

Study Programme: Agronomy
Course Unit Title: Forest Trees` Biomass for Energy Plantations
Course Unit Code: 19.AGR093
Name of Lecturer(s): Andrej Pilipović
Type and Level of Studies: PhD
Course Status (compulsory/elective): elective
Semester (winter/summer): winter
Language of instruction: Serbian, English
Mode of course unit delivery (face-to-face/distance learning): face -to-face
Number of ECTS Allocated: 7
Prerequisites: N/A
<p>Course Aims:</p> <p>Introduction of the importance of wood as a renewable energy source due to the significance of the “energy forestry” in the era of the climate change from the perspective of energy policy. The topic will include establishment, species and cultivar selection, origin of the woody biomass for the energy production in both sole or combined with other fuels, production of bioethanol, biodiesel or gas. Legislation, standtarsss, international polices and social and environmental impact will also be elaborated during this course. .</p>
<p>Learning Outcomes:</p> <p>Getting necessary knowledge in the filed of production and application of woody biomass as renewable material to produce heat, electricity and fuels, and the aspects of the use and conversion of biofuels on the environment.</p>
<p>Syllabus:</p> <p><i>Theory</i></p> <p>1.Establishment of the energy biomass plantations. 2. Species selection 3. Variety selection 4. Land and soil for the establishment of the plantations 5.Projections of bioenerhy production 6. Woody biomass as a source of bioenergy material 7. Potential of short rotation intensive woody crops (SRIWC) 8. Different FAO scenarios on the development of energy plantations 9. Potential of non-forest woody biomass 10. Potential of the forest wood residue 11. Potential of the woody biomass from the wood processing residue 12. Conversion of the biomass to energy, principles, and challenges 13. Legislation on woody biomass and standards 14. Social and environmental impact of woody biomass</p> <p><i>Practice</i></p> <p>Development of the project plan for the establishment of the biomass for energy plantation.</p>
Required Reading:

Biofuels, Bioenergy and Bioproducts from Sustainable Agricultural and Forest Crops, Gen. Techn. Report NRS-P-3 USA, 20082 Research Laboratory Office of Research and Development Cincinnati, Ohio 45268. February 2000.

Акциони план за биомасу од 2010. до 2012. године, Службени гласник РС 56/2010

Identificataion and assesment of biomass heating applications in Serbia, USAID and HELLENICAID draft report, 2010

PROGRESS IN BIOMASS AND BIOENERGY RESEARCH» editor Frank Columbus, Nova Science Publishers, INC. New York, USA, 2006.

Poplars and Willows in Yugoslavia, Poplar Research Institute, 1986.

Weekly Contact Hours:

Lectures:4

Practical work:4

Teaching Methods:

Lectures combined with interactive learning, seminars, consultations and mentoring of students.

Knowledge Assessment (maximum of 100 points):

Pre-exam obligations	points	Final exam	points
Active class participation		written exam	
Practical work		oral exam	60
Preliminary exam(s)		
Seminar(s)	40		

The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam, project presentation, seminars, etc.