necessary for making measurements and converting units.
B. The learner will be able to demonstrate the mathematical tools that are necessary for learning Chemistry.
C. The learner will be able to demonstrate the mathematical tools that are necessary for learning inorganic chemistry.

COURSE COMPETENCIES:

The learner will be able to demonstrate the mathematical tools that are necessary for making measurements and converting units.

1. The student will be able convert using the metric and American system of measurement.
2. The student will be able to do chemistry problems by way of unit analysis.
3. The student will be able to do chemistry problems by way of dimensional analysis.
4. The student will be able to use a scientific calculator.

The learner will be able to demonstrate the mathematic tools that are necessary for learning Chemistry.

5. The student will be able to do basic algebraic manipulation.
6. The student will be able to interpret a graph.
7. The student will be able to do analysis using graphical information.
8. The student will be able to define and distinguish atoms/molecules, compounds, elements.
9. The student will be able to demonstrate the structure of the atom: protons, neutrons, and electrons.
10. The student will be able to understand how atoms are converted to ions.

The learner will be able to demonstrate the mathematical tools that are necessary for learning inorganic chemistry.

11. The student will be able to demonstrate the numerical values that are on the periodic table of elements.
12. The student will be able to create chemical formulas using the periodic table.
13. The student will be able to name chemical formulas.
14. The student will be able to use the mathematic formula associated with solids, liquids, and gases.
15. The student will be able to demonstrate knowledge of H2O.
16. The student will be able to use the mathematic formula associated with solution chemistry.
17. The student will be able to use the mathematic formula associated with pH.

ASSESSMENT OF LEARNER OUTCOMES:
Student progress is evaluated by means that include, but are not limited to, exams, written assignments, regular attendance and class participation.
Course is either pass/fail or grade.

**SPECIAL NOTES:**
This syllabus is subject to change at the discretion of the instructor. Material included is intended to provide an outline of the course and rules that the instructor will adhere to in evaluating the student’s progress. However, this syllabus is not intended to be a legal contract. Questions regarding the syllabus are welcome any time.

Kansas City Kansas Community College is committed to an appreciation of diversity with respect for the differences among the diverse groups comprising our students, faculty, and staff that is free of bigotry and discrimination. Kansas City Kansas Community College is committed to providing a multicultural education and environment that reflects and respects diversity and that seeks to increase understanding.

Kansas City Kansas Community College offers equal educational opportunity to all students as well as serving as an equal opportunity employer for all personnel. Various laws, including Title IX of the Educational Amendments of 1972, require the college’s policy on non-discrimination be administered without regard to race, color, age, sex, religion, national origin, physical handicap, or veteran status and that such policy be made known.

Kansas City Kansas Community College complies with the Americans with Disabilities Act. If you need accommodations due to a documented disability, please contact the Director of the Academic Resource Center, in Rm. 3354 or call at: 288-7670.