



EDUCONS UNIVERSITY

Faculty of Ecological Agriculture

Table 5.2. The subject specification

Table 5.2.A. Specifications for professional practices

Table 5.2.Б. Specification for final work 1 and final work 2

Book of subjects

Basic Academic Study

ORGANIC AGRICULTURE

Sremska Kamenica 2021.

Study program: Organic agriculture			
Course Title: BASICS OF CHEMISTRY			
Teacher/teachers: Gordana Racić			
Status: Compulsory, 1st semester			
ECTS: 8			
Requirement: none			
The course aims			
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.			
The course outcome			
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			
The course content			
<i>Theory classes</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>Practice 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			
Literature			
Radosavljević, S., Danilović, G. (2013). Osnove hemije-računanje u hemiji, Školska knjiga d.o.o., Novi Sad.			
Štajner, D., Kervešan, S. (2014). Hemija. Poljoprivredni fakultet, Univerzitet u Novom Sadu.			
Poulsen, T. (2010). Introduction to chemistry. CK-foundation. ISBN-13: 9781478298601.			
Seng Chan, K., Tan, J. (2014). Understanding Basic Chemistry. The Learner's Approach, World Scientific Publishing Co Pte Ltd, 404 p.			
Chowdhury, S., Vaijayanthi, B., Ahluwalia, V. (2013). WBCHSE Basic Chemistry. Bharti Bhavan Publication Pvt. Ltd; First Edition.			
Number of active teaching classes 6		Theory classes: 3	Practice classes: 3
Teaching methods			
Lectures, interactive work, experimental work			
Knowledge assessment (maximum 100 points)			
Pre-exam tasks	Points	The final exam	Points
Activity during lectures	5	Written exam	50
Practical classes	5	Oral exam	
Colloquia	20*2		
Seminars			

Study program: Organic agriculture			
Course title: BASICS OF BIOLOGY			
Teacher/teachers: Mirjana Bojović			
Status: Compulsory, 1st semstar			
ECTS: 8			
Requirement: none			
The course aims			
Enabling students to learn the basic concepts of various biological disciplines. Also, the objective of the course is to enable students to get to know and understand: cell structure, fundamental metabolic processes, biogeochemical cycles, basic principles of ecology, genetics, molecular and evolutionary biology by applying appropriate modern teaching methods and recent literature.			
The course outcome			
Students will be able to apply knowledge from various biological disciplines, since biology is multidisciplinary science, in agricultural practice.			
At the end of the course, the student should show knowledge and understanding in the field of cell biology, fundamental metabolic processes, biogeochemical cycles, basic principles of ecology, genetics, molecular and evolutionary biology. The student should be able to use a light microscope, recognize and describe cells and tissues of different organisms, to apply the principles of ecology, genetics and molecular biology through solving tasks, as well as to be able to actively learn biological content, to be trained for team work, critical thinking, presentation of acquired knowledge, assessment of the teaching process.			
The course content			
<i>Theory classes</i>			
Cell biology, cell divisions, metabolism and photosynthesis, ecological concepts, ecological factors, biogeochemical cycles, trophic relations, basic principles of genetics, molecular and evolutionary biology.			
<i>Practical classes</i>			
Practical classes will support theoretically acquired knowledge through experimental and partly demonstration exercises and enable the student to be trained for their application in specific work circumstances.			
Literature			
Matavulj, M. (2005). Čelija i tkiva (skripta). Prirodno-matematički fakultet, Novi Sad.			
Dobrković, B., Stošić, J., Popović, J. (2020). Biologija 3M, Krug, Beograd.			
Iwasa, J., Marshall, W. (2016). Karp's Cell and Molecular Biology. John Wiley & Sons.			
Rees, P. A. (2017). Examining Ecology: Exercises in Environmental Biology and Conservation. Academic Press.			
Kliman, R. M. (2016). Encyclopedia of evolutionary biology. Academic Press.			
Number of active teaching classes 6		Theory classes: 3	Practice classes: 3
Teaching methods			
Lectures, discussions with students, experimental exercises.			
Knowledge assesment (maximum 100 points)			
Pre-exam tasks	Points	The final exam	Points
Activity during lectures	10	written exam	50
practical classes	10	oral exam	
Colloquia	3*10		
Seminars	-		

Study program: Organic agriculture			
Course title: MATHEMATICS			
Teacher/teachers: Ljiljana Cvetković, Nedović Maja, Takači Đurđica			
Status: Compulsory, 1st semstar			
ECTS: 9			
Requirement: none			
The course aims Basic knowledge of financial mathematics, matrix theory and calculus.			
The course outcome Understanding and mastering the basic mathematical tools for economists.			
The course content <i>Theory classes</i> Financial mathematics: Interest. Securities. Compound interest. Periodical investments. Loan amortization. Non-risky and risky investments. Matrix theory: Matrices and vectors. Linear systems. Applications in economy. Calculus: Derivatives. Integrals. Differential equations. Applications in economy. <i>Practice classes</i> The exercises cover practical examples that follow the lecture.			
Literature Cvetković, Lj. (2014). Finansijska matematika, A Dizajn, Sarajevo. Cvetković, Lj., Kostić, V. (2002). Zbirka zadataka iz matematike, Symbol, Novi Sad.			
Number of active teaching classes 6		Theory classes: 3	Practice classes: 3
Teaching methods: Theory classes accompanied by numerous examples. Independent work in exercises.			
Knowledge assessment (maximum 100 points)			
Pre-exam tasks	Points	Final exam	Points
Activity during lectures		written exam	40
Practical classes		oral exam	
Colloquia	60		
Seminars			

