

<b>Level : PhD</b>		
<b>Course title:</b> Nuclear Structure - Measuring Methods		
<b>Status:</b> elective		
<b>ECTS:</b> 15		
<b>Requirements: Nuclear Physics</b>		
<b>Learning objectives</b>		
Applying the knowledge of nuclear physics to the study of the structure of atomic nuclei. Students should become familiar with the experimental techniques used to study the basic parameters of nuclear structure.		
<b>Learning outcomes</b>		
<ul style="list-style-type: none"> <li>- General Skills: General knowledge of experimental methods and techniques, analysis of experimental results.</li> <li>- Specific Competencies: Understanding of methods and techniques used in experimental nuclear physics. After completing this course, student should be able to decide which is the most suitable technique for application in the present study of the nuclear structure. To improve ability to analyze experimental results and obtain specific information about the structure of the nuclei.</li> </ul>		
<b>Syllabus</b>		
<i>Theoretical instruction:</i>		
The interaction of radiation with matter, detectors, particle accelerators, nuclear reactions, gamma spectroscopy, particle and electron spectroscopy, signal processing, measuring techniques for coincident measurements, advanced methods of nuclear physics and instrumentation. Measurement of monopole, dipole and quadrupole nuclear moments. Testing of nuclei deformations.		
<i>Practical instruction:</i>		
Calculus, student term paper, analysis of experimental data from nuclear structure experiments.		
<b>Literature</b>		
<ol style="list-style-type: none"> <li>1. Krane, K.S. "Introductory Nuclear Physics", John Wiley, 1987.</li> <li>2. Tavernier, S. "Experimental techniques in nuclear and particle physics", Springer-Verlag, 2010.</li> <li>3. Knoll, G.F. "Radiation detection and measurement", 4 ed., Wiley, 2010.</li> <li>4. Low-temperature nuclear orientation, Editors N.J.Stone, H.Postma, NH (1986).</li> </ol>		
<b>Weekly teaching load</b>	<b>Lectures: 4</b>	<b>Exercises: 6</b>