

## CHEM 111 – GENERAL CHEMISTRY I (3 credits)

### Description

This course is an introduction to the fundamental principles of chemistry for science majors. Basic concepts of matter, stoichiometry, thermochemistry and some chemical reactions will be taught in this course.

### Textbook

W.L.Masterton and C.N.Hurley, Chemistry: Principles and Reactions, 5th ed., Saunders, 1997.

### Reference

Library collection of books dealing with chemistry.

### Goals

To study the fundamentals of chemistry and the application of them in practical exercises.

### Topics and corresponding chapters

Matter and measurements, Chapter 1, all sections. (3h)

Exercises: 2, 4, 8, 13, 15, 20, 22, 23, 26, 34, 38, 46, 51.

Atoms, molecules and ions, Chapter 2, except 2.4. (3h)

Exercises: 15, 29, 32, 35, 38, 40.

Mass relations in Chemistry: Stoichiometry, Chapter 3, sections 3.1 and 3.2. (3h)

Exercises: 9, 13, 15, 21, 23, 47, 49, 54, 56, 59.

*1<sup>st</sup> test about the topics studied.* (1h)

Mass relations in Chemistry: Stoichiometry, Chapter 3, sections 3.3 and 3.4. (3h)

Exercises: 13, 15, 21, 23, 47, 49, 54, 59.

Reactions in aqueous solution, Chapter 4, all sections. (4h)

Exercises: 7, 13, 25, 27, 28, 32, 34, 43, 46, 55.

*2<sup>nd</sup> test, midterm exam, that includes the topics studied.*

Gases, Chapter 5, all sections. (5h)

Exercises: 3, 5, 7, 16, 19, 23, 31, 35, 39, 47.

Electronic structure and the periodic table, Chapter 6, all sections. (5h)

Exercises: 3, 7, 9, 12, 17, 21, 43, 49, 55.

*3<sup>rd</sup> test.*

Thermochemistry, Chapter 8, excluding section 8.7. (5h)

Exercises: 3, 7, 17, 21, 27, 29, 33, 35,

Covalent bonding and molecular geometry, Chapter 7, all sections. (5h)

Exercises: 1, 3, 11, 31, 33, 43, 47, 49, 51.

*4<sup>th</sup> test, final exam.*

**Evaluation**

Attendance will be mandatory and class participation will be encouraged. A high number of absences, more than 2 without justification, will contribute negatively to the final grade with a 10%.

The homework presented by the student will be taken into account as positive if it is handed in on time. This work will be graded. Students must take all the tests, midterm and final exams.

Students must complete the three parts of the course successfully. The percentage of each in terms of the final grade will be:

- homework	10%
- 1 <sup>st</sup> test and midterm exam	40%
- 3 <sup>rd</sup> test and final exam	40%
- attitude and attendance	10%