

<b>Study program:</b> Organic crop and livestock production			
<b>Type and level of study:</b> Bachelor academic studies			
<b>Course Title:</b> BASIC OF CHEMISTRY			
<b>Teachers:</b> dr Sonja Ivković, assistant professor			
<b>Status:</b> Obligatory, semester I			
<b>ECTS:</b> 8			
<b>Prerequisite:</b> None			
<b>The goal of course</b> Students acquire the basic theoretical and practical knowledge of general and inorganic chemistry, as a foundation for mastering further content of general and special subjects in the study program.			
<b>The outcome of the subject</b> Course content focuses on the gaining knowledge and understanding of the relationship between the structure of matter and chemical properties of atoms, types of chemical bonds and properties of molecules, the chemical knowledge of the laws and principles of chemical reactions, classification and nomenclature of inorganic compounds. The subject also provides practical knowledge in the field of computing in chemistry, as well as basic skills in performing experiments in chemistry and processing of experimental results.			
<b>Syllabus</b> <i>Theoretical study</i> - Matter, mass and energy. Basic chemical and gas laws. The structure of the atom and atom models. Periodic Table of Elements. Chemical bonding and structure of molecules. Intermolecular connections. The chemical symbols, formulas and equations. Types and names of inorganic chemical compounds. Complex compounds. The solutions and the properties of the solution. Properties of dilute solutions. Colloids. Types of chemical reactions. Oxidation - reduction processes. Chemical kinetics - speed of chemical reactions. Theory of acids and bases. Chemical equilibrium in homogeneous and heterogeneous systems. Introduction to Organic Chemistry. Classification, nomenclature and structural properties of organic compounds. <i>Practical classes</i> - Computing in chemistry. <i>Laboratory exercises</i> - Introduction to basic laboratory work and laboratory operations. Characteristics of the elements, compounds and mixtures. Characteristics of the inorganic compounds. Chemical reactions. Types of chemical reactions. Preparation, properties and classification of solutions. Chemical equilibrium in homogeneous and heterogeneous systems.			
<b>Literature</b> Kim Seng Chan, Jeanne Tan. Understanding Basic Chemistry. The Learner's Approach, World Scientific Publishing Co Pte Ltd, 404 p 7. S. Chowdhury, B Vajjayanthi V Ahluwalia. WBCHE Basic Chemistry. Bharti Bhavan Publication Pvt. Ltd; First Edition edition (2013)			
<b>Number of lectures: 6</b>			Other Classes
Lectures: 3	Practices: 3	Other forms of teaching:	
Student research work:			
<b>Teaching methods:</b> Lectures, interactive work, experimental work			
Score (maximum 100 points)			
<b>Pre-commitments</b>	<b>Poens</b>	<b>The final exam</b>	<b>Poens</b>
Activity during lectures	10	Written exam	40
Practical classes	10	Oral examination	
Colloquia	2x20		
Seminars			
<i>Total</i>	60		40

<b>Study program:</b> Organic crop and livestock production				
<b>Type and level of study:</b> Bachelor academic studies				
<b>Course Title:</b> BASICS OF BIOLOGY				
<b>Professors:</b> Dr. Andrejić Z. Jelena, Assistant Professor				
<b>Status:</b> Compulsory, semester I				
<b>ECTS:</b> 8				
<b>Prerequisite:</b> None				
<b>The goal of the course</b> Enabling students to master basic concepts of different biological disciplines relevant to the ecological agriculture. To enable students to explore and understand material of cells, tissues, organs and organ systems of animals, vertebrate embryology basis, basic principles and the basis of classification of animal ecology, application of appropriate modern teaching methods and contemporary literature				
<b>The outcome of the course</b> Students will be able to apply biological concepts in agro ecological farming.  At the end of the course students should demonstrate knowledge and understanding of the morphology of cells, tissues and organs of animals, different levels of organization of animals, the basis of development of vertebrates, the principles of ecology, and understanding of the relationships between organisms and the environment as the basis for the implementation of sustainable forms of animal husbandry, the principles of diversity and classification of animals. The students should be qualified for the following skills: using a light microscope, identifying and describing the cells, tissues and organs of vertebrates, recognition and knowledge of the taxonomy of representative organisms, parasites of domestic animals, effective learning, teamwork, critical thinking, presentation of acquired knowledge, outcome assessment learning, evaluation of the teaching process.				
<b>Syllabus</b> <i>Theoretical study –</i> Morphoanatomical structure of plant cells and organs, plant physiology, molecular biology, the importance of genetic research, ecological concepts and ecological factors, population ecology, development and evolution of ecosystems, the evolutionary mechanisms of mutations, genetic drift, natural and artificial selection, speciation.  The morphology of the cells, tissues and organs of animals, different levels of organization of animals, the basis of development of vertebrates, the principles of ecology, understanding of the relationships between organisms and the environment as the basis for the implementation of sustainable forms of animal husbandry, the principles of diversity and classification of knowledge of animals, assessment of learning outcomes, assessment of teaching process.  <i>Practical lessons -</i> practical lessons will support theoretical knowledge through experimental and demonstrative exercises and enable students to be able to apply them in specific working conditions.				
<b>Literature</b>  Champbell NA., Reece JB., Taylor MR. & Simon EJ. 2008. Biology. Concepts and Connections. Benjamin Cummings, 783 p. Cain ML., Yoon CK. & Sing-Cundy A. Discover Biology. 2004. WW Notron & Company, New York. 996 p.				
<b>Number of lectures: 6</b>				Other Lessons
Lectures: 3	Practices: 3	Other forms of teaching:	Student research work:	
<b>Teaching methods:</b> Lectures, discussions with students, experimental exercises, preparation and public defense of practical applied work.				
Score (maximum 100 points)				

<b>Pre-commitments</b>	<b>Points</b>	<b>The final exam</b>	<b>Points</b>
Activity during lectures	10	Written exam	
practical lessons	10	Oral examination	30
Preliminary exams	2 x 20		
Seminars	10		
<i>Total</i>	70		30

<b>Study program:</b> Organic crop and livestock production			
<b>Type and level of study:</b> Bachelor academic studies			
<b>Course Title:</b> MATHEMATICS			
<b>Teachers:</b> Dr Zorica Uzelac, full professor			
<b>Status:</b> Obligatory, semester I			
<b>ECTS:</b> 7			
<b>Prerequisite:</b> None			
<b>The goal of course</b> Course content focuses on the acquisition of the necessary knowledge of mathematics and statistics that are necessary to overcome further general and specialized subjects and practical application in preparing and solving mathematical and statistical models in certain areas of the profession.			
<b>The outcome of the subject</b> □ Student is able to create and solve mathematical and statistical models in specialized subjects in further education.			
<b>Syllabus</b> <i>Theoretical study</i> - Lectures are conducted in combination. Lectures present the theoretical part of the subject matter and typical examples that serve to facilitate understanding of the theory are exhibited. Areas to be covered: 1) The real function of one real variable 2) Differential calculus 3) Integral calculus 4) Basic concepts of probability theory 5) Numerical characteristics of the sample and the population 6) Interval estimate of parameters 7) Test the hypothesis 8) Regression and correlation <i>Practical classes</i> -			
<b>Literature</b> Serge Lang. Basic Mathematics. Springer Pub, 496 p. Haym kruglak, John Moore, Ramon Mata-Toledo. Schaum's Outline of Basic Mathematics with Applications to Science and Technology. 2 <sup>nd</sup> ed, Schaum's Pub, 504 p.			
<b>Number of lectures: 4</b>			Other Classes
Lectures: 2	Practices: 2	Other forms of teaching:	
Student research work:			
<b>Teaching methods:</b>			
Score (maximum 100 points)			
<b>Pre-commitments</b>	<b>Poens</b>	<b>The final exam</b>	<b>Poens</b>
Activity during lectures	5	Written exam	50
Practical classes	0	Oral examination	10
Colloquia	35		
Seminars			
<i>Total</i>	40		60

<b>Study program:</b> Organic crop and livestock production			
<b>Type and level of study:</b> Bachelor academic studies			
<b>Course Title:</b> ENGLISH LANGUAGE I			
<b>Professors:</b> Tatjana Milosavljević, lecturer,			
<b>Status:</b> Compulsory, semester I			
<b>ECTS:</b> 6			
<b>Prerequisite:</b> None			
<b>The goal of the course</b> Mastering the use of grammar, pronunciation, professional and general, spoken and written language, in order to enable students to communicate in English with the emphasis on technical terminology (ESP) as the basis for the use of literature and reading professional and scientific publications.			
<b>The outcome of the course</b> Students will be able to speak English language actively, as well as to use English literature in the field of organic crop and livestock production.			
<b>Syllabus</b> <i>Theoretical study</i> - Present Simple Tense; Present Continuous Tense; Past Simple Tense; Future Forms: will, be going to, Present Continuous Tense; Passive: Present Simple, Present Continuous, Past Simple; Modal verbs for obligation; Comparison of Adjectives;  <i>Practical lessons</i> – Reading, writing, listening and speaking skills; Case studies			
<b>Literature</b> 1) Cotton, D. et al. Longman Market Leader: Pre-Intermediate Business English. 3 <sup>rd</sup> ed. Edinburgh Gate, Harlow: Pearson Education Ltd, 2012. 2) Longman Market Leader: Pre-Intermediate Business English Self-Study CD-ROM 3) Mascull, B. Business Vocabulary in Use. Cambridge: CUP, 2010. 4) Murphy, R. English Grammar in Use. 4 <sup>th</sup> ed. Cambridge: CUP, 2012.			
<b>Number of lectures: 4</b>			Other Lessons
Lectures: 2	Practices: 2	Other forms of teaching: Student research work:	
<b>Teaching methods:</b> Lectures, exercises, consultations, working in small groups, pair work, independent work, with the use of audio-visual aids.			
Score (maximum 100 points)			
<b>Pre-commitments</b>	<b>Points</b>	<b>The final exam</b>	<b>Points</b>
Activity during lectures	15	Written exam	50
Practical lessons	15	Oral examination	20
Preliminary exams (=written exam)	25+25		
Seminars			
<i>Total</i>			100

<b>Study program:</b> Organic crop and livestock production				
<b>Type and level of study:</b> Bachelor academic studies				
<b>Course Title:</b> BASICS ECOLOGICAL AGRICULTURE				
<b>Professors:</b> Dr. Nikolić P. Olivera, Associate Professor				
<b>Status:</b> Compulsory, semester II				
<b>ECTS:</b> 8				
<b>Prerequisite:</b> None				
<b>The goal of the course</b> The goal is that students should acquire awareness of the benefits of organic, biodynamic and organic agriculture compared to conventional, in terms of safe food, respect for people and their needs, conservation of natural resources, ecological balance and social responsibility.				
<b>The outcome of the course</b> By completing the planned program, students should master the methods of ecological, organic and biodynamic agriculture and their practical application, develop the ability to recognize the priority measures of crop rotation, respect for biodiversity, consistent application of organic, natural materials and the importance of compliance with regulations, provided by standardization and the Law on Organic Agriculture.				
<b>Syllabus</b> <i>Theoretical study</i> – Soil as basic resource in agriculture production. Soil traits: physical, chemical, biological. Water, air and temperature regimes of soil. Soil fertility. The concept of sustainable development. Basic concepts in the field of ecological agriculture, introduction and importance of organic and biodynamic agriculture, the conditions of production plants for human and animal consumption. Modification of technology of production plants (tillage systems, fertilizing, protection and care of crops) adapted to requirements and rules of organic and biodynamic agriculture. Crop rotation, specific of mixed crops, covering crops and green manuring, conservation of genetic resources and agro- genetic resources. The importance of old varieties and populations and their preservation and rational use of the eco-farms. Using compost. Permaculture. Specifics of biodynamic production base and development of closed and diversified production system. The specificity of biodynamic preparations and their use. Lunar calendar and certification. Codex Alimentarius.  <i>Practical lessons</i> - Formulation of model organic and biodynamic farms. Practical demonstration through experiments, model organic and biodynamic agriculture. Designing organic garden. Comparison of organic and biodynamic model of agricultural production on practical examples. Seminar papers. Stay on organic farms, involvement in the production and preparation of organic fertilizers.				
<b>Literature</b> 1. Olivier de Schutter, UN Special Rapporteur on the Right to Food; 2011: Agroecology and the Right to Food <a href="http://www.srfood.org/images/stories/pdf/officialreports/20110308_a-hrc-16-49_agroecology_en.pdf">http://www.srfood.org/images/stories/pdf/officialreports/20110308_a-hrc-16-49_agroecology_en.pdf</a> 2. Sustainable Agriculture: Definitions and Terms, Mary V. Gold, 2007. <a href="http://afsic.nal.usda.gov/sustainable-agriculture-definitions-and-terms-1">http://afsic.nal.usda.gov/sustainable-agriculture-definitions-and-terms-1</a> 3. Organic Agriculture, European Commission, 2012. <a href="https://ec.europa.eu/europeaid/sites/devco/files/study-organic-agriculture-201206_en_5.pdf">https://ec.europa.eu/europeaid/sites/devco/files/study-organic-agriculture-201206_en_5.pdf</a> 4. Regulative EU 834/2007, 889/2008, 1254/2008				
<b>Number of lectures: 5</b>			Other Lessons	
Lectures: 2	Practices: 3	Other forms of teaching:		
Student research work:				
<b>Teaching methods:</b> <input type="checkbox"/> Lectures, using computer technology, discussions with students, individual and team work.				
Score (maximum 100 points)				
<b>Pre-commitments</b>		<b>Points</b>	<b>The final exam</b>	<b>Points</b>

Activity during lectures	10	Written exam	
Practical lessons	20	Oral examination	50
Preliminary exams	$2 \times 10 = 20$		
Seminars			
<i>Total</i>	50		50

<b>Study program:</b> Organic crop and livestock production			
<b>Type and level of study:</b> Bachelor academic studies			
<b>Course Title:</b> RURAL DEVELOPMENT AND AGROTOURISM			
<b>Teachers:</b> Dr Biljana S.Panin, Assistant professor, Dr. Bela B. Muhi, Assistant professor			
<b>Status:</b> Obligatory, semester II			
<b>ECTS:</b> 8			
<b>Prerequisite:</b> None			
<p><b>The goal of course</b></p> <p>Huge part of population in the world, but also in Republic of Serbia, lives in rural areas. It is necessary to provide good and pleasant living conditions in these areas, in order to remain population and to elevate poverty. Modern tourism trends are characterized by an increasing recourse to rural destinations in Europe. In many countries of the European Union, strategy for the development of regions and rural areas included rural and agro-tourism. These forms of tourism help in keeping population in, create new jobs and contribute to the socio-economic progress of rural areas. Global trends in the tourism market are marked by the growing diversity of forms of tourism and trend that shifts from mass to individual forms of tourism, enabling tourism in rural areas (especially rural and agro-tourism) to open to a new perspectives on the world tourism market. Tourism is one of the strategic goals of economic development of Serbia and tourism in rural areas is highlighted as one of the priority forms of tourism where to invest and which should be developed. .As organic food production is the world trend, agritourism development could be ideal way of promotion and development of organic production. Organic production as quality scheme could contribute to strenghtening competetiveness of farmers, but also complement tourist offer and make the diversification of the activities of food producers, that could impact on overall rural dvelopment. Through rural and agro-tourism, in addition to travel services, there can be an export of local agricultural products: primarily organic (bio) food. All of that has a large impact on rural development. Accordingly, objective of this course is to provide students with basic knowledge of agro-tourism as a form of tourism that has great potential for development in the country, as well as the importance of agro-tourism to organic production development and vice versa, with the emphasis on overall rural development.</p>			
<p><b>The outcome of the subject</b></p> <p>The outcome of this case is the acquisition of those theoretical and practical knowledge about rural development and agrotoursim. This knowledge students can use in the further development of agro-tourism, rural development and ecological agriculture, and to engage in all activities related to tourism (level of national, regional and local institutions and organizations, both public and private sector, tourism organizations and agencies, etc.).</p>			
<p><b>Syllabus</b></p> <p><i>Theoretical study</i> - To understand the complexity of the concept of agritourism and rural development: the subject matter is designed in several thematic sections. Some of the thematic units are: Rural development – definition, importance and policies, diversification of rural economy, achieved level of rural development and tourism development on an international scale, sustainable and responsible tourism development, creation and development of rural and agritourism, the economic importance of rural and agritourism, tendencies and trends in the future development of rural and agritourism, organic production importance for agritourism, placement of organic products in agritourism, examples of good practice in Serbia and so on.</p> <p><i>Practical classes</i> - Working in groups (seminars and case studies), and specific examples of a discussion on the topics of curriculum.</p>			
<p><b>Literature</b></p> <p>1. Michal Sznajder, Lucyna Przezbórska, Frank Scrimgeour. 2009. Agrotourism. CABI, 301 p.</p> <p>2. Katar Singh. Rural Development: Principles, Policies and Managemen. 2009. SAGE Publications Pvt. Ltd. 368 p.</p>			
Number of lectures: 5			Other Classes
Lectures: 3	Practices: 2	Other forms of teaching:	
<b>Teaching methods:</b> <input type="checkbox"/> Lectures, exercises, students will be included in the discussion (interactive learning),			



making term papers, case studies.

