Title of the course: **Physics II.**	***NEPTUN-code:*** RKXFI2ABNE	***Weekly teaching hours:*** *l+cw+lb* 1+1+0	***Credit*****:** 3 ***Exam type****:* e
Course leader: Sándor Pekker, Dr.	***Position:*** research professor	***Required preliminary knowledge:*** RKXFI1ABNE	

Curriculum:

Dividing of physics II. Laws of thermodynamics. Special processes. Molecular heat theory. Thermal propagation. Heat engines (Carnot, Otto and Diesel). Basics of electrodynamics. Charges at rest. Moving charges. Alternating and direct current. Maxwell's equations. Introduction to atom physics: basic concepts of quantum mechanics. Photoelectric effect. Uncertainty relation. Nuclear physics: Bohr's atomic mode. The structure of the atomic nucleus. Relationship between mass defect and binding energy. The mechanism of atomic fission. The operating principle of nuclear power plants. Radioactive decays and their lawfulness.

Professional competencies:

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 participate creatively in engineering work based on their multidisciplinary skills, as well as to adapt to continuously changing circumstances.
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.

Literature

1. Serway Jewett: Physics for Scientist and Engineers
2. Lóránt Szabó: Physics for Undergraduate Students
3. www.physicsslassroom.com
4. Bueche, F., Hecht, E.: Schaum's Outline of College Physics, 11th edition, McGraw-Hill Education, 2011.
5. Feynman R., Leighton, R.B. and Sands M.: The Feynman Lectures on Physics. Volumes I-III. Revised and extended edition, Addison-Wesley, 2005.
6. Shankar, R.: Fundamentals of Physics: Mechanics, Relativity, and Thermodynamics. Yale University Press, 2014.
7. Shankar, R.: Fundamentals of Physics II: Electromagnetism, Optics, and Quantum Mechanics. Yale University Press, 2016.

Comment: