Level: PhD	
Course title: Monte Carlo method and its application in condensed systems	
Status: elective	
ECTS: 15	
Requirements: Theory of phase transition	

Learning objectives
Acquiring knowledge in Monte Carlo method and its application on particular physical problems in statistical physics and condensed matter physics.

Learning outcomes
After taking the course, students should have developed:
General abilities: basic knowledge of this field, following the literature, analysis of various solutions and the choice of the most adequate solution, application in practice and other subjects.
Subject-specific abilities: knowing Monte Carlo method, applying this method on particular systems in condensed matter physics.

Syllabus
Theoretical instruction
Monte Carlo method and its application in statistical physics. Random walks on lattice and self-avoiding random walks. Irreversible deposition (RSA). Adsorption-desorption processes. Percolations. Simulations of processes in granular materials. Simulations of processes in magnetic systems.

Practical instruction
Problem solving session.

Weekly teaching load				Other:
Lectures: 4	Exercises:	Other forms of teaching:	Student research: 6	