Score (maximum 100 points)

<b>Pre-commitments</b>	<b>Poens</b>	<b>The final exam</b>	<b>Poens</b>
Activity during lectures	10	Written exam	
Practical classes	10	Oral examination	20
Colloquia	2x20		
Seminars	20		
<i>Total</i>	80		20

<b>Study program:</b> Organic crop and livestock production			
<b>Type and level of study:</b> Bachelor academic studies			
<b>Course Title:</b> BASICS OF BIOCHEMISTRY			
<b>Professors:</b> Dr. Panković M. Dejana, Full Professor			
<b>Status:</b> Compulsory, semester II			
<b>ECTS:</b> 8			
<b>Prerequisite:</b> None			
<b>The goal of the course</b> Acquiring knowledge about the basic biochemical processes in living organisms and their changes under the influence of abiotic and biotic stressors from the environment.			
<b>The outcome of the course</b> Acquired knowledge should provide the understanding of interactions between organisms and their environment in respect to current climatic changes			
<b>Syllabus</b> <i>Theoretical study</i> - Importance of biochemistry in agriculture. Carbohydrates: definition, classification, structure, properties of glucose, biological significance of carbohydrates. Proteins: introduction, definition, classification, properties and structure of proteins. Amino-acids: definition, structure, classification and properties of amino acids. Lipids: introduction, definition, classification of lipids, properties of fats and oils, biological significance, purines, pyrimidines and nucleic acids. Minerals and their biochemical functions. Enzymes: definition, classification, chemical nature of enzymes, factors affecting enzyme activity, biological role of enzyme as a catalyst. Vitamins: introduction, classification, properties, functions and deficiency symptoms of vitamin A, D, E, K, B complex (B1 and B12) and vitamin C (ascorbic acid). Nutrition: definition, nutritional components of food, importance of the energy needs, nutritional importance of carbohydrates, proteins, fats and fatty acids, minerals, water and fibre. Biochemical changes in the course of germinating seeds. Biochemical changes during ripening fruits. Fermentation processing of nutrients in animals, regulation of growth and development in animals. <i>Practical lessons</i> - Preparation for laboratory work, introduction to laboratory equipment, making solutions, determination of pH, colorimetry and spectrophotometry (carbohydrates and proteins).			
<b>Literature</b> David L. Nelson and Michael M. Cox. Lehninger Principles of Biochemistry. 2012. W.H. Freeman; 6 edition, 140p Denise R. Ferrier. Biochemistry (Lippincott Illustrated Reviews Series) Sixth, North American Edition, LWW pub. 560 p.  Chesworth J.M., Stuchbury T. & Scaife J.R. (1998). An Introduction to Agricultural Biochemistry, Chapman & Hall.			
<b>Number of lectures: 6</b>			Other Lessons
Lectures: 3	Practices: 3	Other forms of teaching:	
Student research work:			
<b>Teaching methods:</b>			
Score (maximum 100 points)			
<b>Pre-commitments</b>	<b>Points</b>	<b>The final exam</b>	<b>Points</b>
Activity during lectures	10	Written exam	40
Practical lessons	10	Oral examination	
Preliminary exam	20		
Seminars	20		

<i>Total</i>	60		40
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<b>Study program:</b> Organic crop and livestock production			
<b>Type and level of study:</b> Bachelor academic studies			
<b>Course Title:</b> ENGLISH LANGUAGE II			
<b>Professors:</b> Tatjana Milosavljević, lecturer, Gordana Vladislavljević, lecturer			
<b>Status:</b> Compulsory, semester II			
<b>ECTS:</b> 7			
<b>Prerequisite:</b> None			
<b>The goal of the course</b> Balancing the use of grammar, pronunciation, professional and general, spoken and written language in order to enable students to communicate in English with an emphasis in technical terminology (ESP) as a basis for the use of manuals and monitoring of technical and scientific publications.			
<b>The outcome of the course</b> Students will be trained for active use of English (reading, writing, listening, speaking), as well as the use of English literature in the field of organic crop and livestock production.			
<b>Syllabus</b> <i>Theoretical study</i> - Present Simple; Present Continuous; FutureForms: will, going to, Present Continuous, Present Simple; Past Simple; Present Perfect; Noun Combinations; Articles; Expressing advice, obligation and necessity; Infinitives and <i>-ing</i> forms; Conditions; Narrative Tenses; Relative Clauses; Passives Vocabulary: Words that go with <b>brand, product and market</b> ; British and American travel words; Words for describing changes; Words and expressions in the description of company structure; Words and expressions for talking about advertising; Words and expressions for talking about finance; Idioms for talking about business relationships; Expressions for talking about job applications; Words and expressions for talking about free trade; Words to describe illegal activity or unethical behaviour; Words to describe character; sport Idioms to describe competition <i>Practical lessons</i> – Reading, writing, listening and speaking skills; Case studies			
<b>Literature</b> 1) Cotton, D. et al. Longman Market Leader: Intermediate Business English. 3 <sup>rd</sup> ed. Edinburgh Gate, Harlow: Pearson Education Ltd, 2012. 2) Longman Market Leader: Intermediate Business English Self-Study CD-ROM 3) Mascull, B. Business Vocabulary in Use. Cambridge: CUP, 2010. 4) Murphy, R. English Grammar in Use. 4 <sup>th</sup> ed. Cambridge: CUP, 2012.			
<b>Number of lectures: 4</b>			Other Lessons
Lectures: 2	Practices: 2	Other forms of teaching: Student research work:	
<b>Teaching methods:</b>			
Score (maximum 100 points)			
<b>Pre-commitments</b>	<b>Points</b>	<b>The final exam</b>	<b>Points</b>
Activity during lectures	15	Written exam	50
Practical lessons	15	Oral examination	20
Preliminary exams (= written exam)	25+25		
Seminars			
<i>Total</i>			100

<b>Study program:</b> Organic crop and livestock production			
<b>Type and level of study:</b> Bachelor academic studies			
<b>Course Title:</b> BASICS OF GENETICS			
<b>Professors:</b> Dr. Perović G. Dragan, Full Professor			
<b>Status:</b> Compulsory, semester III			
<b>ECTS:</b> 8			
<b>Prerequisite:</b> None			
<b>The goal of the course</b> The aim of the course is to provide students with the knowledge of the basics of science of inheritance, the dogma of transfer of genetic information in the process of transcription and translation, determination of the expression of genetic basis for inheritance of quantitative and qualitative traits. The course should enable students to acquire knowledge of the principles of inheritance of traits, the regulation of gene activity, the sources of genetic variability, the methods for determining the mode of inheritance of traits in the offspring, and introduction to new scientific disciplines such as genomics and comparative genomics.			
<b>The outcome of the course</b> Students learn the basics of genetics since the same holds a central position in the doctrine of organic agriculture. After successfully completed the pre-exam and exam commitments student can critically compare conventional and organic farming, as it has the same fundamental knowledge in the following areas: Basic characteristics of genetic material (vertical and horizontal gene transfer), differences in the inheritance of quantitative and qualitative traits, differences in the control of gene expression, genetic variability and ways of exploitation, biotic and abiotic interactions, genome size and type of sequences in the genome by comparative genomic, relationship and exploitation of variability in the wild relative species.			
<b>Syllabus</b> <i>Theoretical study</i> – It includes the following methodological units: transcription and translation, molecular genetics, cytoplasm inheritance and cytogenetic, genetics of resistance to diseases and pests, quantitative genetics, genomics and comparative genomics and methods of breeding and selection. <i>Practical lessons</i> – Interactive teaching with laboratory and field exercises, discussions with experts on certain topics, essay.			
<b>Literature</b> Lewin B. Genes VII, Oxford University Press, UK, 1997. Acquaah G, Principles of Plant Genetics and Breeding, Wiley-Blackwell, 2014 and articles from: Science, Nature Genetics, Genetics, Plant Cell, PlosONE, The Plant genome			
<b>Number of lectures: 5</b>			Other Lessons
Lectures: 3	Practices: 2	Other forms of teaching:	
<b>Teaching methods:</b> Lectures, discussions with students, experimental exercises, preparation and public defense of practical applied work.			
Score (maximum 100 points)			
<b>Pre-commitments</b>	<b>Points</b>	<b>The final exam</b>	<b>Points</b>
Activity during lectures	10	Written exam	
Practical lessons	10	Oral examination	50
Preliminary exam	20		
Seminars	10		
<i>Total</i>	50		50

<b>Study program:</b> Organic crop and livestock production
<b>Type and level of study:</b> Bachelor academic studies
<b>Course Title:</b> BASICS OF PLANT PHYSIOLOGY AND ANIMALS
<b>Teachers:</b> Dr. Jovanović B. Ljubinko, Full professor, Mihailo Radivojević, assistant professor, Dr Slađan Rašić, Assistant professor
<b>Status:</b> Obligatory, semester III
<b>ECTS:</b> 8
<b>Prerequisite:</b> None
<p><b>The goal of course</b> Introduction to basic processes in plants, transport of nutrients and water, timber root and leaf photosynthesis, the influence of various abiotic and biotic factors on plant.</p> <p>The subject should enable the student to acquire knowledge about the functioning of the system of individual animal organism: cardiovascular, respiratory, digestive, urinary, endocrine, nervous and immune, the role of the skin and mammary glands, muscle physiology, thermoregulation, circulation and lymph, a physiological role of vitamins and minerals.</p>
<p><b>The outcome of the subject</b> On the basis of acquired knowledge, assessment activities of various abiotic and biotic factors to the plant, identifying the health status of plants in the field, measures to overcome the drought, distinguishing changes in plants, determining their cause and propose solutions.</p> <p>At the end of the module the student should demonstrate knowledge (understanding) the following areas: the functional organization of the body and homeostasis, physiology: blood, immune system, heart, circulation, lymph, lymph and spleen, gas exchange in the lungs and tissues, nutrient digestion, thermoregulation, facts vitamins and minerals, formation and excretion of urine, skin and mammary glands, endocrine glands, physiology of muscles and the nervous system and the functioning of the perceptual organs sensitive nervous system. Knowledge gained form the basis for the acquisition of new knowledge in the vocational subjects in the senior years of study.</p>
<p><b>Syllabus</b> <i>Theoretical study</i> – Basics of plant physiology. Cells. Photosynthesis and factors affecting photosynthesis, C3, C4 and CAM type of photosynthesis, the effects of increasing CO<sub>2</sub> on plants. Respiration in plants and interactions with the environment. Transport of assimilates in plants. Conductive tissues: phloem and xylem. Developments of apoaplastom and simplast. Water regime and water use, drought, water balance in plants. Energy balance in plants. Mineral nutrition and factors affecting mineral nutrition. Fundamentals of growth and development. Fundamentals of the physiology of seed. Stress physiology of rhizosphere: abiotic and biotic factor effects on rhizosphere organisms. Micro-organisms and roots. The role of the rhizosphere in agroecosystems.</p> <p>Basics of Animal Physiology: Cardiovascular system: blood physiology, physiology of the heart, circulation; 2. Respiratory system: mechanism of gas exchange in the lungs and tissues; 3. digestive system: digestion of nutrients in mono and poligastric animals; 4. Urinary system: the mechanism of formation and excretion of urine; 5. Endocrine system: function and significance of endocrine glands; 6. The nervous and immune systems: the organization of the nervous system and the physiology of the body's defense against harmful factors; 7. Leather and mammary gland; Physiology of muscles; Thermoregulation; Lymph and lymph; 8. The physiological role of vitamins and minerals.</p> <p><i>Practical classes</i> - Preparing for work in the laboratory, overview of laboratory equipment, preparation of solutions, determination of pH, osmometry, work on the microscope, spectrophotometry (root surface), germination, Basic knowledge about statistic, EXEL spreadsheet tables, presentation etcetc.</p> <p>Determination of haematological parameters 2. Determination of chemical and pathological ingredients 3. Testing for enzyme activity of the digestive tract and the determination of milk components 4. Measurement of blood pressure and pulse, auscultation of the heart sounds, spirometry and dissection laboratory animals 5. Tests</p>

contractile ability of muscles and individual reflex in mammal.			
<b>Literature</b>			
L. Strayer (1988) Biochemistry. W.H. Freeman and Company/New York			
Lincoln Taiz and Eduardo Zeiger (2010): Plant Physiology, Fifth Edition Fifth Edition. Elsvier			
William G. Hopkins and Norman P. A.(2008) Introduction to Plant Physiology Fourth Edition The University of Western OntarioJohn Wiley & Sons, Inc.			
Linda E. Graham, Jim M. Graham, Lee W. Wilcox(2006): Plant Biology (2nd Edition).			
<a href="https://www.studyblue.com/notes/b/plant-biology-2nd-edition/3514/0">https://www.studyblue.com/notes/b/plant-biology-2nd-edition/3514/0</a>			
Lauralee Sherwood, Hillar Klandorf, and Paul H. Yancey (2013) Animal Physiology: From Genes to Organisms. Second Edition, Brooks/Cole, Cengage Learnin			
Ruth Lawson (2015): Anatomy and Physiology of Animals. en.wikibooks.org			
Christopher D. Moyes and Patricia M. Schulte, (2005): Principles of Animal Physiology. Published by Daryl Fox			
<b>Number of lectures: 7</b>			Other Classes
Lectures: 4	Practices: 3	Other forms of teaching:	
<b>Teaching methods:</b> <input type="checkbox"/> Lectures, discussions with students, experimental exercises, preparation and public defense of practical applied work.			
Score (maximum 100 points)			
<b>Pre-commitments</b>	<b>Poens</b>	<b>The final exam</b>	Poens
Activity during lectures	10	Written exam	30
Practical classes	10	Oral examination	30
Colloquia	20		
Seminars	10		
<i>Total</i>	50		60