Study program: Organic agriculture			
Course title: ENGLISH LANGUAGE 1			
Teacher/teachers: Tatjana Milosavljević			
Course status: Compulsory, 1st semester			
ECTS: 6			
Requirement: none			
The course aims Students will be taught the use of grammar, professional and general pronunciation, oral and written language, in order to enable them to communicate in English, with an additional emphasis on professional terminology as the basis for reading professional and scientific publications in the field of economics.			
The course outcome Students will be taught to actively use the English language, as well as the English literature in their chosen field.			
The course content <i>Theory classes</i> Modal verbs of ability, request, offer and obligation, Present Simple and Present Continuous Tense for present and future time reference, verb and noun collocations, phrasal verbs, Past Simple and Past Continuous Tense, Going-to Future, Will-future, conditional sentences, time clauses, passive voice- <i>Practice classes</i> Skill practice: reading, writing: email, memo, sales leaflet, report, letter; conversation, simulation of a business environment and real-life situations, such holding presentations, negotiating, holding presentations, participation for discussions at meetings, chatting with and greeting co-workers.			
Literature Cotton, D., Falvey, D., Kent, S. (2012). Longman Market Leader: Pre-Intermediate Business English. 3 rd ed. Edinburgh Gate, Harlow: Pearson Education Ltd. Longman Market Leader: Pre-Intermediate Business English Self-Study CD-ROM Mascull, B. (2010). Business Vocabulary in Use. Cambridge: CUP. Murphy, R. (2012). English Grammar in Use. 4 th ed. Cambridge: CUP.			
Number of active teaching classes 4		Theory classes: 2	Practice classes: 2
Teaching methods Lectures, exercises, consultations, group work, pair work, individual work, work with audio-visual aids.			
Knowledge assessment (maximum 100 points)			
Pre-exam tasks	points	Final exam	Points
Activity during lectures	10	written exam	
Practical classes (e-week)	10	oral exam	30
Colloquia	2*25		

Study program: Organic agriculture			
Course title: ENVIRONMENTAL ETHICS			
Teacher/teachers: Biljana Panin			
Status: Compulsory, 2nd semester			
ECTS: 6			
Requirement: none			
The course aims			
The main objective of the course is to familiarize students with the practical and philosophical problems of environmental and ethical issues. The course provides a systematic description of the moral relationships between people and their natural environment, and encourages students to hold responsible pluralism of opinion in the field of environmental ethics.			
The course outcome			
This course will allow students to independently, objectively identify, monitor and interpret environmental and ethical issues and issues that are relevant to environmental concerns. Students are developing an awareness that the environment should be viewed holistically, ie that a sustainable future must be maintained on three bases economic, environmental and ethical, that is, instability of some of them will affect the ability of society to sustain itself in time.			
The course content			
<i>Theory classes</i>			
The concept of ethics. Concept, Object and Objective of Environmental Ethics, Ethical Theory and Environment, Environmental Ethics as Applied Ethics, Ethics and Economics, Impact of Market Requirements on the Environment, Accountability to Future Generations and Sustainable Development, Accountability to Nature, Environmental Issues and Policies - Conservation of Biodiversity , Food and Agriculture, Corporate Responsibility, Quality of Life as an Ecological Paradigm, Interaction: Localism-Regionalism-Globalism, Earth Ethics, Environmental Justice and Social Ecology, Ecological Feminism.			
<i>Practice classes</i>			
Presentation of multimedia forms with ecological-ethical content and their interpretation and discussion.			
Literature:			
Van de Veer, D., Pierce, C. (2003). The Environmental Ethics and Policy Book, Wadsworth Cengage Learning			
De Jarden, R.J. (2006). Ecological ethics - introduction to ecological philosophy, Official Gazette, Belgrade.			
Pavlović, V. (1996). Ecology and Ethics, Eco Center, Belgrade.			
Number of active teaching classes 5	Theory classes: 2	Practice classes: 3	
Teaching methods			
Lectures, interactive teaching, short repetitorium, presentations			
Knowledge assessment (maximum points 100)			
Pre-exam tasks	Points	The final exam	points
Activity during the lectures	10	Written exam	40
Practical classes	20	Oral exam	
Colloquia			
Seminars	30		

Study program: Organic agriculture			
Course Title: RURAL DEVELOPMENT AND AGROTURISM			
Teacher/teachers: Biljana Panin, Dejan Supić			
Status: Compulsory, 2nd semester			
ECTS: 4			
Requirement: none			
The course aims			
<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.</p> <p>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. 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. 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>			
The course outcome			
The outcome of this case is the acquisition of that theoretical and practical knowledge about rural development and agro-tourism. 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.).			
The course content			
<i>Theory classes</i>			
To understand the complexity of the concept of agro tourism 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 agro tourism, the economic importance of rural and agro tourism, tendencies and trends in the future development of rural and agro tourism, organic production importance for agro tourism, placement of organic products in agritourism, examples of good practice in Serbia and so on.			
<i>Practice classes</i>			
Working in groups (seminars and case studies), and specific examples of a discussion on the topics of curriculum.			
Literature			
Hrabovski-Tomić, E. (2008). Selektivni oblici turizma, Univerzitet Edukons, Sr. Kamenica.			
Lazić, L. i drugi. (2007). Ruralni turizam, skripta, Departman za geografiju, turizam i hotelijerstvo, Prirodno-matematički fakultet, Novi Sad.			
Muhi, B. (2009). Primena marketinga u seoskom turizmu Vojvodine, monografija, Univerzitet Educons, Sremska Kamenica			
Sznajder, M., Przezbórska, L., Scrimgeour, F. (2009). Agrotourism. CABI, 301 p.			
Singh, K. (2009). Rural Development: Principles, Policies and Managemen. SAGE Publications Pvt. Ltd. 368 p.			
Number of active teaching classes 3	Theory classes: 2		Practice classes: 1
Teaching methods:			
Lectures, exercises, students will be included in the discussion (interactive learning), making term papers, case studies.			
Knowledge assessment (maximum 100 points)			
Pre-exam tasks	Points	The final exam	Points

