Type and level of study: Bachelor academic studies

Course Title: AGRICULTURAL MECHANIZATION

Teacher: Dr Milorad V. Đokić, Assistant professor

Study program: Ecological Agriculture

Status: Obligatory, semester VI

ECTS: 6

Prerequisite: None

Course goals

Efficient self-learning and upgrading of new and modern knowledge , presentation of the knowledge acquired during the seminar , papers , exams, taking tests in examination process , evaluation (process of monitoring, checking and evaluation) of the learning outcomes , critical expert opinion , making decisions about how to use and apply certain machines , teamwork with other agronomic profiles professions , evaluation and amendment of the teaching process based on critical thinking of students.

The outcome of the subject

Proper selection of the optimal technical and technological , energy , environmental and economic parameters of machines for working with soil in the conditions of conventional and organic agricultural production , application and usage of the basic exploitation machine working parameters, technical security measures of the machinery and certain working bodies, the proper implementation of storage measures and maintenance of machines.

Syllabus

Theoretical study **-** Fundamentals of power machines in agriculture (basic concepts and definitions , power machines and plants , tractors) .

Mechanization of crop and vegetable production (organic and conventional agriculture):

Machinery and equipment for land processing, Machinery forseeding and planting, Crop protection machines in organic agriculture,Fertilizer machines, Machines for irrigation, Machines for harvesting; Machines for grain crops harvesting, Corn pickers, Derived technical solutions of pickers and harvesters, Machinery for the sugar beet extraction, Machinery for vegetable production: extracting the yield from the ground and collecting yieldsabove ground, Means of transport in agriculture. Specifics of machines in organic agricultural production

Mechanization of organic livestock production:

Storing hay machines in organic livestock production(mowers, blenders, rollers – hay spreaders, hay collectors,self – loading trailers, bailing hay presses, roll balers), Machines and devices for preparation of green fodderand silage (silage harvesters, silagefacilities, devices for filling and emptying of sillage facilities), Machines and devices forconcentrated feed preparation, Facilities and equipment in animal husbandry in the conditions of organic and intensive – conventional agricultural production, Water supplies of livestock facilities, Microclimate of livestock facilities, Mechanical milking, Devices for mechanized manureof livestock buildings.Treatment of liquid manure in order to protect the environment

Practical classes **-** Practice, other forms of teaching, fundamentals of research.

On practical classes, students will be introduced to agricultural machinery parts, their function, optimal adjustment, evaluation of their work quality, but also with aggregating auxiliary machines with tractors.Computing part of the practical classesrefers tocalculating necessary parametersi.e. : total and specific fuel consumption, power on the tractor drawbar, pulling force, slipping of driving wheels, sliding and rolling friction, the effect of working machines.

Literature

Group of authors USA, California, Mechanization and Equipment in Organic Agriculture,

David Pimentel, Impacts of Organic Farming of Energy Use in Agriculture,

An Organic Center State of Science Review, Cornell University, Ithaca NY, August 2006.

Hansen ,A. L. (2010): The Organic Farming Manual: A Comprehensive Guide to Starting and Running a Certified Organic Farm. Storey Publishing.

Akinyemi, O. M. (2007): Agricultural Production: Organic and Conventional Systems. US. Taylor & Francis Inc.

Moyer, J. (2011): Organic No-Till Farming. Advancing No-Tille Agriculture – Crops, Soils, Equipment. Radale Institute. USA.

Number of lectures: 4				Other Classes
Lectures: 2	Practices: 2	Other forms of teaching:	Student research work:	
Teaching methods: Lectures, exercises, students will be included in the discussion (interactive learning), making term papers, case studies.				
Score (maximum 100 points)				
Pre-commitments	**Poens**	**The final exam**	Poens	
Activity during lectures	**10**	Written exam		
Practical classes	**10**	Oral examination	**50**	
Colloquia	**15**			
Seminars	**15**			
Total	**50**		**50**	