<b>Study program:</b> Organic crop and livestock production			
<b>Type and level of study:</b> Bachelor academic studies			
<b>Course Title</b> INTRODUCTION TO MICROBIOLOGY			
<b>Teachers:</b> Dr. Mašić S. Aleksandar, Associate professor			
<b>Status:</b> Obligatory, semester III			
<b>ECTS:</b> 7			
<b>Prerequisite:</b> None			
<b>The goal of course</b> The goal of this subject is to point out the necessity of knowledge for basic presence and classification of microorganisms in environment (soil, water, air) , their mode of replication, pathogenicity and their use and application in modern biotechnology and organic agriculture The aim of the course is that the theoretical and practical knowledge about the role of microorganisms in continuous cycling of matter in the soil, since its inorganic to organic forms in the synthesis of organic matter, the emergence and preservation of productive soil properties, processes and humification dehumification, as well as the role and significance microorganisms in food plants and their completely dependent, relationship in the rhizosphere.			
<b>The outcome of the subject</b> To learn about the various types of microorganisms in environment and their role in biotechnology and organic agriculture.			
<b>Syllabus</b> <i>Theoretical study</i> – Introduction to microbiology. Classification and their replication. Microorganisms, their role in infection, pathogenicity and disease in animals. Importance of m.o in biotechnology and organic agriculture. The role of microorganisms in the soil. The processes of humification; The microbiology fertilizers (micro-organism in the preparation of manure, microorganisms in the preparation of compost, manure-microbial bioproducts, application of microbiological fertilizers. Microbiology of soil fertility (microorganisms in the preparation of herbal asimilativa, creating the structure of the soil microorganisms as indicators of soil fertility) <i>Practical classes</i> - Cultivation and identification of microorganisms in vitro in the laboratory Analysis of animal behavior in different circumstances intensive and extensive farming. Use of biofertilizers in crop production; Setting field trials on the topic of classic mineral and microbial fertilizers in crop production and the impact on yield ..			
<b>Literature</b> 1. Microbiology , Tortura, Funke, Case, 11th Edition, Pearson. 2. Lecture notes, Scientific papers			
<b>Number of lectures: 5</b>			Other Classes
Lectures: 3	Practices: 2	Other forms of teaching:	
<b>Teaching methods:</b> Lectures, discussions with students, experimental exercises, preparation and public defense of practical applied work.			
Score (maximum 100 points)			
<b>Pre-commitments</b>	<b>Poens</b>	<b>The final exam</b>	Poens
Participation	5	Written exam	30
Practical classes	10		
Colloquia	30		
Seminars	15		
<i>Total</i>	70		30



<b>Study program:</b> Organic crop and livestock production			
<b>Type and level of study:</b> Bachelor academic studies			
<b>Course Title:</b> BIODIVERSITY AND AGRICULTURE			
<b>Professors:</b> Dr. Snežana Štrbac, Assistant Professor			
<b>Status:</b> Compulsory, semester III			
<b>ECTS:</b> 7			
<b>Prerequisite:</b> None			
<b>The goal of the course</b> Introducing the causes and consequences of disruption and loss of biodiversity.			
<b>The outcome of the course</b> Acquisition of knowledge of the need for protection, conservation and enhancement of biodiversity and putting into operation sustainable development and wise use.			
<b>Syllabus</b> <i>Theoretical study</i> – The concept and importance of biodiversity, aspects of biodiversity conservation, anthropogenic factors that threaten biodiversity, negative effects of certain activities, international and national laws and regulations, threatening factors of pollution of air, water and soil, types of biodiversity, biodiversity of vulnerable ecosystems, conservation and restoration, protection strategy biodiversity. The basic principles of sustainable agriculture, the structure and function of natural and agroecosystems, biodiversity and sustainability of agroecosystems, agroecosystems and climate change, biodiversity of agroecosystems, sustainable agriculture - application and methodology. <i>Practical lessons</i> - Well-known examples related to the causes and consequences of harmful effects of environmental factors on biodiversity and measures for their removal, review case studies, visits to the protected natural resources, and cooperation with organizations for the protection of natural resources, participation in the relevant international conventions.			
<b>Literature</b> Joseph C. Cooper, Leslie Lipper, David Zilberman (2005). Agricultural Biodiversity and Biotechnology in Economic Development, Natural Resource Management and Policy, Springer US, 499 p.  Boris Kryštufek, Jane M. Reed (auth.), Huw I. Griffiths, Boris Kryštufek, Jane M. Reed (eds.) (2004). Balkan Biodiversity: Pattern and Process in the European Hotspot. Springer Netherlands. 358 p			
<b>Number of lectures:</b> 4			Other Lessons
Lectures: 2	Practices: 2	Other forms of teaching: Student research work:	
<b>Teaching methods:</b> <input type="checkbox"/> Lectures, discussions with students, experimental exercises, preparation and public defense of practical applied work.			
Score (maximum 100 points)			
<b>Pre-commitments</b>	<b>Points</b>	<b>The final exam</b>	<b>Points</b>
Activity during lectures	10	Written exam	
Practical lessons	10	Oral examination	50
Preliminary exams	2 x 10		
Seminars	10		
<i>Total</i>	50		50

<b>Study program:</b> Organic crop and livestock production
<b>Type and level of study:</b> Bachelor academic studies
<b>Course Title:</b> AGROBIOTECHNOLOGY
<b>Professors:</b> Dr. Panković M. Dejana, Full professor; Dr. Ljubinko B. Jovanović, Full professor; Dr. Jovanović, Full professor; Dr. Jovanović, Full professor;
<b>Status:</b> Compulsory, semester IV
<b>ECTS:</b> 8
<b>Prerequisite:</b> None
<p><b>The goal of the course</b></p> <p>The main objective of the course in agrobiotechnology is to provide students with the knowledge about and use of modern biotechnological methods in agriculture. In addition to mastering basic knowledge of molecular biology, the students should acquire the relationship between plants and animals and their environment, and biotic and abiotic stresses which are the most common cause of reduced production. Students learn about the biotechnological methods used to increase resistance to diseases by using non-GMO biotechnology methods.</p>
<p><b>The outcome of the course</b></p> <p>Training students for practical application of modern biotechnological methods in agriculture and adoption multidisciplinary approach to solving basic problems in agriculture</p>
<p><b>Syllabus</b></p> <p><i>Theoretical</i></p> <ol style="list-style-type: none"> <li>1. Introduction to Biotechnology (Definition and classification of biotechnology; Plant biotechnology; Basic concepts of genome);</li> <li>2. Gene analysis (analysis and amplification of nucleic acids; enzymes as tools; General concepts of PCR as a diagnostic method);</li> <li>3. Laboratory methods in the analysis of the genome of plants 1. (DNA extraction using the DNeasy Plant Mini Kit (Qiagen). Determination of extracted DNA by spectrophotometry - Nano view spectrophotometer);</li> <li>4. The growing of genetically resistant plants that are resistant to diseases (diseases of plants; measures to control plant diseases, application of biotechnology to increase the resistance of plants to disease);</li> <li>5. Increasing the case-study of sunflower resistance to downy mildew (sunflower and sunflower diseases, downy mildew, genes for resistance to downy mildew, use of molecular markers in sunflower breeding for resistance to downy mildew Genetic map Pl6 loci)</li> <li>6. Laboratory methods in the analysis of the genome of the plants 2. (PCR identification of the genes for resistance to diseases);</li> <li>7. Laboratory methods in the analysis of the genome of plants 3. (Digestion of the PCR products by restriction enzymes and electrophoresis);</li> <li>8. Useful microorganisms in agriculture (Application of Trichoderma-e to increase the resistance of plants to biotic and abiotic stresses)</li> <li>9. Laboratory methods in the analysis of the genome of microorganisms from soil 1. (DNA extraction from the soil and from pure cultures; Determination of extracted DNA by spectrophotometry - Nano view spectrophotometer);</li> <li>10. Laboratory methods in the analysis of the genome of microorganisms from soil 2. (PCR identification of strains of Trichoderma variability of ITS sequences);</li> <li>11. Biotechnology and environmental protection (environmental and health issues related to environmental protection, ethical and legal aspects of biotechnology);</li> </ol> <p><i>Practical lessons</i> - Preparation for laboratory work, introduction to laboratory equipment, making solutions, determination of pH, colorimetry and spectrophotometry (carbohydrates and proteins).</p>
<p><b>Literature</b></p> <p>интернационал, Београд  Watke P.S. Agro-Biotechnology for Sustainable Development. 2012. Pragun Publication  Reviewed by Nigel Chaffey (2009): The plant cytoskeleton: a key tool for agro-biotechnology  The plant cytoskeleton: a key tool for agro-biotechnology.  Berlin, Heidelberg, New York: Springer.</p>

Arie Altman and Paul Michael Hasegawa (2012):Plant Biotechnology and Agriculture:Prospects for the 21st Century. Academic press			
<b>Number of lectures: 6</b>			Other Lessons
Lectures: 3	Practices: 3	Other forms of teaching:	
<b>Teaching methods:</b>			
Score (maximum 100 points) Whole process is aimed to organize interactive and multimedia presentation. Presentations of students' seminar papers, and students' work involved in elaboration of various topics are an integral part of the teaching process. Lectures of experts from the country and abroad which contribute to better understanding and perception of the complexity of the subject. The practical part of the training takes place through laboratory exercises in groups, watching and discussion of film material and consultations.			
<b>Pre-commitments</b>	<b>Points</b>	<b>The final exam</b>	<b>Points</b>
Activity during lectures	10	Written exam	40
Practical lessons	10	Oral examination	
Preliminary exam	20		
Seminars	20		
<i>Total</i>	60		40

<b>Study program:</b> Organic crop and livestock production			
<b>Type and level of study:</b> Bachelor academic studies			
<b>Course Title:</b> BASICS OF GOOD AGRICULTURAL PRACTICE AND INTEGRAL AGRICULTURE			
<b>Professors:</b> Dr. Pavlović M. Milanko, Associate Professor; Dr. Dragan Perović, Full Professor			
<b>Status:</b> Compulsory, semester IV			
<b>ECTS:</b> 6			
<b>Prerequisite:</b> None			
<b>The goal of the course</b> Students will be educated to apply the principles of good agricultural practices and integrated production. During teaching, students should acquire knowledge about natural resources, soil, water, air and biodiversity by applied sustainable agricultural systems. They will learn about standards of good agricultural practices and integrated production as well as steps in obtaining the certificate.			
<b>The outcome of the course</b> Students have mastered the basics and applied operations of good agricultural practices and principles of integrated agriculture. They will be able to organize these forms of agricultural production, take steps on product certification as well as take care and improve natural resources, health and animal welfare.			
<b>Syllabus</b> <i>Theoretical study</i> Definition and historical development of integrated agriculture, the most important agricultural systems (traditional, conventional, sustainable). Natural resources and good agricultural practise in conservation of natural resources: soil (genesis, traits, fertility, structure and content of organic matter, activity of microorganisms and other), water (role and importance of water in agriculture, use, nitrate directive, erosion, wastewater, water protection), air (unpleasant odours, smoke). Good agricultural practise in each phase of production (request, principles, codex), examples of production of selected cultivars (tillage - machinery, equipment, tools, results, fertilizers and fertilization, crop rotation - vegetable, vegetable - crop farming, farm management - connection to the importance of livestock - manure, slurry, animal work, soil fertility, seed, crop care measures with the emphasis on irrigation effects, yield, soil, erosion, drainage, crop harvesting, storing fruits and other relevant facts necessary for successful manufacturing. Good production and hygiene practise, standards and certification in agriculture: GlobalGap, IP, ISO, Kochoer, Halal, BIOS, HACCP). GlobalGap: standard characteristics, documents, structure, requests, certification – individual and group. Integrated agriculture (principles, goals, structure). Integrated mineral nutrition, integrated crop protection (agritechnical, biological and chemical treatments), prognostic reporting service. Standard and certification of integrated agriculture. <i>Practical lessons</i> – Practical work by areas, taking soil samples and analysis, crop rotation planning, analysis of control points in certification process, visit to successful farms and institutions.			
<b>Literature</b> Protecting our Water, Soil and Air A Code of Good Agricultural Practice for farmers, growers and land managers <a href="https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/268691/pb13558-cogap-131223.pdf">https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/268691/pb13558-cogap-131223.pdf</a> Jill E. Hobbs (2003): Incentives and disincentives for the adoption of Good Agricultural Practices. Rome			
<b>Number of lectures:5</b>			Other Lessons
Lectures: 3	Practices: 2	Other forms of teaching: Student research work:	
<b>Teaching methods:</b> □ Lectures, discussions with students, experimental exercises, preparation and public defense of practical applied work.			
Score (maximum 100 points)			
<b>Pre-commitments</b>	<b>Points</b>	<b>The final exam</b>	<b>Points</b>
Activity during lectures	10	Written exam	
Practical lessons	10	Oral examination	50
Preliminary exam	20		

Seminars	10		
<i>Total</i>	50		50

<b>Study program:</b> Organic crop and livestock production			
<b>Type and level of study:</b> Bachelor academic studies			
<b>Course Title:</b> WATER PROTECTION AND MANAGEMENT IN AGRICULTURE			
<b>Professors:</b> Dr. Jelena Z. Andrejić, Assistant Professor			
<b>Status:</b> Compulsory, semester IV			
<b>ECTS:</b> 7			
<b>Prerequisite:</b> None			
<b>The goal of the course</b> Acquiring the knowledge of basic characteristics of surface waters, their use in the function of organic crops and selection of appropriate system for their exploitation. The impact of climate change on the status of surface waters and influence peddling in the ecosystem. Basic characteristics of running or standing water. Definition of the exploitation of surface and ground water in agriculture by applying basic principles of environmental protection. Application possibilities of monitoring water quality to maintain organic crops. The basics of using water for sustainable development in agriculture and their rational use.			
<b>The outcome of the course</b> Knowledge of the basic elements of water use and protection in organic agriculture. The ability of water use in agriculture for the cultivation of agricultural crops, the ability to choose and implement the measures of protection of water from conventional farming activities, the ability to define the regime of protective use of funds for agriculture in order to protect water and the environment, capacity planning of water use in agriculture, the capability of determining the needs for water, water balance and rational use of water in agriculture			
<b>Syllabus</b> <i>Theoretical study</i> - The basics of water use in agriculture and hydrological cycle. Water use and agriculture, the role of water in photosynthesis, evapotranspiration and water crops, the losses due to evaporation, discharges and infiltration, water consumption in agriculture, irrigation, excessive use of water resources, water quality and use, total water use in agriculture, pollution and protection of water and agriculture, pesticides, herbicides, fertilizers and livestock waste, sediment and erosion, salinization. Precipitation and constraints of agricultural production, specific requirements of water for crops, the influence of climatic factors on crop requirements for water, influence of spatial and temporal distribution of rainfall and productivity in agriculture. Rational use of water in agriculture, plant cover to reduce water needs and protect against excessive losses of cover (biomass, live blankets, plastic sheets), sowing without ploughing, sowing by contour, measures of retention and slowing runoff, protective strips, the rotation of crops and so on. <i>Practical lessons</i> Measuring the quality of water from selected sites like streams, wells and rain water Students have a group task to carry out measurements of basic physical-chemical parameters of water on their properties (tap water, water for irrigation, rain water, water from streams or water from wells). This is followed by written and oral presentation of the results. Visiting the irrigation systems of large organic producers (e.g. Selenča).			
<b>Literature</b> 1. Molden, D. ed, (2007). Water for Food, Water for Life. Earthscan, London and International Water Management Colombo Institute. 2. Pimentel et al. (1982). "Water Resources in Food and Energy Production," BioScience 32, no. 11 (1982) 861–867. 3. Pimentel, David et al. "Water Resources: Agriculture, the Environment and Society." Bioscience 47(2): 97–106. 4. Postel, S. (1999). Pillar of Sand: Can the Irrigation Miracle Last? New York: W.W. Norton & Company. 5. Molden, D. & Oweis T. Y. (2007). Pathways for increasing agricultural water productivity.			
<b>Number of lectures: 4</b>			Other Lessons
Lectures: 2	Practices: 2	Other forms of teaching: Student research work:	
<b>Teaching methods:</b> <input type="checkbox"/> Lectures, discussions with students, experimental exercises, preparation and public defense			

of practical applied work.

