

Level: bachelor				
Course title: Fundamentals of energetic				
Status: elective				
ECTS: 6				
Requirements: Electrodynamics				
Learning objectives Introduction to the physical basis of the process of transformation of energy. Introduction to modern methods of transformation of different forms of energy.				
Learning outcomes Students are expected to obtain: <ul style="list-style-type: none"> - General abilities: understanding of modern developments in energetics in the world. - Subject specific abilities: understanding and knowledge of general principles of transformation of different forms of energy; following modern trends in conventional and alternative energetics; following modern trends in the research of new energy sources (fission). 				
Syllabus <i>Theoretical instruction</i> Energy transformation - general remarks. (Energetics as a global problem. Basic laws. Energy transformation analysis methods.) Solar energy. Wind energy, Tide energy and Geothermal energy. MHD generators. Thermoelectric and Thermionic generators. Fuel cells. Nuclear fission as an energy source. (Fission reactions. Fission reactor. Basic scheme of nuclear fission power plant.) Nuclear fusion as an energy source. (Fusion reactions. Fusion reactor. Basic scheme of nuclear fusion power plant.) Energetics and environmental problems. <i>Practical instruction</i> Exercises based on theoretical part would be done in the energetics facilities in the city and the vicinity of Novi Sad. Seminar.				
Weekly teaching load				Other:
Lectures: 3	Exercises: 1	Other forms of teaching: 1	Student research:	