Activity during lectures	5	Written exam	
Practical classes	5	Oral examination	30
Colloquia	2*20		
Seminars	20		

Study program: Organic agriculture			
Course Title: BASICS OF BIOCHEMISTRY			
Teacher/teachers: Dejana Panković			
Status: Compulsory, 2nd semester			
ECTS: 8			
Requirement: None			
The course aims Acquiring knowledge about the basic biochemical processes in living organisms and their changes under the influence of abiotic and biotic stressors from the environment.			
The course outcome Acquired knowledge should provide the understanding of interactions between organisms and their environment in respect to current climatic changes			
The course content <i>Theory classes</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, pyrimidine 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>Practice classes</i> Preparation for laboratory work, introduction to laboratory equipment, making solutions, determination of pH, colorimetry and spectrophotometry (carbohydrates and proteins).			
Literature Čurčić, N., Panković, D. (2011). Gajenje genetički otpornih biljaka prema bolestima u cilju zaštite životne sredine. Monografija, 101 str. ISSN / ISBN 978-86-87785-34-2, COBISSSR-ID267537671, Univerzitet Edukons, Seremska Kamenica. Panković, D. (2014). Genetički modifikovane biljke i bezbednost u organskoj proizvodnji biljaka (urednik Dr Jovanović Ljubinko). U: Proizvodnja i menadžment u organskoj poljoprivredi (urednik Dr Jovanović Ljubinko). Univerzitet Edukons, Seremska Kamenica, 265-289. Topisirović, Lj.(2005). Dinamička biohemija, Biološki fakultet, Univerzitet u Beogradu. Mimić a-Dukić N. (2014). Intermedijarni metabolizam, Univerzitet u Novom Sadu David, L.N., Cox, M. (2012). Lehninger Principles of Biochemistry. W.H. Freeman; 6 edition, 140p Ferrier, D.R. (2014). 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.			
Number of active teaching classes 6		Theory classes: 3	Practice classes: 3
Teaching methods: Lectures, discussions with students, experimental exercises			
Knowledge assessment (maximum 100 points)			
Pre-exam tasks	Points	The final exam	Points
Activity during lectures	10	Written exam	40
Practical classes	10	Oral examination	
Colloquia	20		
Seminars	20		

Study program: Organic agriculture			
Course Title: BOTANY			
Teacher/teachers: Zorica Mrkonjić			
Status: Compulsory, 2nd semester			
ECTS: 4			
Requirement: None			
The course aims Introducing students to basic knowledge of morphology, anatomy, physiology and ecology of plants important for agriculture; introduction to classification systems as information systems; knowledge of selected groups of medicinal plants; application of acquired botanical knowledge in the field of medicinal and other useful plants.			
The course outcome After completing the course the student should be able to: describe and explain the morphological and anatomical characteristics of plant organs and tissues, identify them macroscopically and microscopically, describe and explain the basic physiological processes of plants, be aware of environmental principles, determine groups, correctly identify, name, describe and classifies species, predicts plant characteristics based on their systematic affiliation, accesses information using professional literature and electronic databases.			
The course content <i>Theory classes</i> After completing the course the student should be able to: describe and explain the morphological and anatomical characteristics of plant organs and tissues, identify them macroscopically and microscopically, describe and explain the basic physiological processes of plants, be aware of environmental principles, determine groups, correctly identify, name, describe and classifies species, predicts plant characteristics based on their systematic affiliation, accesses information using professional literature and electronic databases. <i>Practice classes</i> Microscopic analysis of plant cell characteristics. Microscopic analysis of plant tissues. Microscopic identification of vegetative plant organs. Morphological analysis of vegetative organs. Morphological and microscopic analysis of reproductive structures. Procedures for determination of higher plants. Use of literature and databases. Selected representatives of naked and hidden seeds important for agriculture. Plant species on the territory of Serbia. Field teaching.			
Literature Jančić, R., Lakušić, B.(2017). Botanika farmaceutika, Lento, Beograd. Igić, R., Vukov, D., Božin, B., Orlović, S. (2010). Lekovite biljke. Prirodni resursi Vojvodine, Novi Sad. ISBN-978-86-85157-07-3 Nešković, M., Konjević, R., Čulafić, Lj. (2003). Fiziologija biljaka, NNK Internacional, Beograd. Stevanović, B., Janković, M. (2001). Ekologija biljaka sa osnovama fiziološke ekologije biljaka, NNK Internacional, Beograd. Takhtajan, A. (2009). Flowering Plants, second Edition. Springer. Rudall, P. (2007). Anatomy of Flowering Plants. Cambridge University Press, Cambridge.			
Number of active teaching classes 3		Theory classes: 2	Practice classes: 1
Teaching methods Lectures, interactive work, experimental work			
Knowledge assessment (maximum 100 points)			
Pre-exam tasks	Points	The final exam	Points
Activity during lectures	10	Written exam	50
Practical classes	10	Oral examination	0
Colloquia	30	.....
Seminars			

