

<b>Title of the course:</b> <b>Environmental hazards II. – Environmental radiation protection</b>	<b>NEPTUN-code:</b> RKXKA2ABNE	<b>Weekly teaching hours:</b> $l+cw+lb$ 1+1+0	<b>Credit:</b> 2 <b>Exam type:</b> tm
<b>Course leader:</b> Konrád Lájér, Dr.	<b>Position:</b> associate professor	<b>Required preliminary knowledge:</b> There is no requirement	
<b>Curriculum:</b>			
History of atomic structure. Classification of radiations (ionizing and non-ionizing). Radiation from environmental. Detect of natural radioactivity. Law of natural activity. Particle radiations ( $\alpha$ , $\gamma$ , neutron). Penetrating power of radiations. Uses of nuclear energy and radiation (food preservation, nuclear power stations and weapons). Working method of a pressurized-water nuclear station. Relationship between mass defect and binding energy. Nuclear fission. Dose quantities in SI units. Radiation effects on human. Protection against radioactive radiation (time, distance, shielding). Nuclear disasters.			
<b>Professional competencies:</b>			
Knowledge of general and specific mathematical, natural and social scientific principles, rules, relations, and procedures as required to pursue activities in the special field of environment protection. Able to solve tasks of water, soil, air, radiation, and noise protection, as well as of waste treatment and processing at proposal level; to participate in preparing decisions; to perform authority audits; and to take part in the operation of these technologies. Able to communicate both verbally and in writing in their mother tongue and in at least one foreign language, in respect of professional issues, and to continuously develop their professional skills as required. Open to professional cooperation with specialists related to their profession but involved in other areas. Efforts to improve knowledge by on-going self-education and continuously update their knowledge of the world. Constantly upgrading their knowledge of environment protection by attending organized professional development training courses. Responsible proclamation and representation of the value system of the engineering profession; openness to professionally well-founded critical remarks.			
<b>Literature:</b>			
1. Serway Jewett: Physics for Scientist and Engineers			
2. <a href="http://jrr.oxfordjournals.org/content/55/4/629.full">http://jrr.oxfordjournals.org/content/55/4/629.full</a>			
3. <a href="http://www.processindustryforum.com/hottopics/nucleardisasters">http://www.processindustryforum.com/hottopics/nucleardisasters</a>			
Comment:			