Score (maximum 100 points)

<b>Pre-commitments</b>	<b>Points</b>	<b>The final exam</b>	<b>Points</b>
Activity during lectures	20	Written exam	35
Practical lessons	10	Oral examination	15
Preliminary exam			
Seminars	20		
<i>Total</i>	50		50

<b>Study program:</b> Organic crop and livestock production			
<b>Type and level of study:</b> Bachelor academic studies			
<b>Course Title:</b> AGRICULTURE AND ENVIRONMENTAL PROTECTION			
<b>Teachers:</b> Dr. Jovanović B. Ljubinko, Full professor			
<b>Status:</b> Obligatory, semester IV			
<b>ECTS:</b> 6			
<b>Prerequisite:</b> None			
<b>The goal of course</b> Understanding the functioning of agroecosystems and the application of ecological concepts in the design and management of agroecosystems, the impact of agricultural production on the environment, multidisciplinary analysis of the role of agroecosystems in the environment.			
<b>The outcome of the subject</b> Students are trained to recognize and solve problems in agroecosystems and are capable of critical analysis in applied ecology in agriculture.			
<b>Syllabus</b> <i>Theoretical study</i> – Agroecosystems - structure and function, disturbances in agroecosystems, energy in agroecosystems, biodiversity in agroecosystems, sustainable use of resources in agriculture, disorders in agroecosystem as a result of excessive use of fertilizers and pesticides, sustainable management of agroecosystems. <i>Practical classes</i> - For each chapter of the theoretical classes, practical workshops and seminars will be organized.			
Literature 1. Huber, S., Prokop, G., Arrouays, D., Banko, G., Bispo, A. (2009): Environmental Assesment of Soil for Monitoring Italy, Elsevier. 2.Patrick C. Kangas (2004): ECOLOGICAL ENGINEERING. Principles and Practice. LEWIS PUBLISHERS A CRC Press Company Boca Raton London New York Washington, D.C. 3.Andrew H. Cobb and John P.H. Reade (2010): Herbicides and Plant Physiology Second Edition A John Wiley & Sons, Ltd., 5.Group of author.(2007): Soil Microbiology, Ecology, and Biochemistry Editor Eldor A. Paul 6.John T. Cookson (1995): Bioremediation Engineering Design and application. McGrawHill, Inc.			
<b>Number of lectures: 4</b>			Other Classes
Lectures: 2	Practices: 2	Other forms of teaching:	
Student research work:			
<b>Teaching methods:</b> □ Lectures, discussions with students, experimental exercises, preparation and public defense of practical applied work			
Score (maximum 100 points)			
<b>Pre-commitments</b>	<b>Poens</b>	<b>The final exam</b>	<b>Poens</b>
Activity during lectures	10	Written exam	30
Practical classes	10	Oral examination	20
Colloquia	20		
Seminars	10		
<i>Total</i>	50		50



<b>Study program:</b> Organic crop and livestock production			
<b>Type and level of study:</b> Bachelor academic studies			
<b>Course Title:</b> PRACTICAL TRAINING			
<b>Professors:</b> Dr. Olivera P. Nikolić, Associate Professor			
<b>Status:</b> Compulsory, semester IV			
<b>ECTS:</b> 3			
<b>Prerequisite:</b> None			
<b>The goal of the course</b> To introduce students to the basic operations and procedures in agriculture. Students should independently complete all the agro technical operations which are carried out in the field.			
<b>The outcome of the course</b> After completing the practice, students will be familiar with the techniques of performing cultural practices. Students will learn the approach to solving specific problems in agroecological production.			
<b>Syllabus</b> During the day, students will be involved in working on the agricultural farm and current seasonal crops. The planned work includes combating weeds in planting, harvesting, hybridization, irrigation, sorting, determining yields. Parallel to the above tasks, the students will be familiar with the most advanced approach to research that is carried out within the experimental work to which they are committed.			
<b>Literature</b>			
<b>Number of lectures:</b>			Other Lessons
Lectures:	Practices:3	Other forms of teaching: 3	
Student research work:			
<b>Teaching methods:</b> <input type="checkbox"/> Practical instruction in the field, oral and practical reasoning about the working operations that are carried out during the day. The emphasis is on practical and presentation work.			
Score (maximum 100 points)			
<b>Pre-commitments</b>	<b>Points</b>	<b>The final exam</b>	<b>Points</b>
Activity during lectures	40	Written exam	
Practical lessons		Oral examination	
Preliminary exams	30		
Seminars	30		
<i>Total</i>	100		

<b>Study program:</b> Organic crop and livestock production	
<b>Type and level of study:</b> Bachelor academic studies	
<b>Course Title:</b> ORGANIC CROP PRODUCTION	
<b>Professors:</b> Dr. Pavlović M. Milanko, Associate Professor	
<b>Status:</b> Compulsory, semester V	
<b>ECTS:</b> 8	
<b>Prerequisite:</b> None	
<b>The goal of the course</b> The objective of the course in organic farming is to provide students with knowledge of cropping on the principles and requirements of organic farming. In addition to the yield and quality of products, the system of environmental management in crop production in terms of improving biodiversity is of almost identical importance, as well as natural cycling of matter, improvement of environmental protection and obtaining healthy and safe products.	
<b>The outcome of the course</b> Enabling students for independent and professional organization of organic farming, by applying the principles and methods of organic production in crop technology of main and alternative plants. Proper selection of adaptable varieties and hybrids, non GMO, agricultural crops under specific ecological conditions must be in compliance with the requirements of a consumer market and the expected financial effects. This subject allows the registration of differences between conventional and ecological farming and transformation systems into sustainable management of agricultural production.	
<b>Syllabus</b> <i>Theoretical study -</i> The concept and characteristics of crop production, traditional, conventional and organic farming (characteristics and differences). Basic principles and goals of organic agriculture. Legislative of organic production (Law on Organic Production of Republic of Serbia, EU acts, Codex Alimentarius for organic agriculture, NOP, private standards), percentage and importance of organic (farming) production in our country and abroad. Technology in organic crop production, depending on the biological characteristics of species and varieties (tolerant, healthy and certified seeds), growing conditions, application of agrotechnical measures unfavorable to the development of pathogens and pests, crop rotation, the use of physical and mechanical measures and tools for tillage (conservation structures, flora, fauna and processes in the soil). The use of organic and microbial fertilizers, natural chemicals, biological control, integrated use of permitted chemicals, harvesting and storage of products, the possibility of using organic products. Necessary plant requirements: temperature, water, air, mineral nutrients will be studied. Control and certification in organic farming. Origins, botanic classification, prevalence, economic and nutritional importance, variability of use, areas and yields of the most important and alternative crops will be studied, too. Organic production of real grains (wheat, barley, oats, triticale), especially less cultivated species of high biological value (rye, durum wheat and spelled). Organic farming of sour wheat (maize, sorghum, millet), pseudo cereals (buckwheat, amaranth), grain legumes (soybean, peas, beans, lentils, Vigna, chickpeas, peanuts), oil crops (sunflower, poppy seed oil, black mustard, safflower, marigold), energy type plants (canola, sugar beet), textile plants (hemp, flax) and root - tubers (potatoes, Jerusalem artichokes, chicory). Comparative planting technology in conventional and organic production of studied crops. <i>Practical lessons -</i> Morphology of field types, characteristics of varieties for different purposes of use, less cultivated species in our fields, terrain exercise, tour of producers.	
<b>Literature</b> 1. Bavec F, Bavec M. (2006): Organic Production and Use of Alternative Crops, Taylor and Francis (CRC). 2. Elisa Morgera, Carmen Bullón Caro, Gracia Marín Durán. (2012): Organic agriculture and the law. <a href="http://www.fao.org/docrep/016/i2718e/i2718e.pdf">http://www.fao.org/docrep/016/i2718e/i2718e.pdf</a> 3. Lampkin, N. (2010): Organic farming myth and reality, World agriculture, 1, 46-53. 4. FAO/WHO Codex Alimentarius commission: Codex Alimentarius. Organically Produced Foods, 2007.	
<b>Number of lectures:</b> 6	Other Lessons

Lectures: 3	Practices: 3	Other forms of teaching:	Student research work:	
<b>Teaching methods:</b> <input type="checkbox"/> Lectures, discussions with students, experimental exercises, preparation and public defense of practical applied work.				
Score (maximum 100 points)				
<b>Pre-commitments</b>		<b>Points</b>	<b>The final exam</b>	<b>Points</b>
Activity during lectures		10	Written exam	
Practical lessons		10	Oral examination	40
Preliminary exams		2x10=20		
Seminars		20		
<i>Total</i>		60		40

<b>Study program:</b> Organic crop and livestock production			
<b>Type and level of study:</b> Bachelor academic studies			
<b>Course Title:</b> ORGANIC ANIMAL HUSBANDRY			
<b>Professors:</b> Dr. Slađan Rašić, Assistant Professor			
<b>Status:</b> Compulsory, semester V			
ECTS: 8			
<b>Prerequisite:</b> None			
<b>The goal of the course</b> The application of appropriate teaching methods will enable students to know and understand the origin of domestic animals, the environmental aspects of production systems livestock, breed and its characteristics, reproductive processes and factors affecting the fertility of domestic animals; the process of growth and development of domestic animals, the principles of defining breeding programs and the implementation of certain breeding methods, basic ethological characteristics of domestic animals, the nature and type of control of productivity and the necessary conditions for the production of safe food. During the course, special attention is paid to regulatory and legal provisions governing organic livestock production, with special emphasis on the length of time the conversion and transition from conventional to organic way of breeding of domestic animals and cultivating land.			
<b>The outcome of the course</b> Students should be able to explain the origin of domestic animals and describe the changes that have occurred during the process of domestication; describe and distinguish major systems livestock production; explain and describe the most important characteristics of certain breed types of domestic animals; explain basic reproductive characteristics and describe the factors that influence fertility of domestic animals; explain the processes of growth and development of domestic animals; describe, compare and contrast various methods of cultivation; recognize and explain basic ethological characteristics of domestic animals; distinguish between different types of control productivity as well as demonstrate the knowledge and present certain results through teamwork. Also, students must learn the most efficient systems of transition from conventional to organic livestock production and management skills on the farms that produce by applying organic principles.			
<b>Syllabus</b> <i>Theoretical study</i> – Importance and state animal husbandry; The origin of domestic animals: the time and place of domestication, the changes caused by domestication; Production systems Livestock: manure and grazing systems, intensive and extensive systems, the impact of livestock production on the environment; Background: concept, characteristics, classification of breed; Fertility and reproduction of domestic animals: sexual maturity, sexual cycle, gametes, fertilization, limiting factors, reproductive technologies; The growth and development of farm animals: growth parameters, growth phases, growth control; Methods of growing domestic animals: breeding goals and programs, growing pure breed, cross breeding. Ethology of domestic animals: behavior, genetics and selection, individual behavior, sexual behavior of animals, maternal behavior, basics of social behavior; Control productivity, security of production and product quality: the importance and types of controls in livestock production, control of productivity, good zoo technical / breeding practices, measures for improvement. Fundamental principles of organic production, production control process from the standpoint of organic principles, risks in the rate of conversion from conventional to organic livestock production. <i>Practical lessons</i> –. Exercises: marking and identification of farm animals; Measurement of farm animals; Visual assessments of domestic animals; Registration records in livestock; Marking fertility in domestic animals			
<b>Literature</b> Flack S. (2011) Organic Dairy Production, Chelsea Green Publishing  Laura Telford & Anne Macey (2014): Organic Livestock Handbook, Acres, U.S.A.			
<b>Number of lectures: 6</b>			Other Lessons
Lectures: 3	Practices: 3	Other forms of teaching: Student research work:	
<b>Teaching methods:</b> Lectures, interactive teaching, discussions with students, experimental exercises, writing and public defense of Applied practical work			

Score (maximum 100 points)			
<b>Pre-commitments</b>	<b>Points</b>	<b>The final exam</b>	<b>Points</b>
Activity during lectures	10	Written exam	25
Practical lessons	10	Oral examination	25
Preliminary exam	15		
Seminars	15		
<i>Total</i>	50		50

<b>Study program:</b> Environmental governance and corporate responsibility			
<b>Type and level of study:</b> Bachelor academic studies			
<b>Course Title:</b> Sustainable Use of Natural Resources			
<b>Teachers:</b> Dr. Panin S. Biljana, assistant professor			
<b>Status:</b> Obligatory subject, semester V			
<b>ECTS:</b> 6			
<b>Prerequisite:</b> None			
<b>The goal of course</b> The main objective of this course is to introduce students to the importance of natural resources as well as social and economic factors of their use in the future, as a basis of a complex planning approach in the field of environmental protection. Organic agriculture is integral system of production that promotes and increases agrosystem biodiversity, and sustainable use of natural resources, thus the goal of the course is to introduce students with sustainable natural resources use.			
<b>The outcome of the subject</b> This course will enable students to understand the basic problems associated with the use of natural resources. Students will be able to assess sustainability of natural resources use and they will be able to make suggestions for improvement in practice.			
<b>Syllabus</b> <i>Theoretical study</i> – Natural resources in the past, Present and future challenges of our time, Renewable and non-renewable natural resources, Land as a resource, Sustainable agriculture, Water as a resource, Fisheries, Forests as a resource, Disappearance of certain plant and animal species, Protected areas, Air pollution, Mineral resources, Energy sources, Fossil fuels, Emissions and discharge of pollutants to air, water and land; Prevention, control and remediation methods <i>Practical classes</i> - Discussions and exercises on natural resources use case studies			
<b>Literature</b> Chrias, D.D., Reganon, J.P., Owen, O.S. (2002): Natural Resource Conservation. Management for a Sustainable Future. Eighth edition. Prentice Hall			
<b>Number of lectures: 4</b>			Other Classes
Lectures: 2	Practices: 2	Other forms of teaching:	
<b>Teaching methods:</b> ☐ Lectures, practices, short repertoria, discussions, presentations			
Score (maximum 100 points)			
<b>Pre-commitments</b>	<b>Poens</b>	<b>The final exam</b>	<b>Poens</b>
Activity during lectures	10	Written exam	50
Practical classes	20	Oral examination	
Colloquia			
Seminars	20		
<i>Total</i>	50		50

