UNIVERSITY OF PANNONIA

SUBJECT DATASHEET

Semester:	2010/11/2
Subject:	Laboratory practices in nuclear metrology
Code:	VEMKRK4132N
Responsible department:	Institute of Radiochemistry and Radioecology
Responsible department code:	MKRK
Responsible lecturer:	Tibor Kovács

Educational objectives:

Knowledge about bases of different measuring methods.

Detailed content of the subject:

Plateau and working point measurement of a GM tube. Relaxation time, statistics of measured data. Efficiency of the GM tube, the quadratic rule of distance. Measurements with gas-filled detectors. Scintillation spectrometry. Energy calibration and precision of a scintillation spectrometer. High precision gamma spectrometry. Energy calibration and precision of a HpGe detector. Efficiency calibration of a semi-conductor detector. Measuring an unknown gamma-activity wint absolute and relative method. High precision X-ray fluorescent spectrometry. Action radius of alpha.particles. Alpha energy measurement with semi-conductor detector. Alpha-spectrometry with PERAL method. Measurements with liquid scintillation counter. Dose, dose rate and surface contamination measurements.

Requirements:

All the proper practices are to be executed by the students admitted the subject either on regular or on extra dates offered. To test the preparedness of the students they have to provide an entrance digger and the results of it contribute to the classification mark of the practice. The results of the determinations provided in the laboratories, including some intermediate data to control the endpoints, are to be presented in a protocol. The protocols are collected at the end of the practice and classified the conductor. The average of the marks of the protocols is reported as the endpoint of the practice.

Required and suggested references:

Radiokémiai laboratóriumi gyakorlatok, Jegyzet, VE Egyetemi Kiadó, 1996 .