Study program: Organic agriculture			
Course title: ENGLISH LANGUAGE 2			
Teacher/teachers: Gordana Vladislavljević			
Course status: Compulsory, 2nd semester			
ECTS: 7			
Requirement: none			
The course aims Gaining knowledge in English grammar and vocabulary in order to enable students to communicate in English, with an emphasis on business terminology for the active use of textbook literature and scientific publications.			
The course outcome Students will be trained in all four language skills (reading, writing, listening, speaking), emphasizing the usage of the English literature in the field of business economics.			
The course content <i>Theory classes</i> Grammar - Present Simple; Present Continuous; Future: will, going to, Present Continuous, Present Simple; Past Simple; Present Perfect; Articles; Conditionals; Relative Clauses; Passives Vocabulary - Brands; Travel; Change; Advertising; Money; International markets; Leadership; Competition <i>Practice classes</i> Developing writing skills, reading, listening and speaking in accordance with theory classes; Case studies			
Literature Cotton, D., Falvey, D., Kent, S. (2012). Longman Market Leader: Pre-Intermediate Business English. 3 rd ed. Edinburgh Gate, Harlow: Pearson Education Ltd. Longman Market Leader: Pre-Intermediate Business English Self-Study CD-ROM Mascull, B. (2010). Business Vocabulary in Use. Cambridge: CUP. Murphy, R. (2012). English Grammar in Use. 4 th ed. Cambridge: CUP.			
Number of active teaching classes 4		Theory classes: 2	Practice classes: 2
Teaching methods Lectures, practice classes, consultation hours, group work, pair work, individual work, audio-visual aids.			
Knowledge assessment (maximum 100 points)			
Pre-exam tasks	points	Final exam	points
Activity during lectures	10	written exam	
Practical classes (e-week)	10	oral exam	30
Colloquia	2*25		

Study program: Organic agriculture			
Course Title: BASICS OF GENETICS			
Teacher/teachers: Dragan Perović			
Status: Compulsory, 3rd semester			
ECTS: 7			
Requirement: None			
The course aims			
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.			
The course outcome			
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.			
The course content			
<i>Theory classes</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>Practice classes</i>			
Interactive teaching with laboratory and field exercises, discussions with experts on certain topics, essay.			
Literature			
Marinković, D., Tucić, N., Kekić, V. (1989) Genetika, Naučna knjiga, Beograd.			
Đokić, A. (1988). Biljna genetika, Naučna knjiga, Beograd.			
Bošković, J., Isajev. (2007). Genetika. Megatrend Univerzitet. Beograd.			
Lewin, B. Genes VII. (1997). Oxford University Press, UK.			
Acquaah, G. (2012). Principles of Plant Genetics and Breeding, Wiley-Blackwell.			
And articles from: Science, Nature Genetics, Genetics, Plant Cell, PlosONE, The Plant genome			
Number of active teaching classes 5		Theory classes: 3	
Practice classes: 2			
Teaching methods			
Lectures, discussions with students, experimental exercises, preparation and public defense of practical applied work.			
Knowledge assessment (maximum 100 points)			
Pre-exam tasks	Points	The final exam	Points
Activity during lectures	10	Written exam	
Practical classes	10	Oral examination	50
Colloquia	20		
Seminars	10		

Study program: Organic agriculture			
Course title: BASICS OF PLANT PHYSIOLOGY			
Teacher/teachers: Mirjana Bojović			
Status: Compulsory, 3rd semster			
ECTS: 7			
Requirements: none			
The course aims To enable students to get to know and understand the basic life processes of plants related to plant metabolism, their nutrition and maintenance of watering regime, mechanisms of growth and development as well as adaptation reactions to the effects of environmental factors.			
The course outcome Enabling students to master the material related to various physiological processes in plants, their interaction, as well as the impact of the environment in which plants grow. At the end of the course, the student should show knowledge and understanding in the field of: cell physiology, water regime of plants, photosynthesis, respiration, mineral nutrition of plants, plant growth and development, physiology of fruits and seeds and physiology of stress. The acquired knowledge represents the basis for the acquisition of new knowledge from professional subjects in the higher years of study.			
The course content <i>Theory classes</i> Physiology of the cell, water regime of plants, photosynthesis, respiration, mineral nutrition of plants, growth and development of plants, physiology of fruits and seeds, stress physiology. <i>Practice classes</i> Preparation for work in the laboratory, introduction to laboratory equipment, realization of laboratory exercises on topics provided by theoretical classes.			
Literature: Stikić, R., Jovanović, Z. (2015). Fiziologija biljaka, Naucna KMD, Beograd. Bhatla, S. C., Lal, M. A. (2018). Plant physiology, development and metabolism. Springer. Shabala, S. (Ed.). (2017). Plant stress physiology. Cabi. Sánchez-Moreiras, A. M., Reigosa, M. J. (Eds.). (2018). Advances in Plant Ecophysiology Techniques (Vol. 497). Springer International Publishing.			
Number of teaching classes 5		Theory classes: 3	Practice classes: 2
Teaching methods Lectures, discussions with students through mini-tests, experimental exercises.			
Knowledge assessment (maximum 100 points)			
Pre-exam tasks	Points	The final exam	points
Activity during lectures	5	written exam	
Practical classes	5	oral exam	50
Colloquia	2*20	.....
Seminar	-		