<b>Study program:</b> Organic crop and livestock production				
<b>Type and level of study:</b> Bachelor academic studies				
<b>Course Title:</b> FERTILIZATION IN ORGANIC AGRICULTURE				
<b>Professors:</b> Dr. Olivera P. Nikolić, Associate Professor				
<b>Status:</b> Optional 1, semester V				
<b>ECTS:</b> 8				
<b>Prerequisite:</b> None				
<b>The goal of the course</b> The goal of the course is that students, within the broader concept of biological farming and sustainable crop production, acquire the basic legal standards related to the use of mineral fertilizers and other, productive potentials of this kind of cropping and its effects on the ecosystem. A part of the program is related to mineral nutrition, which is the basis for understanding the fertilizer as complex cultural practice in conventional and organic production.				
<b>The outcome of the course</b> For existing conventional cropping systems there are a whole series of problems, which are the result of intensive utilization of land, the application of fertilizers and various chemicals. It is therefore considered that, introduction to the basic assumptions of standard application of scientific farming methods and the possibilities of their adaptation requirements faced by modern crop production without drastic effects on the yield of the product, can significantly contribute to finding new technological solutions in the field. Ability of students in this area is a necessary precondition for serious consideration of practical issues and problems of organic crop production, which is imposed as necessity for modern man.				
<b>Syllabus</b> <i>Theoretical study</i> – Introduction. Basic concepts in the domain of organic farming. Cultural practices in organic production. Mineral nutrition, useful and necessary elements. Organs by which plants adopt ions, mechanism of ion transport, nutrient solutions. Physiological acid and alkaline salts. Indicators of mineral nutrition. Factors influencing the adoption and content of ions in the plant. Mineral nutrition and the environment. The role of mineral elements in the life cycle of plants. The movement of substances in the plant. Fertilization: History of Science of fertilization, fertilizers and fertilization, distribution of fertilizers, forms of fertilization - basic and additional fertilizing, factors affecting the determination of mineral fertilizers, fertilization in organic farming. Legislation related to organic production, humification, organic fertilizers. <i>Practical lessons</i> – Visiting the property where principles of organic production are applied - field exercise. Practice on certificated properties about composting and manure processing Composting in yard conditions				
<b>Literature</b> 1. Organic Manures, Dr. Krishan Chandra, 2005. <a href="http://ncof.dacnet.nic.in/Training_manuals/Training_manuals_in_English/Organicmanures.pdf">http://ncof.dacnet.nic.in/Training_manuals/Training_manuals_in_English/Organicmanures.pdf</a> 2. Composting, <a href="http://www.nswaienviis.nic.in/">www.nswaienviis.nic.in/</a> 3. Benefits and limitations of biofertilization in agricultural practices, J S Carvajal Muñoz and C E Carmona-Garcia, 2012. <a href="http://www.lrrd.org/lrrd24/3/carv24043.htm">http://www.lrrd.org/lrrd24/3/carv24043.htm</a>				
<b>Number of lectures: 6</b>			Other Lessons	
Lectures: 3	Practices: 3	Other forms of teaching:		
Student research work:				
<b>Teaching methods:</b>				
Score (maximum 100 points)				
<b>Pre-commitments</b>		<b>Points</b>	<b>The final exam</b>	<b>Points</b>
Activity during lectures		10	Written exam	
Practical lessons		10	Oral examination	40

Preliminary exams	$3 \times 10 = 30$		
Seminars	10		
<i>Total</i>	60		40



<b>Study program:</b> Organic crop and livestock production			
<b>Type and level of study:</b> Bachelor academic studies			
<b>Course Title:</b> ETHOLOGY OF ANIMALS			
<b>Teachers:</b> Dr Aleksandar Mašić, Associate professor			
<b>Status:</b> Elective I, V semester			
<b>ECTS:</b> 8			
<b>Prerequisite:</b> None			
<b>The goal of course</b> The goal of this subject is to point out the necessity of knowledge for the physiological and psychological status of the animals, which is related to the type, race, gender, age and microclimate in indoor facilities and the wider environment.			
<b>The outcome of the subject</b> To learn about the psychological and physical characteristics of the animals, in the intensive and extensive farming conditions, in order to secure the conditions for their well-being.			
<b>Syllabus</b> <i>Theoretical study</i> - Introduction to Ethology. The behavior of animals (in the group). Behavior with respect to food intake. The behavior in reproduction. The influence of environmental factors on behavior of the animals. Adaptation to stress, well-being and behavior of the animals. Ethology and productivity of the animals. Social and storage space, and animal behavior. Disruptive behavior of animals and animal suffering and pain. Behavior of sick animals. Basics of applied ethology of domestic animals and the environment, the legal and biological norms. <i>Practical classes</i> - Analysis of animal behavior in different circumstances intensive and extensive farming.			
<b>Literature</b> Stephen J. Birchard, Robert G. Sherding. 2006. Saunders Manual of Small Animal Practice, Third Edition. Saunders pub. 1888p Per Jensen. 2009: The Ethology of Domestic Animals: An Introductory Text, CABI, North American office.  Andrew F. Fraser 1985: Ethology of Farm Animals: A Comprehensive Study of the Behavioural Features of the Common Farm Animals, Elsevier. Michael W. Fox. 1986: Laboratory Animal Husbandry: Ethology, Welfare, and Experimental Variables, New York Press.			
<b>Number of lectures: 6</b>			Other Classes
Lectures: 3	Practices: 3	Other forms of teaching:	
Student research work:			
<b>Teaching methods:</b> Lectures, discussions with students, experimental exercises, preparation and public defense of practical applied work.			
Score (maximum 100 points)			
<b>Pre-commitments</b>	<b>Poens</b>	<b>The final exam</b>	Poens
Activity during lectures	10	Written exam	
Practical classes	10	Oral examination	30
Colloquia	30		
Seminars	20		
<i>Total</i>	70		30

<b>Study program:</b> Organic crop and livestock production			
<b>Type and level of study:</b> Bachelor academic studies			
<b>Course Title:</b> ORGANIC BEEKEEPING			
<b>Professors:</b> Dr. Slađan Rašić, Assistant Professor			
<b>Status:</b> Compulsory, semester VI			
<b>ECTS</b> 6			
<b>Prerequisite:</b> None			
<b>The goal of the course</b> The course should enable student to acquire knowledge about the anatomy of honeybee and its characteristics under the influence of environmental factors, principles of reproduction and development, the importance of bees as pollinators, technologies for production of bee products and rehabilitation abnormalities in brood and bees. Also, the course involves methods of obtaining quality queen bees, selection and breeding of honey bees, and basic principles of genetics and breeding of bees. Particular attention is paid to the process and time of conversion from conventional organic beekeeping, production of organic honey, organic royal jelly, organic pollen, organic propolis and especially organic wax. Also, the objective is to draw attention to the existing legal provisions related to the production of beekeeping, the risks and challenges that accompany the introduction of organic beekeeping production, particularly to adequate food of bees, purchase of organic wax, organic sugar, adequate protective resources, ecological preparations, etc.			
<b>The outcome of the course</b> The students should demonstrate knowledge, understanding and recognition of the place and role of honey bees in the ecosystem, the knowledge about the structure of honey bee, bee breeding and obtaining bee products, the most important diseases and pests of bees and brood, use of bees in the pollination of cultivated plants, maintenance of the apiary and the use of modern equipment and materials in beekeeping; also, students should master all methods of breeding high quality queen bees and swarms, the methods of organic production of honey, royal jelly, pollen, propolis and wax, bee breeding which allows the introduction of organic beekeeping and the speedy transition from conventional to organic beekeeping.			
<b>Syllabus</b> <i>Theoretical study</i> – The course is divided into several sections: Systematic types and places, breeds and ecotypes of bees; Biological properties of bee nests; Life colony: the division of labor and bee breeding; Genetics, selection and refining honey bee. Bee breeding: beehives with mobile and immobile honeycombs, equipment and supplies, work in the apiary, breeding queen, natural and artificial swarming, moving bees; Hygiene and sanitation in beekeeping: non-communicable and infectious diseases, pests of bees; The main industrial frequency constant and promising honey and pollination of plants and dressing, harvesting honey plants, composition and quantity of nectar; the difference between conventional and organic bee products, the use of organic protection means against bee diseases, the legal provisions related to organic production in beekeeping, organic beekeeping specificity compared to other organic livestock production, special measures in extraordinary conditions of organic beekeeping. Field work: introduction to beekeeping technology in various types of apiaries. Introduction to technology of obtaining bee products in terms of organic production. <i>Practical lessons</i> – Study research work. Introduction to technology and use of beekeeping equipment and tools in beekeeping. Field work: introduction to beekeeping technology in various types of apiaries (organic and conventional).			
<b>Literature</b> Rinderer T. (1986): Bee genetics and breedings, Academic Press, USA Conrad, R. (2007): Natural Beekeeping: Organic Approaches to Modern Apiculture, Acres U.S.A. Wang An and Peng Wen Jun (2011): Books ecological beekeeping ecological farming techniques, China Agricultural Pub Mader, E., Spivak, M., Evans, E. (2010): Managing Alternative Pollinators, Ithaka, NewYork.			
<b>Number of lectures: 4</b>			Other Lessons
Lectures:	Practices:	Other forms of	

2	2	teaching:		
<b>Teaching methods:</b> Theoretical and practical lessons combined with interactive teaching will be held in all areas. During the lessons testing of knowledge is carried out, and finally practical training (exercise) is tested.				
Score (maximum 100 points)				
<b>Pre-commitments</b>		<b>Points</b>	<b>The final exam</b>	<b>Points</b>
Activity during lectures		10	Written exam	
Practical lessons		10	Oral examination	40
Preliminary exams		3 x 10 = 30		
Seminars		10		
<i>Total</i>		60		40

<b>Study program:</b> Organic crop and livestock production			
<b>Type and level of study:</b> Bachelor academic studies			
<b>Course Title:</b> ECOLOGICAL FRUIT PRODUCTION			
<b>Professors:</b> Dr. Slobodan Milenković, Full Professor			
<b>Status:</b> Optional 2, semester VI			
<b>ECTS 7</b>			
<b>Prerequisite:</b> None			
<b>The goal of the course</b> Transfer the students' knowledge about the characteristics of organic production of certain species of fruit trees, the current and future varieties and technology of cultivation, harvesting and procedures with fruits by types of fruit trees.			
<b>The outcome of the course</b> The acquired knowledge and skills about the technology of cultivation and exploitation of indigenous fruits and new varieties and organic farming system. Sustainable use of genetic resources of fruit trees and their use for the purpose of creating new varieties, the variability of resource conservation and use of their fruits in the organic fruit production.			
<b>Syllabus</b> <i>Theoretical study</i> – Introduction to the special bio horticulture, biological and ecological characteristics of the type of fruit and the varieties within each species. Specific plantation, agro-technical measures and Pomotechnical in organic fruit by production of species and varieties of fruit trees of each species (species with pome, stone fruit, berry fruits). Specifics of varieties and organic production. Growing technology in the organic system; the most important fruit species: apple, plum, cherry, raspberry, strawberry.  <i>Practical Exercise</i> , Other modes of teaching, Study research work, Assortment of the species of fruit trees (apple, pear, quince, rowan, plums, apricots, peaches, cherries, cherry, raspberry, strawberry, blackberry, currant, gooseberry, blueberry, etc.). Field exercises in plantation establishment, the application of management practices during the production cycle by type of fruit in organic production. Visits to farms with certified organic production of fruit.			
<b>Literature</b> Landis, J. N., Sanchez, J. E., Lenhart, R. H., Edson, C. E., Bird, G. W., Swinton, S. M. (2002): Fruit Crop Ecology and Management. Michigan State University Extension Bulletin E-2759. Phillips, M. (2011):The Holistic Orchard. The Fruits and Berries the Biological Way. Chelsea Group Publishing. White River Junction, Vermont. Lind, K., Lafer, K., Schloffer, G. I., Meister, H. (2003):Organic Fruti Growing. CABI Publishing. Wallingford. Oxon. UK.			
<b>Number of lectures: 4</b>			Other Lessons
Lectures: 2	Practices: 2	Other forms of teaching:	
Student research work:			
<b>Teaching methods:</b> Interactive teaching with video presentation, questions and discussion. Practical exercises on the plants, fruit trees and sketching. Visits to farms and businesses with certificated fruit production.			
Score (maximum 100 points)			
<b>Pre-commitments</b>	<b>Points</b>	<b>The final exam</b>	<b>Points</b>
Activity during lectures	10	Written exam	
Practical lessons	10	Oral examination	40
Preliminary exams	3 x 10 = 30		
Seminars	10		
<i>Total</i>	60		40

<b>Study program:</b> Organic crop and livestock production				
<b>Type and level of study:</b> Bachelor academic studies				
<b>Course Title:</b> POPULATION GENETICS OF DOMESTIC AND CULTIVATED ANIMALS				
<b>Professors:</b> Dr. Slađan Rašić, Assistant Professor				
<b>Status:</b> Optional 2, semester VI				
<b>ECTS 7</b>				
<b>Prerequisite:</b> None				
<b>The goal of the course</b> To enable students to acquaint with and understand basics of inherited and environmental factors of the variability of quantitative traits in domestic animals and basic genetic parameters, and practically apply them in assessing the breeding value and selection effect, routes and methods of breeding and selection, the importance of linear model in breeding domestic animals, with the use of appropriate active teaching methods and the use of modern learning resources.				
<b>The outcome of the course</b> At the end of the course the students should explain the concept and characteristics of the population of domestic animals and cultivated; classify and describe the factors of change in genotype frequencies in population; summarize and explain the influence of genotype and environmental factors on the phenotypic variability of quantitative traits in domestic animals; using different methods of assessment heritability (heritability), repeatability and connection properties. Also, the students should master the application of appropriate methods of selection and assessment of the progress of selection (selection effect), calculation of the coefficient of relationship and inbreeding in the population, estimation of breeding values of domestic animals, application of the principles and methods of population genetics and breeding of domestic animals in the practical and scientific research.				
<b>Syllabus</b> <i>Theoretical study</i> – Genetic structure of the population. Continual variation. Basics of analysis of variance and covariance. Additive, epistatic dominant gene effect. The heritability, repeatability and correlations. Basic principles, methods and effect selection. Assessment methods of breeding value. Relationship and inbreeding. Crossing and heterosis. Directions of breeding of domestic animals and cultivated. The importance of linear method in the breeding of domestic animals and cultivated. Application of new methods in breeding animals (QTL and genomic selection) <i>Practical lessons</i> – Study research work Variability of quantitative traits. Statistical estimation of population parameters and testing hypotheses about their significance. Analysis of gene frequencies and genetic equilibrium. Calculation of genetic parameters (heritability coefficient, repeatability and correlations) and their application in breeding of domestic animals and cultivated. Determination of the coefficient of kinship and inbreeding. Calculation of the effects of changes in the selection and generation of offspring. Estimation of breeding values of individuals by using different methods and models.				
<b>Literature</b> 1. Bourdon, R.M. (2000): Understanding Animal Breeding, Prentice-Hall, Inc. 2. Pirchner F. (1969): Population genetic in animal breeding, W.H Freeman and co., San Francisco				
<b>Number of lectures: 4</b>			Other Lessons	
Lectures: 2	Practices: 2	Other forms of teaching: Student research work:		
<b>Teaching methods:</b> Theoretical and practical lessons combined with interactive teaching and creating term papers. Planned and appropriate field trips and visits to trade fairs and centres for artificial insemination. Testing knowledge in lectures and exercises will be carried out through test				
Score (maximum 100 points)				
<b>Pre-commitments</b>		<b>Points</b>	<b>The final exam</b>	<b>Points</b>
Activity during lectures		10	Written exam	25
Practical lessons		10	Oral examination	25

