Course Outline

Course Number: CH-104
Title: Introductory Chemistry
Date Approved: 6/3/2016

Credits: 5
Length of Course: 44
For each credit, the student will be expected to spend, on average, 3 hours per week in combination of in-class and out-of-class activity.

Grading Method: A-F or Pass/No Pass
Prerequisites: MTH-065 or MTH-098 or placement in MTH-095; and WRD-090 or placement in WRD-098
Co-requisites: CH-104L and CH-104S
Recommended: None
Required: None
Related Instruction Area: None
Uses Library Resources: Yes

Department: Sciences
Outline Developed by: Eden Francis
Course Approved as: Lower Division Collegiate

Course Description:
A lab transfer course for students in nursing, allied health fields and liberal arts. Topics include: observation, measurement, composition, stoichiometry, atomic structure, periodic table, bonding and nomenclature.

Student Learning Outcomes:
Upon successful completion of this course, students should be able to:

1. describe the scientific method and the procedures used in generating hypotheses and solving scientific questions in the context of chemistry; (SC1) (SC2) (SC3)
2. analyze problems and apply appropriate problem-solving methods, including the correct use of experimental data, units and significant figures; (SC1) (SC2)
3. clearly communicate and comprehend basic scientific principles and concepts important to an understanding of major topics in introductory chemistry; (SC1)
4. demonstrate understanding of fundamental concepts of chemistry by definition, explanation, and use of these ideas in examinations and laboratory exercises; (SC1) (SC2)
5. critically examine the fundamentals of chemistry in their role as applied to human biology, medicine, and environmental issues. (SC3)

Major Topic Outline:
1. Observation and description.
2. Measurements and calculations.
3. Composition and weight relationships.
5. Elements, atoms, and compounds.
6. Chemical equations and stoichiometry.
7. Atomic and electronic structure.
8. Periodic table and atomic properties.
9. Ionic, covalent, and metallic bonding.
10. Molecular shapes, polarity, and intermolecular bonding.
Outcomes addressed by the course:

'C' - this course completely addresses the outcome. Students who successfully complete this course are likely to have attained this learning outcome.

'S' - this course substantially addresses the outcome. More than one course is required for the outcome to be completely addressed. Students who successfully complete all of the required courses are likely to have attained this learning outcome.

'P' - this course partially addresses the outcome. Students will have been exposed to the outcome as part of the class, but the class is not a primary means for attaining the outcome and assessment for general education purposes may not be necessary.

As a result of completing the AAOT/ASOT general education requirements students will be able to:

MA: Mathematics Outcomes

1. Use appropriate mathematics to solve problems.

2. Recognize which mathematical concepts are applicable to a scenario, apply appropriate mathematics and technology in its analysis, and then accurately interpret, validate, and communicate the results.

SC: Science or Computer Science Outcomes

1. Gather, comprehend, and communicate scientific and technical information in order to explore ideas, models, and solutions and generate further questions.

2. Apply scientific and technical modes of inquiry, individually, and collaboratively, to critically evaluate existing or alternative explanations, solve problems, and make evidence-based decisions in an ethical manner.

3. Assess the strengths and weaknesses of scientific studies and critically examine the influence of scientific and technical knowledge on human society and the environment.