Study program: Organic agriculture			
Course Title: INTRODUCTION TO MICROBIOLOGY			
Teacher/teachers: Danka Radić, Aleksandar Mašić			
Status: Compulsory, 3rd Semester			
ECTS: 6			
Requirement: None			
The course aims			
The course should enable the student to acquire knowledge/understanding of the morphology, physiology, and genetics of microorganisms, as well as the basic characteristics of acellular (viruses) and cellular microorganisms (prokaryotes, Archaea and eukaryotes). Also, the course should enable the student to understand the role of microorganisms in the circulation of carbon, nitrogen, phosphorus, and other elements, their role in the processes of humification, mineralization, and maintenance of soil quality, as well as the application of microorganisms in sustainable agriculture.			
The course outcome			
Upon completion of the course in this course, the student should be able to describe and explain: 1) basic morphological and physiological characteristics of acellular and cellular microorganisms, 2) diversity and functioning of microorganisms at the basic level, 3) individual interactions between microbial populations and interactions with plants, 4) influence of ecological factors on the activity of microorganisms, 5) the relationship between plant nutrition, soil fertility and microorganisms and 6) the importance of microorganisms in sustainable agriculture. Also, the student should be trained for critical thinking, team work, to possess the skill of performing simple microbiological methods, and presenting and understanding literature data.			
The course content			
<i>Theory classes</i>			
Introduction. Historical development and significance of microbiology. Viruses: general properties, structure, and methods of study. Prokaryotes: morphology and general characteristics. Archaea. Eukaryotes: morphology and general characteristics. Influence of environmental factors on microorganisms. Energy groups of microorganisms. Metabolism of microorganisms. Genetics of microorganisms. Interactions between microbial populations. The role of microorganisms in the circulation of elements in nature. Rhizosphere and microorganisms. Microorganisms as biofertilizers and biocontrol agents.			
<i>Practice classes</i>			
Basic principles of work in a microbiological laboratory. Shape and size of microorganisms and preparation of native preparation. Gram staining of the preparation. Actinomycetes. Sterilization. Methods for obtaining pure cultures. Identification of microorganisms. Microorganisms in the carbon and nitrogen cycle. Application of microorganisms in agriculture.			
Literature			
Tortora, G.J., Funke, B.R., Case, C.L. (2013). Microbiology, 11 th Edition, Pearson			
Govedarica, M., Jarak, M. (1995). Mikrobiologija zemljišta; Poljoprivredni fakultet, Univerzitet u Novom Sadu.			
Mitić, N., Kecman, I. (2001). Đubriva i oplemenjivači zemljišta u Jugoslaviji. Društvo za zaštitu bilja Srbije.			
Đukić, D., Jemcević, V. T., Mandić, L. (2007). Mikroorganizmi i alternativna poljoprivreda. Budućnost-Novi Sad.			
Đukić, D., Mandić, L. (2003). Praktikum iz mikrobiologije. Stilos, Novi Sad.			
Raičević, V., Lalević, B., Kljujev, I., Petrović, J. (2010). Ekološka mikrobiologija. Poljoprivredni fakultet, Univerzitet u Beogradu,.			
Lalošević, V. (2011). Mikrobiologija za studente veterinarske medicine. Poljoprivredni fakultet, Univerzitet u Novom Sadu,.			
Kljujev, I., Jovičić-Petrović, J. (2013). Praktikum iz Mikrobiologije zemljišta sa radnim listovima. Poljoprivredni fakultet, Univerzitet u Beogradu.			
Bruslind L. (2020). General Microbiology. Oregon state University Corvallis, or.			
Number of active teaching classes 4	Theory classes: 2	Practice classes: 2	
Teaching methods			
Lectures, laboratory exercises, and interactive classes (e-week).			
Knowledge assessment (maximum 100 points)			
Pre-exam tasks	Points	The final exam	Points
Activity during lectures	5	Written exam	30
Practical classes	10	Oral exam	
Colloquia	30		