Preliminary exam	15		
Seminars	15		
<i>Total</i>	50		50

<b>Study program:</b> Organic crop and livestock production			
<b>Type and level of study:</b> Bachelor academic studies			
<b>Course Title:</b> GENERAL PLANT PROTECTION IN ECOLOGICAL AGRICULTURE			
<b>Professors:</b> Dr. Slobodan Milenković, Full professr			
<b>Status:</b> Optional 3, semester VI			
<b>ECTS: 8</b>			
<b>Prerequisite:</b> None			
<b>The goal of the course</b> Transfer the students' knowledge on plant protection in organic agriculture as a set of harmonized methods and procedures in the economical and environmentally friendly way to manage populations of harmful organisms in crops, orchards, greenhouses and warehouses in order to maintain yields, environment, biodiversity, human health, and animals.			
<b>The outcome of the course</b> The acquired knowledge and skills on the principles of plant protection in organic farming. Practical application of knowledge to protect plants in the system of environmental management in agriculture. The knowledge acquired from biology of harmful organisms (pathogens, insects, mites, rodents, weeds), and the understanding of mutual dependence of agro ecosystems. The acquired knowledge of characteristics and application of biopesticides			
<b>Syllabus</b> <i>Theoretical study</i> – General terms of phytopathogenic microorganisms, pests, weeds and biopesticides; Economically important pathogens: mycosis, viral and bacterial diseases of cultivated plants, nematodes; The concept of plant protection in organic farming; Economically significant pest of cultivated plants; Measures to protect plants in arable farming, orchards and greenhouses. Biological control and cultural practices; Insects and mites vectors of human diseases, rodents; Knowledge of weed biological features of weeds, weed control: indirect and direct measures; Biopesticides: term and definition, classification, properties, biological efficacy, the application. Legislation in the field of plant protection;  <i>Practical Exercise.</i> Recognizing the symptoms of plant diseases; Identification and development of cycle pest on cultivated plants; Identification and development of cycle of weed plants; Beneficial organisms in agriculture; Measures to protect plants in organic farming; Legislation;			
<b>Literature</b>  Allan S. Felsot, Kenneth D. Racke. 2006. Crop Protection Products for Organic Agriculture 1st Edition, American Chemical Society 326 p Felsot, A. S., Racke, K. D. (2006): Crop Protection Products for Organic Agriculture, 1st Edition. American Chemical Society. Bellon, S., Penvern, S. (2014): Organic Farming, Prototype for Sustainable Agricultures. © Springer Science+Business Media Dordrech. Finckh, M. R., Ariena H. C. van Bruggen, Tamm, L. (2015): Plant Diseases and Their Management in Organic Agriculture. Published by APS Press of the American Phytopathological Society.			
<b>Number of lectures: 6</b>			Other Lessons
Lectures: 3	Practices: 3	Other forms of teaching:	
Student research work:			
<b>Teaching methods:</b> Interactive teaching with video presentations, questions and discussion. Practical exercises on plant and insect material, microscopy and sketching. Projects with experiments in the field, visiting farms and businesses.			
Score (maximum 100 points)			
<b>Pre-commitments</b>	<b>Points</b>	<b>The final exam</b>	<b>Points</b>
Activity during lectures	10	Written exam	

Practical lessons		Oral examination	40
Preliminary exams	30		
Seminars	20		
<i>Total</i>	60		40



<b>Study program:</b> Organic crop and livestock production				
<b>Type and level of study:</b> Bachelor academic studies				
<b>Course Title:</b> NUTRITION OF NONRUMINANT				
<b>Teachers:</b> Dr. Mihailo Radivojević, Full professor				
<b>Status:</b> Elective 3, VI semester				
<b>ECTS:</b> 8				
<b>Prerequisite:</b> None				
<b>The goal of course</b> Introducing students with the basic nutrients, feed, nutrition, and the needs in nutrients, nutrition basics and specifics of the most important domestic and wild animals belonging to non-ruminants as well as fish and learning about animal testing methods.				
<b>The outcome of the subject</b> If students are trained basic knowledge and the specifics of individual food animal species as well as to gain information on how the analysis of feed and preparing meals for quality organic livestock production.				
<b>Syllabus</b> <i>Theoretical study</i> – The science of nutrition; Nutrients and their metabolism - carbon- hydrates, fats, proteins, vitamins, minerals, water; Assessment of the nutritional value of food; Animal food, production, processing and utilisation in organic livestock breeding and animal husbandry- green feeds, forages, ensiled feeds, root and tuberous feeds, grain feeds - cereals, legumes, oilseeds, by-products of the milling industry and the oil industry; Animal feed - by-products of sugar factories, alcohol industries, brewery, starch; Animal feed - animal feed, yeast and algae, mineral nutrients, preparing of feed and feed mixtures, preserving of animal feeds; The animal requirements for maintance, reproduction, lactation, growth, fattening, work; Nutrition of horses; Nutrition of pigs; Nutrition of; poultry, Nutrition of rabbits, Nutrition of wildlife, Nutrition of fish.  <i>Practical classes</i> – Sampling, packaging and shipping of samples of animal feed for examination; Methods of animal feed testing. Determination of the nutritional value of animal feed - Weende procedure, and quick methods (NIR, NIRS); Review and hygiene evaluation of green feeds, dried forages, silage, root and tuberous feeds, grain feeds, farinaceous feeds and oil meal and cake; Review and evaluation of animal feeds, mineral nutrients, feeds of vegetable origin (voluminous and concentrated) and feed mixtures. Balancing of rations and computer analysis and correction of ration prescriptions for nutrition of horses, pigs, poultry, game and fish, in organic livestock breeding and animal husbandry; Contemporary informatics solutions for balancing of rations.				
<b>Literature</b> 1. NRC (2012): Nutrient requirementsa of Swine. 11th Rewised Edition. Committee on Nutrient Requirements of Swine. Board on Agriculture and Natural Resources. Division on Earth and Life Studies. National Research Council. The National Academic Press. Washington, D.C. 2. Edwards, S. (2002): Feeding Organic Pigs. Handbook. University of Newcastle. 3. NRC (2007): Nutrient requirementsa of Horses. 8th Rewised Edition. Committee on Nutrient Requirements of Horses. Board on Agriculture and Natural Resources. Division on Earth and Life Studies. National Research Council. The National Academic Press. Washington, D.C. 4. Pallant, J. (2011): SPSS Survival Manual, 4th Edition. Allen & Unwin. 5. Leeson, S., Summers, J. D. (2005): Commercial Poultry Nutrition Third Edition. University Books. Guelph, Ontario. 6. Blair, R. (2008): Nutrition and Feeding of Organic Poultry. Faculty of Land and Food Systems. The University of British Columbia. Vancouver, British Columbia. Canada.				
<b>Number of lectures: 6</b>				Other Classes
Lectures: 3	Practices:3	Other forms of teaching:	Student research work:	
<b>Teaching methods:</b> The method of oral presentations and discussions, written work (seminars and colloquium). The method of practical work on animal farms in clinical and chemical analytical laboratories.				

Score (maximum 100 points)			
<b>Pre-commitments</b>	<b>1. Poens</b>	<b>2. The final exam</b>	<b>3. Poens</b>
Activity during lectures	4. 10	5. Written exam	6.
Practical classes	7. 10	8. Oral examination	9. 30
Colloquia	10. 40	11.	12.
Seminars	13. 10	14.	15.
<i>Total</i>	16. 70	17.	18. 30

<b>Type and level of study:</b> Bachelor academic studies
<b>Course Title:</b> AGRICULTURAL MECHANIZATION
<b>Teacher:</b> Dr Milorad V. Đokić, Associate professor
<b>Study program:</b> Ecological Agriculture
<b>Status:</b> Obligatory, semester VI
<b>ECTS:</b> 6
<b>Prerequisite:</b> None
<p><b>Course goals</b> 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.</p>
<p><b>The outcome of the subject</b> 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.</p>
<p><b>Syllabus</b></p> <p><b>Theoretical study</b> - 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 for seeding 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 yields above 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, baling hay presses, roll balers), Machines and devices for preparation of green fodder and silage (silage harvesters, silage facilities, devices for filling and emptying of silage facilities), Machines and devices for concentrated 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 manure of livestock buildings. Treatment of liquid manure in order to protect the environment</p> <p><b>Practical classes</b> - 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 classes refers to calculating necessary parameters i.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.</p>
<p>Literature</p> <p>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.</p> <p>Hansen ,A. L. (2010): The Organic Farming Manual: A Comprehensive Guide to Starting and Running a Certified Organic Farm. Storey Publishing.</p> <p>Akinyemi, O. M. (2007): Agricultural Production: Organic and Conventional Systems. US. Taylor &amp; Francis Inc.</p>

Moyer, J. (2011): Organic No-Till Farming. Advancing No-Till Agriculture – Crops, Soils, Equipment. Radale Institute. USA.			
Number of lectures: 4			Other Classes
Lectures: 2	Practices: 2	Other forms of teaching:	
<b>Teaching methods:</b> <input type="checkbox"/> Lectures, exercises, students will be included in the discussion (interactive learning), making term papers, case studies.			
<b>Score (maximum 100 points)</b>			
<b>Pre-commitments</b>	<b>Poens</b>	<b>The final exam</b>	Poens
Activity during lectures	<b>10</b>	Written exam	
Practical classes	<b>10</b>	Oral examination	<b>50</b>
Colloquia	<b>15</b>		
Seminars	<b>15</b>		
<i>Total</i>	<b>50</b>		<b>50</b>

<b>Study program:</b> Organic crop and livestock production			
<b>Type and level of study:</b> Bachelor academic studies			
<b>Course Title:</b> PRACTICAL TRAINING 2, PRODUCTION PRACTICE			
<b>Professors:</b> Dr. Olivera P. Nikolić, Associate Professor			
<b>Status:</b> Compulsory, semester VI			
<b>ECTS:</b> 3			
<b>Prerequisite:</b> None			
<b>The goal of the course</b> The aim of production practices is to familiarize students with the problems of growing technology and measures of care provided to the plant in the manufacture of agro-ecological conditions. Students carry out production practices on selected productive farms			
<b>The outcome of the course</b> The outcome of manufacturing practice allows students to apply the acquired theoretical knowledge in practice under specific weather and soil conditions.			
<b>Syllabus</b> During manufacturing practice students get acquainted with the conditions of production of farming and vegetable crops in terms of sustainable agricultural production of organic products. In Serbian conditions, the production of small grains, corn, sugar beet, sunflower, soybean, vegetable crops, seed crops will be preferable. Students will become familiar with agrotechnical measures that are applied in the respective periods, tillage, harvesting, watering, and sowing. Students keep a diary of work.			
<b>Literature</b>			
<b>Number of lectures:</b>			Other Lessons
Lectures:	Practices:3	Other forms of teaching: 3	
Student research work:			
<b>Teaching methods:</b> <input type="checkbox"/> Practical instruction in the field, oral and practical reasoning about the working operations that are carried out during the day. The emphasis is on practical and presentation work.			
Score (maximum 100 points)			
<b>Pre-commitments</b>	<b>Points</b>	<b>The final exam</b>	<b>Points</b>
Activity during lectures	40	Written exam	
Practical lessons		Oral examination	
Preliminary exams	30		
Seminars	30		
<i>Total</i>	100		

<b>Study program:</b> Organic crop and livestock production			
<b>Type and level of study:</b> Bachelor academic studies			
<b>Course Title:</b> ORGANIC SEED PRODUCTION			
<b>Professors:</b> Dr. Pavlović M. Milanko, Associate Professor			
<b>Status:</b> Optional 4, semester VII			
<b>ECTS:</b> 8			
<b>Prerequisite:</b> None			
<b>The goal of the course</b> The aim of the course is the acquisition of knowledge, principles and methods of seed production in organic agriculture, preparation and marketing of seeds in organic system in order to successfully apply the knowledge in practice.			
<b>The outcome of the course</b> Acquiring the necessary knowledge and skills, students become more independent and able to organize seed production, processing and marketing of products, by principles and legislation of organic seed production. Seed production is characterized by a number of specific features where seed production must meet the requirements of certified seed sort, together with the requirements of organic regulations and laws, therefore the students have to be able to organize and control them.			
<b>Syllabus</b> <i>Theoretical study -</i> The specificity of breeding in organic farming, legislation, sources of variability, genetic resources, methods of organic plant breeding (approved, conditionally approved, restricted). Registration of organic varieties, testing and protection. Definition of seed sowing material, seedlings, seed production. General seed production, introduction, regulations on seeds, conventional and organic. Marketing in seed production and international trade in seeds, biological basis of seed production, seed viability, biological and other properties of seeds, seeds material (natural and the revised seeds), principles of seed production, specificity for the main crop and vegetable species, seed processing technology, using organic allowed resources and materials, packaging and packing, storage of seeds. Seed categories. Method of maintaining the basic seed of inbred and open-pollinated plant species, seed production of cereals, industrial crops, forage crops, vegetables, medicinal and aromatic plants. Organic seed production, specific organic seed production, legislation in the field of organic seed production, the Law on Organic Agriculture of Serbia, EU 834-2008, respecting the Codex Alimentarius, Commission for Organic Agriculture and the principles of GAP-Good Application Practices, HACCP - Hazard Analysis and Critical Control Point system for finishing capabilities, and seed production by the principle of good agricultural practices and integrated production. Production of organic seed and planting materials, principles of treatment of organic seeds, labeling, packaging and distribution of organic seeds and planting materials. Certification and documentation about origins and seed quality. <i>Practical lessons -</i> Introduction to seeds and seedlings, seed categories, labeling, control and certification of organic seeds, visiting producers and processors of organic and conventional seeds.			
<b>Literature</b> Breeding for resilience: a strategy for organic and low-input farming systems? (2010): v, of the "Organic and Low-Input Agriculture" Proceedings. Paris <a href="http://www.itab.asso.fr/downloads/actes/actes-eucarpia2010.pdf">http://www.itab.asso.fr/downloads/actes/actes-eucarpia2010.pdf</a>  Organic Seed Alliance · <a href="http://www.seedalliance.org">www.seedalliance.org</a>  E.T. Lammerts van Bueren, M. Hulscher, M. Haring, J. Hoogendom, A.P.M. den Nijs, J.D. van Mansvelt, J. Jongerden, G. Ruvenkamp (1999): Sustainable organic plant breeding. Final report, a vision choices, consequences and steps, Louis Bolk Institute			
<b>Number of lectures: 6</b>			Other Lessons
Lectures: 3	Practices: 3	Other forms of teaching: Student research work:	
<b>Teaching methods:</b> □ Lectures, discussions with students, experimental exercises, preparation and public defense of practical applied work.			

