

# Teaching guide

## IDENTIFICATION DETAILS

Degree:	Biotechnology		
Field of Knowledge:	Science		
Faculty/School:	Experimental Science		
Course:	GENERAL CHEMISTRY		
Type:	Basic Training	ECTS credits:	6
Year:	1	Code:	2014
Teaching period:	First semester		
Area:	Chemistry		
Module:	Fundamental sciences		
Teaching type:	Classroom-based		
Language:	Spanish		
Total number of student study hours:	150		

## SUBJECT DESCRIPTION

En el presente Plan de Estudios (2009) del Grado en Biotecnología, Química General es una asignatura de Formación Básica de la Materia Química perteneciente al Módulo de Ciencias Fundamentales. Esta asignatura se imparte en el primer semestre y tiene asignada una carga docente de 6 créditos ECTS que equivalen a 150 horas de trabajo del alumno.

La docencia de la asignatura Química General permitirá que el alumno conozca y comprenda que la química nació como ciencia en la vida cotidiana del hombre. En la asignatura se intentará profundizar en los aspectos que se consideran mas relevantes en su formación como Biotecnólogos, para que les ayude a entender la importancia

de la química en el conjunto de la vida.

Además de todos estos objetivos que pueden encuadrarse en la formación del "profesional biotecnólogo", con la docencia de Química General también se quiere formar al "biotecnólogo persona", es decir, formar "personas con capacidad de servicio, férrea voluntad, sentido del deber, responsabilidad social y personal, compromiso e integridad moral" como bien se refleja en el Ideario del Grado en Biotecnología.

## **SKILLS**

### **Basic Skills**

Students must have demonstrated knowledge and understanding in an area of study that is founded on general secondary education. Moreover, the area of study is typically at a level that includes certain aspects implying knowledge at the forefront of its field of study, albeit supported by advanced textbooks

Students must be able to apply their knowledge to their work or vocation in a professional manner and possess skills that can typically be demonstrated by coming up with and sustaining arguments and solving problems within their field of study

Students must have the ability to gather and interpret relevant data (usually within their field of study) in order to make judgments that include reflections on pertinent social, scientific or ethical issues

Students must be able to convey information, ideas, problems and solutions to both an expert and non-expert audience

Students must have developed the learning skills needed to undertake further study with a high degree of independence

### **General Skills**

To acquire firm theoretical, practical, technological and humanistic training needed to develop professional activity.

To have acquired the ability for analytical, synthetic, reflective, critical, theoretical and practical thought.

Capacity for problem-solving and decision-making.

To be able to plan time effectively.

To be familiar with the basic principles and theories of human and experimental sciences.

To understand the fundamental laws and principles of physics, mathematics, chemistry and biology as the foundation for the mental structure of a biotechnician.

To acquire the skills needed for experimental work: design, preparation, the compilation of results and the obtainment of conclusions, understanding the limitations of an experimental approach.

## Specific skills

To suitably describe the nature of matter and the formation of the various types of chemical bonds.

To be familiar with and understand chemical balance reactions occurring in dissolution.

To understand the principles of thermodynamics and to be able to predict the spontaneity of a reaction based on thermodynamic changes under certain conditions.

To organise and suitably plan work in the laboratory.

To identify and define laboratory instruments and materials.

To be able to describe, quantify, analyse and critically assess the results of experiments performed in the laboratory.

To be able to apply the theoretical knowledge acquired for solving problems and practical cases linked to the various subjects.

## DISTRIBUTION OF WORK TIME

CLASSROOM-BASED ACTIVITY	INDEPENDENT STUDY/OUT-OF-CLASSROOM ACTIVITY
60 hours	90 hours