AM0910	
AM0910  Maximum Number of Students: 20  Total ECTS Credits 2  Notional Learning Hours (a) Context Time - 13h (b) Private Study - 37h  Format of Teaching: T n Ladures T T n Liborations of Private Study - 37h  Format of Teaching: T n Liborations of Private Study - 37h  Format of Teaching: T n Liborations of Private Study - 37h  Format of Teaching: Leatures T T n Liborations of Private Study - 37h  Format of Teaching: T n Liborations of Private Study - 37h  Format of Teaching: Leatures T T n Liborations of Private Study - 37h  Format of Teaching: Leatures T T n Liborations of Private Study - 37h  Format of Teaching: Leatures T T n Liborations of Private Study - 37h  Format of Teaching: Leatures T T n Liborations of Private Study - 37h  Formal tectures in 60/90 mit timetable. One full day (6h) of Laboratory Practicals.  Convener: L Cavaco  University: University: University: University: University: University: Language of Tuition: Englan  Module Description - The Purpose of Aims: 1. To introduce the instrumentation used in the most common AS techniques: Flame and Electrothermal Atomic Absorption Spectroscopy: Plasma Emission Atomic Spectroscopy (AS) 2. To introduce the instrumentation used in the most common AS techniques: Flame and Electrothermal Atomic Absorption Spectroscopy: Plasma Emission Atomic Spectroscopy. 3. To introduce the instrumentation scient on an As: 2. Select the most adequate AES technique for the analysis of a given system 3. Crineally analyse and evaluate results from AS 4. Correctly develop an analytical method and a procedure for validating results in AES.  Summary of Course Content: This module introduces concepts of fundamental AS. It then explores the most widely used AS techniques: Flame and Electrothermal Atomic Absorption Spectroscopy: Plasma Emission Atomic Spectroscopy. For each technique, the principles, instrumentation, all initiations and typical applications are presented.  Transferable Skills Taught: Laboratory skills: adjusting and using equipment for Atomic Spectroscopy.	
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	Laboratory skills: adjusting and using equipment for Atomic Spectroscopy.
1. LO1 – LO4 – Laboratory report.	Assessment Methods:

## Assessment Criteria:

## Treshold

LO1 – to correctly describe the components of a given AS system

LO2 - to identify the main AS techniques and when they can be applied

LO3 - to correctly calculate efficiency parameters for an atomic spectrophotometer

LO4 - to correctly perform a AS analysis using a method already implemented.

Good

LO1 – to correctly identify a AS equipment and define what type of analysis it can perform

LO2 - to be able to choose the most adequate AS technique to perform the analysis of a given sample

LO3 - to correctly analyse the efficiency of a AS system and design solutions to increase its performance

LO4 - to develop and optimise an AS method for a given analysis

## Excellent

LO1 – to correctly identify the parts of any AS equipment and define what type of analysis can be performed in each equipment

LO2 – given a set of samples, to choose the best available AS techniques to analyse each sample

LO3 - to develop a laboratory quality control plan for AS equipment, based on the efficiency of each equipment

LO4 – to develop and optimise a AS method for a given analysis.

## **Resource Implications of Proposal and Proposed Solutions:**

Lecture notes will be available for students.

Recommended reading:

"Quantitative Chemical Analisys", Daniel C. Harris, Freeman, 6th ed., 2003.

"Analytical Chemistry", R. Kellner, J.M. Mermet, M. Otto, H.M. Widmer, Wiley-VCH Verlag, Weinheim, Germany, 1998. "Principles of Instrumental Analysis", D.A. Skoog, F.J. Holler, T.A. Nieman, 5th ed., Saunders College, Florida, 1998 "Chemical Analysis – Modern Instrumentation Methods and Techniques", F. Rousseac, A. Rousseac, Wiley, 2000 "Analytical Instrumentation – Performance, Characteristics and Quality", G. Currell, Wiley, 2000.