Score (maximum 100 points)			
<b>Pre-commitments</b>	<b>Points</b>	<b>The final exam</b>	<b>Points</b>
Activity during lectures	10	Written exam	
Practical lessons	10	Oral examination	40
Preliminary exams	2x10=20		
Seminars	20		
<i>Total</i>	60		40

<b>Study program:</b> Organic crop and livestock production			
<b>Type and level of study:</b> Bachelor academic studies			
<b>Course Title:</b> ZOOHYGIENE AND ANIMAL HEALTH PROTECTION			
<b>Teachers:</b> Dr. Aleksandar Z Mašić, Associate professor			
<b>Status:</b> Elective 4, VII semester			
<b>ECTS:</b> 8			
<b>Prerequisite:</b> None			
<b>The goal of course</b> Introduce students to ways of keeping and housing animals, hygiene facilities and environmental factors, and that is damaging, climate impacts and the most important elements of health care in the process of keeping and animal breeding in organic livestock production.			
<b>The outcome of the subject</b> Expertise in recognizing the basic concepts of hygiene facilities and environment, climate change and their impact on the health of the animals, introducing hygienic measures housing, keeping and transport of different categories and types of animals. Getting to know the most important preventive measures and treatment methods in organic livestock production.			
<b>Syllabus</b> <i>Theoretical study –</i> Basics of environmental hygiene - Hygiene of air, water and land, housing and hygiene of animal housing - hygiene facilities, ventilation and sanitation facilities in the most important hygiene measures keeping and breeding, poultry, pigs, sheep, goats, cattle's and other animals in organic production. The most common animal diseases in organic production, prevention of disease and the possible therapeutic procedures <i>Practical classes –</i> Hygienic and sanitary evaluation of water, air, land and buildings and meet with modern analytical equipment for testing water hygiene, air and soil. Introducing the clinical picture and symptoms of the most common diseases in organic livestock production.			
<b>Literature</b> Иностранни и домаћи часописи и зборници радова са симпозијума и конгреса, посвећени хигијени животиња и здравственим поремећајима у органској производњи.  A. Akhtar (Author). 2012. Animals and Public Health: Why Treating Animals Better is Critical to Human Welfare (The Palgrave Macmillan Animal Ethics Series, Palgrave Macmillan, 247p			
<b>Number of lectures: 6</b>			Other Classes
Lectures: 3	Practices: 3	Other forms of teaching: Student research work:	
<b>Teaching methods:</b> The method of oral presentations and discussions, written work (seminars and colloquium). The method of practical work on animal farms in clinical and chemical analytical laboratories.			
Score (maximum 100 points)			
<b>Pre-commitments</b>	<b>Poens</b>	<b>The final exam</b>	Poens
Activity during lectures	10	Written exam	
Practical classes	10	Oral examination	30
Colloquia	40		
Seminars	10		
<i>Total</i>	70		30



<b>Study program:</b> Organic crop and livestock production			
<b>Type and level of study:</b> Bachelor academic studies			
<b>Course Title:</b> ORGANIC VEGETABLE PRODUCTION			
<b>Teachers:</b> Dr. Ilić S. Zoran, Full professor			
<b>Status:</b> Elektive 5, semester VII			
<b>ECTS:</b> 8			
<b>Prerequisite:</b> None			
<b>The goal of course</b> Training students for high-quality vegetable production in agro-ecological principles, particularly organic, with the aim of involving the production and operation of advisory services for organic agriculture or vegetable crops production.			
<b>The outcome of the subject</b> Skilled professionals who can produce high quality and safe food in the fields, greenhouses and gardens, with the use of growing technology that simultaneously protect the ecosystem and the environment.			
<b>Syllabus</b> <i>Theoretical study</i> - Vegetables and its importance for human consumption, the economic importance of the species and the particular means of production. Methods of production, garden, protected areas and arable land, growing from seed, planting material and seedlings. Production of seedlings, grafted seedlings. Different production systems, conventional and organic. The basic principles and differences in the application of agro-ecological and organic farming of certain species and groups: root, leaf, bulb, fruits and less cultivated species, with differences in cultivation in gardens, fields and greenhouses. Quality and health safety of vegetables. Correlation between organic production and quality of vegetables as food and medicine. The role of organic vegetables in the conservation of biodiversity and agro-biodiversity with species diversification and conservation of old varieties and populations within specific multifunctional organic vegetable production. <i>Practical classes</i> - Laboratory exercises related to the morphology of vegetable seedling production, grafting seedlings. Field exercises for exploring the production process.			
<b>Literature</b> Gareth Davies (Editor), Margi Lennartsson (Editor). 2006. Organic Vegetable Production: A Complete Guide. Crowood Press. 350 p Gerald Brust (2012): Organic Vegetable Production. Purdue University			
<b>Number of lectures: 6</b>			Other Classes
Lectures: 3	Practices: 3	Other forms of teaching: Student research work:	
<b>Teaching methods:</b> □ Lectures, laboratory and field exercises, colloquia and seminar essays.			
Score (maximum 100 points)			
<b>Pre-commitments</b>	<b>Poens</b>	<b>The final exam</b>	<b>Poens</b>
Activity during lectures	10	Written exam	
Practical classes	10	Oral examination	50
Colloquia	20		
Seminars	10		
<i>Total</i>	50		50

<b>Study program:</b> Organic crop and livestock production			
<b>Type and level of study:</b> Bachelor academic studies			
<b>Course Title:</b> NUTRITION OF RUMINANT			
<b>Teachers:</b> Dr. Mihailo Radivojević, full professor			
<b>Status:</b> Elective 5, VII semester			
<b>ECTS:</b> 8			
<b>Prerequisite:</b> None			
<b>The goal of course</b> Introducing students with the basic nutrients, feed nutrition, and the needs in nutrients, nutrition basics and specifics of the most important domestic and wild animals belonging to non-ruminants as well as fish and learning about animal testing methods.			
<b>The outcome of the subject</b> If students are trained basic knowledge and the specifics of individual food animal species as well as to gain information on how the analysis of feed and preparing meals for quality organic livestock production.			
<b>Syllabus</b> <i>Theoretical study</i> – The science of nutrition; Nutrients and their metabolism - carbon- hydrates, fats, proteins, vitamins, minerals, water; Assessment of the nutritional value of food; Animal feed – production, processing and utilisation in organic livestock breeding; Animal feed - green forages and pasture, continius green chops, hay and other dry forages, silage and chemistry of ensiling, objects for ensiling, haylage, root and tuberous feeds, grain feeds - cereals, legumes and oilseeds; by-products of the milling industry and the oil industry; Animal feed - by-products of sugar factories, alcohol industry, brewery, starch; Animal feed - animal feeds, yeast and algae, mineral nutrients, preparing feed and feed mixtures, preserving animal feed; The animal requirements for maintance, reproduction, lactation, growth, fattening, work; Ruminant Nutrition – nutrition of cattle, sheeps, goats, deer and roe deer.  <i>Practical classes</i> – Sampling, packaging and shipping of samples of animal feed for examination; Methods of animal feed testing. Determination of the nutritional value of animal feed - Weende procedure, Van Soest procedure and quick methods (NIR, NIRS); Review and hygiene evaluation of green feeds, dried forages, silage, root and tuberous feeds, grain feeds, farinaceous feeds and oil meal and cake; Review and evaluation of animal feeds, mineral nutrients, feeds of vegetable origin (voluminous and concentrated) and feed mixtures. Balancing of rations and computer analysis and correction of ration prescriptions for ruminant nutrition, in organic livestock breeding and animal husbandry; Contemporary informatics solutions balancing of rations.			
<b>Literature</b> 1. Subcommittee on Beef Cattle Nutrition; Committee on Animal Nutrition; Board on Agriculture; National Research Council (2000): Nutrient Requirements of Beef Cattle. 7th revised edition. 2. Subcommittee on Dairy Cattle Nutrition; Committee on Animal Nutrition; Board on Agriculture and Natural Resources; Division on Earth and Life Studies; National Research Council (2001): Nutrient Requirements of Dairy Cattle. 7th revised edition. 3. Mendenhall, K. (2009): The Organic Dairy Handbook. Northeast Organic Farming Association of New York, Inc. (NOFA-NY). <a href="https://www.nofany.org/files/TheOrganicDairyHandbook.pdf">https://www.nofany.org/files/TheOrganicDairyHandbook.pdf</a> 4. Producers Coffey, L., Baier, A. H. (2012): Guide for Organic Livestock Producers. National Center for Appropriate Technology (NCAT) Agriculture Specialists. 5. NCAT (2004): Organic Livestock Workbook. National Center for Appropriate Technology (NCAT). 6. Schmuller, J. (2013): Statistical Analysis with Excel For Dummies 3rd Edition. <a href="http://pdf.th7.cn/download/files/1312/statistical_analysis_with_excel_for_dummies_3rd_edition.pdf">http://pdf.th7.cn/download/files/1312/statistical_analysis_with_excel_for_dummies_3rd_edition.pdf</a> .			
<b>Number of lectures:</b> 6			Other Classes
Lectures: 3	Practices: 3	Other forms of teaching:	
Student research work:			
<b>Teaching methods:</b> The method of oral presentations and discussions, written work (seminars and colloquium).			

The method of practical work on animal farms in clinical and chemical analytical laboratories.

Score (maximum 100 points)

<b>Pre-commitments</b>	<b>Poens</b>	<b>The final exam</b>	<b>Poens</b>
Activity during lectures	10	Written exam	
Practical classes	10	Oral examination	30
Colloquia	40		
Seminars	10		
<i>Total</i>	70		30

<b>Study program:</b> Organic crop and livestock production				
<b>Type and level of study:</b> Bachelor academic studies				
<b>Course Title:</b> MANAGEMENT IN ECOLOGY				
<b>Professors:</b> Dr. Tot I. Vilmoš, Associate Professor; dr Biljana Panin, Assistant Professor				
<b>Status:</b> Compulsory, semester VII				
<b>ECTS:</b> 7				
<b>Prerequisite:</b> None				
<b>The goal of the course</b> Acquainting students with the basics of management as a science and a profession and mastering managerial knowledge and skills with the ability to develop analytical thinking for adapting to the demands of the agroecology.				
<b>The outcome of the course</b> Acquiring and understanding the phenomenon of modern management and fundamental stages of the management process (planning, organizing, leading and control), as well as the most important business decisions, primarily objectives, strategies, policies and plans.				
<i>Theory lessons</i> Management phenomenon: Socio-economic dimension, differences, definition and types of management; Phase management process. Organizations and managers: Organization and environment; Business manager; Management and business performance of the organization; Levels and types of managers; Knowledge and skills. Development of thinking in management: Prehistory; The development of thinking about management in the nineteenth century; Classical School; Development of interpersonal relationship, behavioral trends; Quantitative schools and the development of the science of management; Systematic approach; Situational approach. Planning: Definition and scope; The importance and necessity; species; process; Planning and decision making; Management decisions, tools and techniques in planning, Objectives: Define the basic concepts related to the objectives; Mission, Vision, Division and formulation of objectives; Management by objectives. Strategy: The emergence of the notion and importance of strategy; The types of strategies and possible strategic options; Strategy formulation; Strategic Management. Organizing: Coverage idea to organize; Organizational design, organizational structure; Leadership: Human Resource Management; motivating; communication; Approaches to Leadership, Contemporary theories of leadership. Control: Control of the stage management processes; The necessity and importance; process; Focus and character; Types				
<i>Practice lessons</i> Group discussions, simulations, reflection, preparation of case studies and other forms of interactive teaching.				
<b>Literature</b> Primary: Branislav Mašić, Vilmoš Tot: Principi menadžmenta, Univerzitet Edukons, 2012; Secondary: Stephen P. Robbins & Mery Coulter, Management, 11-th edition, Prentice Hall, 2012				
<b>Number of lectures: 4</b>			Other Lessons	
Lectures: 2	Practices: 2	Other forms of teaching:		
Student research work:				
<b>Teaching methods:</b> □ Lectures, discussions with students, analysis of case studies, preparation and public defense of practical applied work.				
Score (maximum 100 points)				
<b>Pre-commitments</b>		<b>Points</b>	<b>The final exam</b>	<b>Points</b>
Activity during lectures		10	Written exam	
Practical lessons		10	Oral examination	30
Preliminary exams		2 x 20		
Seminars		10		

<i>Total</i>	70		30
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<b>Study program:</b> Organic crop and livestock production			
<b>Type and level of study:</b> Bachelor academic studies			
<b>Course Title:</b> FOOD ANALYSIS AND FOOD SAFETY			
<b>Professors:</b> Dr. Mira Pucarević, Full professor; Dr. Meho S. Bašić, full professor			
<b>Status:</b> Compulsory, VII semester			
<b>ECTS:</b> 7			
<b>Prerequisite:</b> None			
<b>The goal of the course</b> Extending the knowledge and detailed theoretical introduction to the basic macro and micro constituents of foods, methods of their analysis, as well as food contaminants originating from the environment, packaging, food preparation process and the nature of the toxins present in food			
<b>The outcome of the course</b> Acquiring knowledge in the domain of food contamination as well as knowledge of physical and chemical methods of testing the quality of food.			
<b>Syllabus</b> <i>Theoretical study</i> - Basic nutrients: proteins, fats and carbohydrates. Other natural ingredients: vitamins, organic acids, phenols, alcohols, esters, pigments, alkaloids, bitter substances. Additives: preservatives, colors, sweetening agents. The contaminants of food products: pesticides, heavy metals, polycyclic aromatic hydrocarbons, dioxins, acrylamide, trans fatty acids. Quality control and application of standards. Qualitative and quantitative chemical analysis. Standard and non-standard methods. The selection of methods and sampling procedures. Interpretation of results. Introduction of the concept of food safety and basic terms of providing sufficient quantities of food of appropriate quality. <i>Practical lessons –</i> Determination of mineral substances, proteins, amino acids, fats, fatty acids, monosaharaida, oligosaccharides, vitamins, antioxidants, preservatives, colors, sweeteners, pesticides.			
<b>Literature</b> Ellen Vos (Editor), Frank Wendler (Editor). 2007. Food Safety Regulation in Europe: A Comparative Institutional Analysis (Ius Commune Europaeum). Intersentia print, 469 p Yasmine Motarjemi (Editor), Huub Lelieveld (Editor). Food Safety Management: A Practical Guide for the Food Industry 1st Edition.2013. Academic Press, 1192 p			
<b>Number of lectures: 6</b>			Other Lessons
Lectures 3	Practices: 3	Other forms of teaching:	
Student research work:			
<b>Teaching methods:</b> Lectures, exercises, consultations, case study methodology, seminar work			
Score (maximum 100 points)			
<b>Pre-commitments</b>	<b>Points</b>	<b>The final exam</b>	<b>Points</b>
Activity during lectures	10	Written exam	
Practical lessons	10	Oral examination	45
Preliminary exams	35		
Seminars			
<i>Total</i>	55		45

<b>Study program:</b> Organic crop and livestock production				
<b>Type and level of study:</b> Bachelor academic studies				
<b>Course Title:</b> FUNDAMENTALS OF MARKETING IN ORGANIC PRODUCTION				
<b>Professors:</b> Dr. Diona D. Đurđević, Assistant Professor; Dr. Biljana Panin, Assistant Professor				
<b>Status:</b> Compulsory, VIII semester				
<b>ECTS:</b> 7				
<b>Prerequisite:</b> None				
<b>The goal of the course</b> The aim of this course is to acquaint students with the basics of marketing, and importance and role of marketing in organic food production, the marketing mix (product, price, distribution and promotion), as well as marketing strategies that should enable successful market positioning of organic products in contemporary business.				
<b>The outcome of the course</b> Understanding the role and importance of marketing in organic food production and enabling students to independently design and coordinate the marketing mix (product, price, distribution, promotion), the implementation of marketing strategies for successful positioning of organic products through the delivery of value to customers in the contemporary market.				
<b>Syllabus</b> <i>Theoretical study</i> - 1. Function and importance of marketing in organic production; 2. The nature of marketing and marketing mix; 3. Global marketing environment; 4. Understanding behavior of the buyers (consumers) on the market of organic products; 5. Marketing research and information systems; 6. Segmentations of the markets; targeting and positioning of organic products; 7. Management of the products and brands in market conditions; 8. The strategy of formation rates, with special emphasis on organic products; 9. Integrated marketing communications; 10. Techniques for mass communication and direct communication to the market of organic products; 11. Management of the relationships with customers; 12. Management of distribution. 13. Traditional marketing strategies; 14. Modern approaches to marketing and market strategies; 15. The delivery value for the customer. <i>Practical lessons</i> - Case studies related to the management of marketing activities; design of marketing mix and implementation of marketing strategies in organic production; examples of successful practice with an emphasis on world practice.				
<b>Literature</b> Foundations of Marketing by John Fahy, David Jobber Marketing management by Philip Kotler, Kevin Lane Keller ALIGNMENT OF THE SERBIAN LAW WITH ACQUIS COMMUNAUTAIRE: PRIORITIES, PROBLEMS, PERSPECTIVES (Part one: Agriculture and Rural Development), Edited by-Aleksandra Rabrenovic, PhD, Jelena Ceranic, PhD, Institute of Comparative Law Belgrade, 2012 L. DeVere Burton. 2014: Agriscience: Fundamentals and Applications, Stamford USA, ISBN 978-1-133-68688-0 OECD 2003: Organic Agriculture Sustainability, Markets and Policies, CABI publishing. Rick Parker. 2010: Plant & Soil Science: Fundamentals & Applications Delmare, Cengage learning Stephan Dabbert, Anna Maria Haring, Raffaele Zanolli. 2004: Organic Farming: Policies and Prospects, Zed Books, London				
<b>Number of lectures: 6</b>				Other Lessons
Lectures 3	Practices: 3	Other forms of teaching:	Student research work:	
<b>Teaching methods:</b> Lectures, exercises, consultations, case study methodology, seminar work				
Score (maximum 100 points)				
<b>Pre-commitments</b>		<b>Points</b>	<b>The final exam</b>	<b>Points</b>