Seminars	25		
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Study program: Organic agriculture		
Course title: BUSINESS INFORMATICS		
Teacher/teachers: Komuves Zolt Šandor, Rankov Aleksandra		
Course status: Compulsory, 3rd semester		
ECTS: 7		
Requirement: None		
The course aims Students will be trained to: Analyze both the business and operations of an organization in external/internal domain. Understand the organization's information requirements. Plan ways and means of satisfying information needs. Realize IT solutions through implementation of an information system		
The course outcome Students' ability to understand the strategic importance of business IT or business intelligence systems and to recognize the usefulness of IS in supporting management. Knowledge in using IS and making decisions. Ability to analyze the business of an organization in the external and internal domain, understand information needs, plan ways to meet information needs, as well as implement IT solutions using information systems. Students will also gain knowledge of expert systems and an understanding of the ethical aspects of using management information systems.		
The course content <i>Theory classes</i> Introduction to Business Informatics - what it is and why it is important. Development and future of Management Information Systems (MIS). Information technology, information and data. Information system. IT development. The evolution of MIS. Infrastructure and platform, hardware, software and networks. Management Pyramid. Levels of information systems. IS support for business systems. The Relationship between IS and Processes: Basic, Information and Management Processes. Information systems at various levels: business IS, integrated IS, KMS (MS knowledge), MIS (management IS), DSS (decision support system), EIS (executive information system). What can be called a MIS system? Reasons for the introduction and business value of MIS. Requirements for the construction of MIS. Types of information in MIS. MIS based decision support. The complexity of decision making. Decision making at various levels. The decision making process. Decision making approaches. Decision Support Areas: DSS, DSS Components, Group Decision Making. Support for cooperation. Modeling for decision making using multiple conflicting criteria. Quantitative and qualitative models. Methods for decision making. Expert systems. DSS Design Guidelines. Composition of MIS. Data Warehouse. Multidimensional data and OLAP tools for online analytical processing of multidimensional data. Pivot spreadsheets. Data mining. MIS User Interface. Data visualization. Business Objective and Performance Management Systems. Geographic information systems. Artificial Intelligence in Decision-Making Systems (DSS) MIS protection and security, ethics and ownership issues. <i>Practice classes</i> Practical work, application software implementation, business environment simulation, multicriteria modeling for decision making		
Literature Turban, E. (2009). Uvod u informacione sisteme, Data status. Laudon, K. (2012). Informacioni sistemi, Morgan Kaufman. Turban, E., Sharda, R., Aronson, J.E., King, D. (2008). Business Intelligence: A Managerial Approach. Upper Saddle River, NJ: Prentice-Hall. Borschchev, A. (2013). The Big Book of Simulation Modeling. Multi method Modeling with Any Logic 6, Any Logic North America Turban, E., Aronson, J.E., Liang, T.P., Sharda, R. Decision Support and Business Intelligence Systems (8th Edition). London Howson, C. (2008). Successful Business Intelligence: Secrets to Making BI a killer App. Laudon, J.P., Laudon, K.C. (2007). Management Information Systems & Multimedia Student CD Package (10th Edition), Prentice Hall.		
Number of active teaching classes 6	Theory classes: 3	Practice classes: 3
Teaching methods Lectures with active participation of students (seminar papers, presentations, discussion, etc.). Laboratory exercises (multi-criteria modeling / simulations, decision making - pivot tables, etc.). Case studies. Consultations. Lectures, use cases, simulations, auditory exercises		
Knowledge assessment (max 100 points)		

Pre-exam tasks	Points	Final exam	points
Activity during lectures	10	Written exam	30
Practical classes	10	Oral exam	
Colloquia	40	.....
Seminars	10		

Study program: Organic agriculture			
Course Title: AGROBIOTECHNOLOGY			
Teacher/teachers: Dejana Panković, Gordana Racić			
Status: Compulsory, 4th semester			
ECTS: 7			
Requirement: None			
The course aims			
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.			
The course outcome			
Training students for practical application of modern biotechnological methods in agriculture and adoption multidisciplinary approach to solving basic problems in agriculture			
The course content			
<i>Theory classes</i>			
1. Introduction to Biotechnology (Definition and classification of biotechnology; Plant biotechnology; Basic concepts of genome); 2. Gene analysis (analysis and amplification of nucleic acids; enzymes as tools; General concepts of PCR as a diagnostic method); 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); 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); 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) 6. Laboratory methods in the analysis of the genome of the plants 2. (PCR identification of the genes for resistance to diseases); 7. Laboratory methods in the analysis of the genome of plants 3. (Digestion of the PCR products by restriction enzymes and electrophoresis); 8. Useful microorganisms in agriculture (Application of Trichoderma-e to increase the resistance of plants to biotic and abiotic stresses) 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); 10. Laboratory methods in the analysis of the genome of microorganisms from soil 2. (PCR identification of strains of Trichoderma variability of ITS sequences); 11. Biotechnology and environmental protection (environmental and health issues related to environmental protection, ethical and legal aspects of biotechnology);			
<i>Practice classes</i>			
Preparation for laboratory work, introduction to laboratory equipment, making solutions, determination of pH, colorimetry and spectrophotometry (carbohydrates and proteins).			
Literature			
Watke P.S. (2012). Agro-Biotechnology for Sustainable Development. Pragan Publication Reviewed by Nigel Chaffey (2009). The plant cytoskeleton: a key tool for agrobiotechnology The plant cytoskeleton: a key tool for agro-biotechnology. Berlin, Heidelberg, New York: Springer.			
Altman, A., Hasegawa, P.M. (2012). Plant Biotechnology and Agriculture: Prospects for the 21st Century. Academic press			
Number of active teaching classes 5		Theory classes: 3	Practice classes: 2
Teaching methods			
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.			
Knowledge assessment (maximum 100 points)			
Pre-exam tasks	Points	The final exam	Points
Activity during lectures	5	Written exam	40
Practical classes	15	Oral examination	
Colloquia	2*20	

