

COURSE TITLE:

# INTRODUCTION INTO NUCLEAR ENVIRONMENTAL PROTECTION

COURSE DESCRIPTION:

Interaction between radiation and matter. Dose concepts, principles of dosimetry and types of dosimeters. Biological effects of radiation. Basic principles of radiation protection. Determination of internal and external dose. Sources of natural and artificial radiation dose. The nuclear fuel cycle and the operation principles of nuclear reactors. Dynamic behavior of nuclear reactors, the problems of controlling the chain reaction, nuclear accidents. Nuclear waste storage and disposal. Safety of the nuclear energy production, trends in increasing safety and solving nuclear waste problem in the future. Methods and current practice in nuclear environmental control.

LITERATURE:

Compulsory:

Attila Vértes, István Kiss: Nuclear Chemistry, Akadémiai Kiadó, Budapest, 1987

Suggested:

Attila Vértes, Sándor Nagy, Zoltán Klencsár: Handbook of Nuclear Chemistry, Kluwer, Amsterdam, 2003

Joseph Magill, Jean Galy: Radioactivity, Radionuclides, Radiation, Springer, Berlin, 2005

G. Choppin, J. O. Liljenzin, J. Rydberg, Radiochemistry and Nuclear Chemistry, Butterworth-Heinemann, 2002

TEACHER:

**Zoltán Homonnay**

professor