Activity during lectures	5	Written exam	40
Practical lessons	5	Oral examination	
Preliminary exams	2x20		
Seminars	10		
<i>Total</i>	60		40



<b>Study program:</b> Organic crop and livestock production
<b>Type and level of study:</b> Bachelor academic studies
<b>Course Title:</b> BASICS OF VEGETABLES PRESERVATION
<b>Teachers:</b> Dr. Ilić S. Zoran, Full professor
<b>Status:</b> Elective 6, semester VIII
<b>ECTS:</b> 7
<b>Prerequisite:</b> None
<p><b>The goal of course</b></p> <p>The main objective of the course Basics preservation of organic products is to familiarize students and acquire knowledge about the importance of quality fresh organic products, vegetables, fruits and flowers placed on the preservation, reduce losses, and slow their decline. For the development of quality production, storage and sales of organic fruits and vegetables is essential ongoing education of all participants in this integrated process, the development of scientific research and application of these results in practice.</p>
<p><b>The outcome of the subject</b></p> <p>Training students in the preservation of the quality of organic vegetables and fruits in which a longer period of time allows the extension of the use of fresh vegetables and fruit as a basis for rational nutrition. It also means greater competitiveness in the market fresh products throughout the year, reducing the seasonality of production and sales. Economically, lower losses mean not only more storage, but also the ability to vegetables and fruits, in species where it is possible to put on the market when the price is high (winter, late spring). Processing, storage well means more complete utilization of capacity in the long term.</p> <p>Through this course will connect the influence of many factors prior to harvest (choice of varieties, climate and agro-technical factors) and during the harvest (maturity, time and method of harvesting) on the quality and the possibility to reduce losses and preserve quality during storage of fresh products. Application of new biotechnology during the storage process gives a scholarly upgrade through doctoral studies for scientific research work in programs to preserve the quality during storage and all professions where necessary understanding and respect for determining kvaliteta fresh products, monitoring the process of export or import of fresh vegetables and fruits, for work refrigerated, in the planning and procurement of technological equipment, and so on.</p>
<p><b>Syllabus</b></p> <p><i>Theoretical study ntroduction:</i> The specificity of the chemical composition of vegetables and fruits. Definitions, parameters and quality features. Biology maturation and changes during ripening. The influence of factors of production to the quality of products and processes storage. Codex health safety of agricultural products. Respect for the principles of GAP - Good Practices and Application GMP - Good Manufacturing Practices and applying the HACCP - Hazard Analysis and Critical Control Point system. Harvest, harvest timing and method of harvesting. Preparing vegetables for preservation. Cooling, sorting, packing. Physiology storage. Evaporation, respiration, ethylene production, photosynthesis, transpiration, growth and development, physiological degradation, physical and pathological lesions. Internal - biological factors-the nature and structure of the harvested products., The temperature of the products. Exterior - Environmental factors keeping. Temperature, relative humidity, light, air composition. Products incurred during storage. Pathology of storage, means of penetrating pathogens, infection, colonization, disease, and reduction control of diseases. Payment storage; Simple objects for storage, semi-controlled, controlled way of keeping controlled. Basic principles of the controlled cooling. Forced-air cooling Hydro-water cooling, liquid cooling ice with chopped ice. Vacuum cooling. Refrigeration drying.</p> <p>Methods for the extension of the lifespan of fresh products. Is modified atmosphere packaging and related technologies Controlled atmosphere storage (CA), equilibrium modified atmosphere (EMA), vacuum packaging (VA), keeping the gas exchange, gas-exchange preservation (GEP).</p> <p>Future trends in the process of storage. An improved method for controlling and monitoring temperature and relative humidity. During the storage of organic vegetables apply to commercial biopesticides based on microorganisms, then botanical or essential oils, natural polymers and mineral resources. In organic protection during čuvalja fresh products are used and the natural substances, chitosan, terpenoid and essential oils, isocyanates, ethanol, phenolic components and the like.</p>

<i>Practical classes</i> - Field practice: visit refrigerator and storage for vegetables and fruits			
<b>Literature</b> Kays Stanley J.: Postharvest physiology of perishable plant products. University of Georgia, Athens, 1996.  Kader, A.A. Postharvest technology of horticultural crops . 3th ed. Universities California Agri. Nat. Resources, Oakland, Publ.3311, 2002  FAO , 2004 : Improving the quality and safety of fresh fruits and vegetables: a practical approach. Prepared by : Maya Pineiro and Luz Berania Diaz Rios : United Nations Food and Agriculture Organization, Rome, Italy			
<b>Number of lectures: 6</b>			Other Classes
Lectures: 3	Practices: 3	Other forms of teaching:	
<b>Teaching methods:</b> <input type="checkbox"/> All the teaching process is carried out interactive and multimedia, including power point presentacije. Sastvni part of the teaching presentations of seminar papers of students, then students work involved in processing different theme, lectures of experts from the country and inostranstava, which contributes to better understanding and perception the complexity of the case. The practical part of the training takes place through exercises in groups, watching and discussion of film material and consultations.			
Score (maximum 100 points)			
<b>Pre-commitments</b>	<b>Poens</b>	<b>The final exam</b>	<b>Poens</b>
Activity during lectures	5	Written exam	25
Practical classes	15	Oral examination	25
Colloquia	15		
Seminars	15		
<i>Total</i>	50		50

<b>Study program:</b> Organic crop and livestock production				
<b>Type and level of study:</b> Bachelor academic studies				
<b>Course Title:</b> HARMFUL SUBSTANCES IN THE FOOD CHAIN OF ANIMALS				
<b>Teachers:</b> Dr. Meho S. Bašić, Associate professor, dr Midhat E. Jašić, Full professor				
<b>Status:</b> Elective 6, VIII semester				
<b>ECTS:</b> 7				
<b>Prerequisite:</b> None				
<b>The goal of course</b> Introduce students to the ways and possibilities of contaminating organism of animals various harmful substances present in the food, water, animals, and the impact of these substances on the health of animals, safety and quality of animal products.				
<b>The outcome of the subject</b> Expertise in identifying the disorder in animals resulting from the introduction into the body of food and water, hazardous substances, as well as familiarization with modern analytical methods for determining the presence in food, water, organs and tissues, toxic metals, pesticides and mycotoxins				
<b>Syllabus</b> <i>Theoretical study –</i> Animal health disorders arising as a result of improper diet and food intake of toxic substances in the body of animals; Nutritional deficits and surpluses of nutrients as causes disorder animal health; Deterioration and harmfulness of animal feed, physical, chemical, biological factors, bacteria, parasites, fungi; The toxins of microorganisms - bacteria, plant toxins - Phytotoxin, toxins animals; The toxins fungi; Aspergil-toxins, Penicilio-toxins; Fuzario toxins; Organophosphorous poisoning of animals and organochlorine compounds, carbamates, herbicides rodenticidinma; Poisoning animals inorganic compounds and metals; Heavy metals in air, water and land plants. Poisoning animals lead, mercury, cadmium and arsenic <i>Practical classes –</i> Physical, chemical, biological and analytical methods for determining toxic substances; organophosphorus and organochlorine compounds and rodenticides, sodium chloride, urea, nitrites and nitrates and toxic metals; Analytical method of determining aflatoxin B1, B2, G1, G2, ochratoxin, zearalenone, fumonisin and trichothecenes toxins. First test and a test of practical training.				
<b>Literature</b> Fink-Gremmels (2012): Animal Feed Contamination, 1st Edition Effects on Livestock and Food Safety. Woodhead Publishing The risk of contamination of food with toxic substances present in animal feed (2010) C.A. Kan, G.A.L.				
<b>Number of lectures: 6</b>			Other Classes	
Lectures: 3	Practices: 3	Other forms of teaching:		Student research work:
<b>Teaching methods:</b> The method of oral presentations and discussions, written work (seminars and colloquium). The method of practical work on animal farms in clinical and chemical analytical laboratories.				
Score (maximum 100 points)				
<b>Pre-commitments</b>		<b>Poens</b>	<b>The final exam</b>	<b>Poens</b>
Activity during lectures		10	Written exam	
Practical classes		10	Oral examination	30
Colloquia		40		
Seminars		10		
<i>Total</i>		70		30

<b>Study program:</b> Organic crop and livestock production				
<b>Type and level of study:</b> Bachelor academic studies				
<b>Course Title:</b> MULTIFUNCTIONAL AGRICULTURE				
<b>Teachers:</b> Dr. Panin S. Biljana, Assistant professor,				
<b>Status:</b> Obligatory, VIII semester,				
<b>ECTS:</b> 7				
<b>Prerequisite:</b> None				
<b>The goal of course</b> Introducing students about the importance of multifunctional agriculture, with emphasis on production of health and safe food, protection of consumer health, contribution to environmental protection, sustainable use of natural resources and socio-economic rural development.				
<b>The outcome of the subject</b> Students are expected to master the necessary theoretical and practical knowledge about the role of multifunctional agriculture in regional development, with special emphasis on the rational use of natural resources, diversification of activities to rural development and, in particular, the importance of organic farming in these processes.				
<b>Syllabus</b> <i>Theoretical study</i> - Sustainable agriculture. The term and concept of multifunctionality and multifunctional agriculture. Sustainable rural development. Production of healthy and safe food and market requirements. Agricultural production as a function of environmental conditions. Organic agriculture for sustainable development. Typical products and rural development. Multifunctional peri-urban agriculture. The diversification of activities in rural areas and the development of non-agricultural activities. Rural tourism. The role of women in multifunctional agriculture and rural development. <i>Practical classes</i> - Discussions and exercises on case studies				
<b>Literature</b> Wilson, G.A. 2007: Multifunctional Agriculture: A Transition Theory Perspective, CABI, North American Office Guido van Huylenbroeck, Guy Durand 2003: Multifunctional Agriculture: A New Paradigm for European Agriculture and Rural Development, Ashgate, ISBN 0754635767, 9780754635765. U.S. Department of Agriculture, 2001: Food and Agricultural Policy: Taking Stock for the New Century Genya R. Erling. 2005: Multifunctional Agriculture: Making it Work, University of Wisconsin--Madison				
<b>Number of lectures: 6</b>			Other Classes	
Lectures: 3	Practices: 3	Other forms of teaching:		
Student research work:				
<b>Teaching methods:</b> <input type="checkbox"/> Lectures, exercises, short repetitoria, discussions and presentations.				
Score (maximum 100 points)				
<b>Pre-commitments</b>		<b>Poens</b>	<b>The final exam</b>	<b>Poens</b>
Activity during lectures		10	Written exam	50
Practical classes		10	Oral examination	
Colloquia		30		
Seminars				
<i>Total</i>		50		50

<b>Study program:</b> Organic crop and livestock production			
<b>Type and level of study:</b> Bachelor academic studies			
<b>Course Title:</b> PRACTICAL WORK 3 - TECHNOLOGICAL AND ORGANIZATIONAL PRACTICES			
<b>Professors:</b> Dr. Olivera P. Nikolić, Associate Professor			
<b>Status:</b> Compulsory, VIII semester			
<b>ECTS:</b> 3			
<b>Prerequisite:</b> enrolled in the fourth year and a certified VII semester			
<b>The goal of course</b> The aim of the course is to familiarize students with the elements of the technological and organizational work within organic farming in order to connect to a single unit farm organization.			
<b>The outcome of the course</b> The outcome of this course is to enable students to apply acquired theoretical knowledge in practice, in the business of an organization and organic agricultural organizations, regardless of their ownership structure, as the basis for functioning and implementation of economic and environmental benefits.			
<b>Syllabus</b> Within the organizational and technological practices, students work on the development of economic indicators of ecological production methods, giving the possibility of conducting operations, planning and optimization of production. Correlation of environmental technologies and environmental elements, setting up development programs in production and also in the areas that mean the protection of biodiversity and the environment. The program provides for students to stay in Center for Organic Agriculture in Selenca and livestock farm in Curug.			
<b>Literature</b>			
<b>Number of lectures: 3</b>			Other Lessons
Lectures:	Practices: 3	Other forms of teaching: 3	
Student research work:			
<b>Teaching methods:</b> Practical lessons in different organic agricultural organizations, production and planning of analytical documents and plan of the farms and fields area, writing diary.			
Score (maximum 100 points)			
<b>Pre-commitments</b>	<b>Points</b>	<b>The final exam</b>	<b>Points</b>
Activity during lectures	40	Written exam	
Practical lessons		Oral examination	
Preliminary exams	30		
Seminars	30		
<i>Total</i>	100		

<b>Study program:</b> Ecological agriculture
<b>Type and level of study:</b> Bachelor academic studies
<b>Course Title:</b> <u>THE FINAL WORK</u>
<b>Status:</b> Obligatory
<b>ECTS:</b> 6
<b>Prerequisite:</b> Achieved 200 ESPB
<p><b>The goal of course</b>  Preparation and defense of the final thesis students prove that they have acquired the necessary competence for independent professional /research and practical work in the field of quality and safe food - from agroecological production, primarily from organic agriculture, the analysis of relevant literature for the setting and purpose, the choice of the appropriate methodology, analysis of the obtained results and concluding remarks.</p>
<p><b>The outcome of the subject</b>  Students integrate and applied the acquired knowledge in solving specific problems within the educational and scientific fields of study program where students attend. At the same time, students in this paper show that they are able to present the material and key conclusions of experts and the general public.</p>
<p><b>Syllabus</b>  The final paper is an independent, professional, written elaboration of a particular topic. Student can apply topic of the final paper after passing all the exams from the first, second, third and fourth year. Student applies subject to the prescribed form. Consultation on the topic and structure of work are done with the selected student mentor. After the adoption of the work themes, student will write a paper and acquire the right of defense upon written consent.  When defending the final thesis student gains the title of "Engineer of Agriculture".</p>
<p><b>Teaching methods:</b> Student and teacher (mentor) are arranged around the topic of the final paper, the problem settings and choice of methodology. During the writing of this paper mentor provides suggestions to the student in the selection of technical and scientific literature, helping also to develop the methodology and analysis of results and indicate the shortcomings , if any. The work includes: Introduction and setting of the problem, the theoretical elaboration of the problems with the display of literature in the relevant field, methodology, discussion, conclusion and bibliography. Upon meeting the requirements, student makes 5 copies of the work, hard cover , with standard spacing, margins, and other technical specifications in accordance with the general regulations of the Faculty.</p>
<p style="text-align: center;">Score (maximum 100 points) contains:</p> <ul style="list-style-type: none"> <li>- Assessment of the work - maximum 30 points</li> <li>- An assessment of exposure - maximum 30 points</li> <li>- Evaluation of Defense - maximum 40 points</li> </ul>