Seminars			
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Study program: Organic agriculture			
Course Title: GOOD AGRICULTURAL PRACTICE AND SUSTAINABLE AGRICULTURE			
Teacher/teachers: Olivera Nikolić, Perović Dragan			
Status: Compulsory, 4th semester			
ECTS: 5			
Requirement: None			
The course aims			
The goal is to show concept of sustainable development and its requests in agriculture to the students, especially elements and goals of good agricultural practice and their interactions. An important part of the program presents contemporary sustainable agricultural systems (ecological and organic, integral, biodynamical, permaculture) and their relation with traditional agriculture, analysis, advantages and limits of each of them. The goal is, too, to make comparison with conventional agriculture in term of production health safe food, respect of people and their needs, natural resources care, ecological balance and social responsibility. The program considers both the most important standards in modern and the certification procedure in organic agriculture. .			
The course outcome			
By completing the planned program, students should understand essence of concept of sustainable development and good agricultural practice, master the methods of ecological, organic and biodynamic agriculture and see, clearly, the position of integral agriculture in contemporary agriculture. They would be able to organize ecological farms based on principles of good agricultural practice and provision of the Law on Organic Agriculture and give support to farmers in certification process			
The course content			
<i>Theory classes</i>			
Concept of sustainable development. Sustainable agricultural systems. Traditional agriculture. Conventional agriculture: development and green revolution. Good agricultural practice: elements, goals, principles. Standardization in agriculture. Ecological agriculture: term, principles and specificity in relation to conventional agriculture. The basic principles of ecological plant production. The basic principles of ecological livestock. Steps of certification for organic agriculture. The model of ecological farm. Integral agriculture: term, principles, goals and tasks. The relations among integral, conventional and ecological agriculture. Permaculture: term and characteristics. Biodynamic agriculture: essence and specifics. The Law on Organic Agriculture. Situation in organic agriculture in the world and Serbia.			
<i>Practice classes</i>			
Definition of ecological/organic farm model. Designing an ecological garden Comparison of organic, integral, conventional and biodynamical agricultural model based on practical examples. Visit organic farms, involving in production processes and preparation of organic fertilizers.			
Literature			
Schutter, O. (2011). UN Special Rapporteur on the Right to Food; 2011: Agroecology and the Right to Food http://www.srfood.org/images/stories/pdf/officialreports/20110308_a-hrc-16-49_agroecology_en.pdf			
Gold, M.V. (2007). Sustainable Agriculture: Definitions and Terms http://afsic.nal.usda.gov/sustainable-agriculture-definitions-and-terms-1			
Organic Agriculture, European Commission, 2012. https://ec.europa.eu/europeaid/sites/devco/files/study-organic-agriculture-201206_en_5.pdf			
Regulative EU 834/2007, 889/2008, 1254/2008 Protecting our Water, Soil and Air A Code of Good Agricultural Practice for farmers, growers and land managers https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/268691/pb13558-cogap131223.pdf			
Number of active teaching classes 4		Theory classes: 2	Practice classes: 2
Teaching methods			
Lectures, with the use of computer technology, discussions with students, individual and team work, preparation and defense of seminar papers.			
Knowledge assessment (maximum 100 points)			
Pre-exam tasks	Points	The final exam	Points
Activity during lectures	10	Written exam	
Practical classes	10	Oral exam	50
Colloquia	2*10	

Seminars	10		
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Study program: Organic agriculture			
Course title: THE SOIL SCIENCE			
Teacher/teachers: Nataša Stojić			
Status: Compulsory, 4th semester			
ECTS: 8			
Requirement: none			
The course aims Acquisition of basic knowledge in the field of soil science, soil properties, processes of genesis, evolution, causes of variability, natural changes, as well as with changes that occur during anthropogenic activity.			
The course outcome This course will equip students to gain basic knowledge of pedology and the processes that take place in the soil in accordance with environmental requirements			
The course content <i>Theory classes</i> Pedogenetic factors, General pedogenetic processes, Morphological characteristics of soil, Physical properties of soil, Chemical properties of soil, Damage and soil protection - Environmental components, Ecological aspects of mineral fertilizers application, Livestock farms as potential agents of soil pollution, Pesticides and soil, Soil compaction, Impact irrigation on land, The importance of harvest residues on soil fertility conservation, Impact of environmental pollution on soil. <i>Practice classes</i> Sampling and soil sampling strategy. Experimental determination of basic physical and chemical properties of soil. Determination of organic and inorganic soil contaminants			
Literature Sekulić, P., Kastori, R., Hadžić, V. (2003). Zaštita zemljišta od degradacije, Naučni institut za ratarstvo i povrtarstvo, Novi Sad. Sumner, M. (2000). Handbook of Soil science, SrC Press. Miljković, N. S. (1996). Osnovi pedologije, Univerzitet u Novom Sadu, Prirodno-matematički fakultet, Institut za geografiju, Novi Sad			
Number of active teaching classes 5		Theory classes: 3	Practice classes: 2
Teaching methods Lectures, practice, short repertorium, computer work, discussions, presentations			
Knowledge assessment (maximum points 100)			
Pre-exam tasks		Points	Final exam
Activity during lectures		10	Written exam
Practical classes		10	Oral exam
Colloquia		10	.....
Seminars		10	
			60

Study program : Organic agriculture			
Course Title: AGRICULTURE AND ENVIRONMENTAL PROTECTION			
Teacher/teachers: Mira Pucarević, Gordana Racić			
Status: Compulsory, 4th semester			
ECTS: 6			
Requirement: none			
The course aims 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.			
The course Students are trained to recognize and solve problems in agroecosystems and are capable of critical analysis in applied ecology in agriculture			
The course content <i>Theory classes</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>Practice classes</i> For each chapter of the theoretical classes, practical workshops and seminars will be organized.			
Literature Huber, S., Prokop, G., Arrouays, D., Banko, G., Bispo, A. (2009). Environmental Assessment of Soil for Monitoring Italy, Elsevier. Kangas, P.C. (2004). Ecological engineering. Principles and Practice. Lewis publishers a CRC Press Company Boca Raton London New York Washington, D.C. Cobb, A.H., Reade, J.P.H. (2010). Herbicides and Plant Physiology Second Edition A John Wiley & Sons, Ltd. Group of author. (2007). Soil Microbiology, Ecology, and Biochemistry Editor Eldor A. Paul			
Number of active teaching classes 4		Theory classes: 2	Practice classes: 2
Teaching methods Lectures, discussions with students, experimental exercises, preparation and public defense of practical applied work			
Knowledge assessment (maximum 100 points)			
Pre-exam tasks	Points	The final exam	Points
Activity during lectures	10	Written exam	30
Practical classes	10	Oral examination	20
Colloquia	30	.....
Seminars			

