

Level: PhD				
Course title: Rare nuclear processes				
Status: elective				
ECTS: 15				
Requirements: Modern experimental physics III, Nuclear physics				
Learning objectives Introducing students to the theory of rare nuclear processes and the most interesting experiments in this area of research.				
Learning outcomes Acquiring knowledge about rare nuclear processes. Practical application of some specific parts of the course.				
Syllabus <i>Theoretical instruction</i> Radioactive decay of protons. Neutron-antineutron oscillations. Neutrino interactions and neutrino mass. The double beta decay. Neutrino flavour oscillations. Interactions of magnetic monopole. Research of dark matter in the universe. Neutrino astronomy. The problem of solar neutrinos. The hypothesis of the existence of fifth force. LEGINT process. Cluster radioactive decay. Rare electromagnetic processes. The spontaneous emission of pions. <i>Practical instruction:</i> individual research work in the form of seminars – presentations.				
Weekly teaching load				Other:
Lectures: 6	Exercises:	Other forms of teaching:	Student research: 4	