Course Unit Descriptor

Study Programme: ORGANIC AGRICULTURE

Course Unit Title: Renewable energy sources

Course Unit Code: 19.ORG038

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:

Acquainting students with the types and specifics of renewable energy sources, as well as the techniques and technologies of their application. The student acquires basic knowledge about the possibilities and principles of conversion of renewable types of energy.

Learning Outcomes:

Training students to assess the possibility of using renewable energy sources in different cases. The student is able to make an adequate choice and method of energy conversion.

Syllabus:

Theoretical teaching

Basic terms about energy. Energy and environment. Energy sustainability. Global trends in the use of renewable energy sources (RES). Specifics of certain renewable energy sources (biomass, solar energy, wind energy, water energy. Management in the use of renewable energy sources. Energy conversions. Combustion of biomass. Production of biogas. Production of liquid fuels from biomass - biodiesel and bioethanol. Solar energy receivers. Conversion wind energy into mechanical and electrical energy Geothermal energy Hydro turbines Heat pump.

Practical teaching:

Computational exercises in the area of conversions and energy balance. Preparation of a seminar paper. The topic of the seminar is energy sustainability for the selected biotechnical system.

Required Reading:

1. Brkić, M., Janić, T., Somer, D.: Procesna tehnika i energetika u poljoprivredi, Faculty of Agriculture, University of Novi Sad, 2011.

Weekly Contact Hours: 4	**Lectures:** 2	**Practical work:** 2

Teaching Methods:

The method of oral presentations and discussions. Method of presentations, demonstrations, simulations and illustrations on the board and using computers and via video presentation. Method of drawing and illustrating.

Knowledge Assessment (maximum of 100 points):

Pre-exam obligations	points	**Final exam**	points
Active class participation	5	Oral exam	51
Practical work	4		
Preliminary exam(s)	40	…….	
Seminar(s)	-		