Module Title:
Electrophoresis

Module Code:
AM0904

Maximum Number of Students:
20

Total ECTS Credits
2

Notional Learning Hours
(a) Contact Time - 10h
(b) Private Study - 40h

Format of Teaching:
Lectures 6 h
Laboratories or Practicals 4 h
Other 0 h

Teaching Strategy:
Formal lectures in 60/90 min timetable. One morning/afternoon (4h) of Laboratory Practicals.

Convener:
I. Cavaco

University:
University of Algarve

Language of Tuition:
English

Module Description - The Purpose or Aims:

1. To introduce fundamental concepts of Electrophoresis as an analytical technique.
2. To describe the instrumentation in the most usual electrophoretic techniques: planar and capillary electrophoresis.

Learning Outcomes:

At the end of the module the learner is expected to be able to:

1. correctly identify and describe the principles and instrumentation used in electrophoretic techniques
2. Select the most adequate electrophoretic tecnhique for the analysis of a given system
3. Critically analyse and evaluate the efficiency of a electrophoretic system

Summary of Course Content:

This module introduces concepts of analytical electrophoresis, namely planar and capillary electrophoresis. The principles, instrumentation and optimization of these techniques is discussed

Transferable Skills Taught:

Laboratory skills: adjusting and using equipment for planar electrophoresis.

Assessment Methods:

1. LO1 – LO3 – Laboratory report.

Assessment Criteria:

Treshold
LO1 – to correctly describe the components of a given electrophoretic system
LO2 – to identify the main electrophoretic techniques and when they can be applied
LO3 – to correctly calculate efficiency parameters for an electrophoretic system

Good
LO1 – to correctly identify an electrophoretic equipment and define what type of analysis it can perform
LO2 – to be able to choose the most adequate electrophoretic technique to perform the analysis of a given sample
LO3 – to correctly analyse the efficiency of an electrophoretic system and design solutions to increase its performance

Excellent
LO1 – to correctly identify the parts of any electrophoretic equipment and define what type of analysis can be performed in each equipment
LO2 – given a set of samples, to choose the best available electrophoretic techniques to analyse each sample
LO3 – to develop a laboratory quality control plan for electrophoretic equipment, based on its efficiency

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.