Study program: Organic Agriculture			
Course title: WEEDS IN ORGANIC AGRICULTURE			
Teacher/teachers: Olivera Nikolić, Miloš Rajković			
Status: Compulsory, 4th semester			
ECTS: 4			
Requirement: None			
The course aims			
The course should enable the student to: acquire knowledge about the basic biological and ecological characteristics of weeds, the relationship of weeds to abiotic and biotic factors, direct and indirect measures in weed control, economically harmful weed species and measures for their control; skill of recognizing weeds in the cotyledone phase and vegetative phase, recognizing organs for vegetative propagation, determining weeds using dichotomous keys, assessing the decision threshold for taking measures in weed control, proposing optimal measures in weed control in organic production.			
The course outcome			
At the end of the course the student should show knowledge and understanding: basic biological characteristics of weeds, reproduction and spread of weeds, ecological groups of weeds, weeds' relationship to abiotic and biotic factors, direct and indirect measures in weed control, weeds of individual crops with proposed measures for their control in organic production. The student should be able to apply the methods of teamwork, develop critical and creative thinking and present the acquired knowledge within the subject.			
The course content			
<i>Theory classes</i>			
Introduction to herbology, Weed division, Biological properties of weed plants, Weed damage, Reproduction and ways of weed spreading, Invasive processes in weed plants, Weed autotecology: weed ratio to heat, water, light, soil and altitude, weeds as habitat indicators, crop-weed interactions and harmfulness thresholds, weed ratio to crop production systems and agrotechnics, morphology, dynamics and classification of weed communities, weed control measures, crop and plant weeds and their control, arable land weeds and their control.			
<i>Practice classes</i>			
Morphology, reproduction and ecology of economically harmful weed species, Competition of weeds and crops, Importance of preventive measures in weed control, Agrotechnical measures of importance for weed control, Testing of bioherbicides, Physical measures of weed control.			
Literature			
Vrbničanin, S., Božić, D. (2021). Korovi. Poljoprivredni fakultet, Univerzitet u Beogradu.			
Merfield, C. N. (2019). Integrated weed management in organic farming. Chapter 5 in: Organic farming, pp. 117-180, Woodhead Publishing. https://www.sciencedirect.com/science/article/pii/B9780128132722000057			
Vrbničanin, S., Božić, D. (2016). Praktikum iz herbologije. Poljoprivredni fakultet, Univerzitet u Beogradu.			
Vrbničanin, S. (2015). Invazivni korovi. Herbološko društvo Srbije. http://herboloskodrustvo.rs/invazivni-korovi			
Van der Schans, D.A., Bleeker, P.O., Molendijk, L.P.G., Plentinger, M.C., Van Der Weide R.Y., Lotz L.A.P., Baumann, D. T. (2006). Practical weed control in arable farming and outdoor vegetable cultivation without chemicals (No. 352). Wageningen UR, Applied Plant Research. https://edepot.wur.nl/24553			
Number of active teaching classes 3		Theory classes: 2	Practice classes: 1
Teaching methods			
Lectures, interactive teaching, experimental work.			
Knowledge assessment (maximum 100 points)			
Pre-exam tasks		Points	The final exam
Activity during lectures		10	written exam
Practical classes		10	40
Colloquia		2*15	
Seminars		10	

Table 5.2.A

Study program: Organic agriculture			
Course Title: PRACTICE			
Teacher/teachers: Zorana Srečkov, Tanja Vujanov			
Status: Compulsory, 4th semester			
ECTS: 3			
Requirement: None			
The course aims			
The goal of doing practical training is to introduce students to the basic operations and procedures in agriculture, conventional and organic, at agricultural holdings of different sizes and structures and their involving in basic procedures.			
The course outcome			
It is expected, after completing the practice, that students will acquire basic practical knowledge about agriculture and be able to recognize the most important characteristics of organic agriculture in practice and organize some of agricultural operations and procedures.			
The course content			
<i>Theory classes</i>			
<i>Practice classes</i>			
The basic principles of doing current agricultural operations at farm (soil tillage, sowing and planting, crop care, harvesting) and animal husbandry (facilities, feeding, care) in conventional and organic system.			
The rules of storage final products.			
Principles and techniques of preparation organic matters for fertilization and plant protection and animals care.			
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.			
Literature			
Number of active teaching classes 6		Theory classes: 0	Practice classes: 6
Teaching methods			
Practical instruction, combined with interactive teaching , in the field and laboratories. Students participate in current operations and keep practice diary, registering each of procedures elements and all data about performed activities.			
Knowledge assessment (maximum 100 points)			
Pre-exam tasks	Points	The final exam	Points
activity during practice (mastering the skill)	30	practice diary presentation	40
keeping a practice diary	30	oral examination	

Study program: Organic agriculture
Course Title: ORGANIC CROP PRODUCTION
Teacher/teachers: Olivera Nikolić, