

Study Programme: Agricultural engineering and information systems			
Course Unit Title: <i>RENEWABLE ENERGY SOURCES IN AGRICULTURE</i>			
Course Unit Code: 19.PTI048			
Name of Lecturer(s): Milan D. Tomić			
Type and Level of Studies: Undergraduate (8 semesters, 240 ECTS)			
Course Status (compulsory/elective): elective			
Semester (winter/summer): summer			
Language of instruction: Serbian			
Mode of course unit delivery (face-to-face/distance learning): face-to-face			
Number of ECTS Allocated: 6			
Prerequisites: -			
Course Aims: Introduce students to the basic types and characteristics of renewable energy sources in agriculture and the possibilities of their application.			
Learning Outcomes: Mastering the professional and scientific methods of choice and use of renewable energy sources, construction and operation of process plants, and resolving specific problems in the field of applications of renewable energy sources in agriculture			
Syllabus: Theoretical classes Basic concepts of energy. Energy and environment. Energy sustainability. Global trends in the use of renewable energy sources (RES). Specifics of individual renewable energy sources (biomass, solar energy, wind energy, water energy. Management in the use of renewable energy sources. Energy conversion. Biomass combustion. Biogas production. Production of liquid fuels from biomass - biodiesel and bioethanol. Solar energy receivers. Conversion wind energy into mechanical and electrical energy. Geothermal energy. Hydroturbines. Heat pumps. Practical classes: Calculation exercises in the field of energy conversion and balance. Preparation of a seminar paper. The topic of the seminar paper is energy sustainability for the selected biotechnical system.			
Required Reading: 1. M. Brkić, T. Janić, D. Somer, Termotehnika u poljoprivr. – II deo, Procesna tehnika i energetika, Poljoprivredni fakultet, Novi Sad, 1998.			
Weekly Contact Hours: 5	Lectures: 3	Practical work: 2	
Teaching Methods: The tasks in process engineering. Laboratory and field exercises in process equipment. Seminar or project works from the aforementioned lessons.			
Knowledge Assessment (maximum of 100 points):			
Pre-exam obligations	points	Final exam	points
Active class participation	5	written exam	40
Practical work	4	oral exam	51
Preliminary exam(s)		
Seminar(s)	-		
The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam, project presentation, seminars, etc.			