



COURSE DATASHEET

Semester:	2016/17/1
Course:	Nuclear chemistry and isotope technique
Code:	VEMKRKM412M
Responsible department:	Institute of Radiochemistry and Radioecology
Department code:	MKRK
Responsible instructor:	Edit Tóth-Bodrogi

Course objectives:

Acquirement of the basic aspects of the nuclear chemistry and radioisotope application.

Course content:

Isotope effects. Enrichment and separation of radioisotopes. Particle accelerators. Nuclear reactions: fundamentals. Nuclear reactions by neutrons and charged particles. Activation analysis. Production of radionuclides. Properties of radioactive isotopes. Radioactive decay series, radioactive equilibriums. Radioactive labeling: fundamentals and applications. 'Artificial' elements. Mössbauer-spectroscopy. Positronium-chemistry. Isotope-dilution-analysis.

Requirements, evaluation and grading:

In the course of an oral examination two overall questions on the issues of the lectures are provided to each student. A short period of time (maximum 30 minutes) is supplied to the students to prepare some drafts of their answers.

The exam is qualified in the following ways:

- If draft and the answers provided by the student are clear, correct and explains every important relationship on the subject, the record is marked as excellent one (5).
- If the student is able to make an overall analysis on the issue solely by the directions of the teacher, he (she) is assessed with a good record (4).
- If the student is not able to give clear description on the main relationships of the subject but he (she) can define the fundamental conceptions, his grade is a fair (medium) (3).
- If the student can define the fundamental conceptions of the issue by the directions of the teacher, he gets a pass (2).
- Without having studied the fundamental conceptions the student is qualified with an unsatisfactory (fail) record (1).

Required and recommended readings:

Kiss - Vértes: Magkémia, Akadémiai Kiadó, Bp., 1979.

Nagy Lajos György: Radiokémia és izotóptechnika (Tankönyvkiadó 1989).



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Required and recommended readings:

Szilárd testek vizsgálata elektronokkal, ionokkal és röntgensugarakkal. (szerk. O. Brümmer stb.), Műszaki Könyvkiadó, Bp., 1984.