



NATIONAL UNIVERSITY OF ENGINEERING
COLLEGE OF SCIENCES
PHYSICS PROGRAM

CF492 – ADVANCED PHYSICS LABORATORY

I. GENERAL INFORMATION

CODE	: CF492 – Advanced Physics Laboratory
SEMESTER	: 8
CREDITS	: 05
HOURS PER WEEK	: 08 (Theory – Laboratory)
PREREQUISITES	: CF421 Intermediate Physics Laboratory CF451 Quantum Mechanics II
CONDITION	: Mandatory

II. COURSE DESCRIPTION

Familiarize the student with diverse techniques and usual instruments in a modern physics laboratory, be they optical (laser, interferometer, spectroscopy, etc.), electronic (oscilloscopes, data acquisition and use of PCs, sensors, etc.), vacuum, nuclear, etc. Familiarize the student with "classical" experiments in physics, such as Franck-Hertz, Hall effect and the measurement of natural constants (speed of light, electron charge, e/m , Planck constant, etc.), and determine properties of various materials (semiconductors, etc.).

III. LEARNING UNITS

- 1. Scanning and Optical Electron Microscopy.**
- 2. Visible Light Spectroscopy and Refractometry.**
- 3. Electrochemical techniques.**
- 4. Atomic Absorption Spectroscopy.**
- 5. Spectroscopy by Fourier Transform.**
- 6. Gamma spectrometry.**
- 7. Flame photometry.**

IV. BIBLIOGRAPHY