**COURSE NUMBER**: CHEM 110

**CREDITS:** 3

**COURSE TITLE:** Introduction to Chemistry

**PREREQUISITES:** PREC 12 or MATH 100. Students with credit for any university chemistry course may not take this course for credit. Students intending to take CHEM 101 must take CHEM 100 instead.

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**Total Hours: 39**

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**COURSE DESCRIPTION:** This course introduces the general concepts of chemistry, including atomic structure, nomenclature, chemical reactions, stoichiometry and calculations, chemical bonding, liquids, solids and solutions, kinetics, and equilibrium. There is no laboratory component to this course. Students interested in taking CHEM 101 should take CHEM 100 instead of CHEM 110.

**LEARNING OUTCOMES:**

By successful completion of this course, you should be able to:

- Demonstrate a firm grasp of the knowledge of chemistry, as specified in course syllabus and objectives.
- Identify the relationships between chemistry and other science disciplines, and the applications of chemistry in society. Identify the impact of chemistry on our life and the world around us.
- Solve chemistry problems using mathematical and computational tools.
- Understand and use the correct vocabulary necessary to communicate specific chemical information to other chemists and non-chemists.
- Understand the bases of the electronic structure of atoms and its relationship to the periodic table of the elements.
- Be able to identify the types of molecular bonds and shapes of simple molecules.
- Understand the factors governing the kinetics of chemical reactions.
- Comprehend and test the equilibria of various systems, both homo- and heterogenous, as related to gases, acids, and bases.
- Understand the fundamentals of oxidation-reduction reactions. Be able to recognize and balance a redox reaction

**COURSE CONTENT:**

| Week | Topic |
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| Week 1 | Scientific Method, Measurements and Calculations |
| Week 2 | Matter, Elements, Atoms, Ions |
| Week 3 | Modern Atomic Theory |
| Week 4 | Chemical Nomenclature, Chemical Reactions |
| Week 5 | Chemical Composition |
| Week 6 | Chemical Quantities and Stoichiometry |
| Week 7 | Energy |
| Week 8 | Liquids and Solids |
| Week 9 | Chemical Bonding |
| Week 10 | Solutions |
| Week 11 | Equilibrium |
| Week 12 | Acids and Bases |
| Week 13 | Oxidation-Reduction Reactions |