

Level : bachelor				
Course title: Neutron Physics				
Status: elective				
ECTS: 6				
Requirements: Nuclear Physics				
Learning objectives To teach students about the main aspects of neutron physics				
Learning outcomes Understanding the principles of neutron physics. Ability to follow the latest results in this research field.				
Syllabus Discovery of neutron. Characteristics of neutron. Sources of neutrons. Neutron generators. Neutrons of cosmic origin. The detection of neutrons. Neutron spectrometers. Neutron reactions and cross-sections. Interference and diffraction of neutrons. The absorption of neutrons and neutron radiography. Neutron activation analysis. Moderation of neutrons. The mechanism of slowing down neutrons in moderator. The average energy loss of neutron per collision. Diffusion of neutrons. Diffusion equation of monoenergetic neutrons. Diffusion constant. Neutron balance. Boundary conditions for diffusion of neutrons. Induced nuclear fission. Neutrons from fission. Chain reaction.				
Weekly teaching load				Other:
Lectures: 3	Exercises: 1	Other forms of teaching: 1	Student research:	