27211 - Statistics and IT

Información del Plan Docente

Academic Year	2016/17
Academic center	100 - Facultad de Ciencias
Degree	452 - Degree in Chemistry
ECTS	6.0
Course	2
Period	First semester
Subject Type	Basic Education
Module	---

1.Basic info

1.1.Recommendations to take this course

1.2.Activities and key dates for the course

2.Initiation

2.1.Learning outcomes that define the subject

2.2.Introduction

3.Context and competences

3.1.Goals

3.2.Context and meaning of the subject in the degree

3.3.Competences

3.4.Importance of learning outcomes

4.Evaluation

5.Activities and resources

5.1.General methodological presentation

5.2.Learning activities

5.3.Program

Chapter 1: Basic notions

- Introduction to Computer Science. Computer Science applications

- Hardware and software. Operating systems. Networks. Programming languages

Chapter 2: Software tools

- Spreadsheets. Data management. Goal search

- Modular and structured programming. Data structures and control structures. Procedures and functions

Chapter 3: Descriptive statistics and basic concepts in probability

- Introduction and objectives of Statistics. Applications on Chemistry

- Different types of data

- Univariate and bivariate descriptive statistics

- Basic concepts in probability and random variables

Chapter 4: Statistical inference

- Introduction to statistical inference

- Point estimation of parameters

- Confidence intervals

- Tests of hypothesis

- Nonparametric inference

- Lineal regression models

5.4.Planning and scheduling

5.5.Bibliography and recomended resources

BB	Bourg, David M.. Excel : aplicaciones científicas y de ingeniería / David M. Bourg Madrid : Anaya, cop. 2007
BB	Miller, James N.. Estadística y Quimiometría para química analítica /

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	James N. Miller, Jane C. Miller ; traducción, Carlos Maté Jiménez, Roberto Izquierdo Hornillos . - 1a ed. en español Madrid : Prentice Hall, 2002
BB	Peña Sánchez de Rivera, Daniel. Fundamentos de estadística / Daniel Peña . - 1ª ed., 1ª reimp. Madrid : Alianza, 2005
BB	Peña Sánchez de Rivera, Daniel. Regresión y diseño de experimentos / Daniel Peña Madrid : Alianza Editorial, 2002
BB	Prieto Espinosa, Alberto. Introducción a la informática / Alberto Prieto Espinosa, Antonio Lloris Ruiz, Juan Carlos Torres Cantero . - 4ª ed. Madrid [etc.] : MacGraw-Hill, D.L. 2006

Online resources:

	Acceso al proyecto R de la Universidad de Cádiz, en el que se pueden encontrar libros y software libres - [http://knuth.uca.es/]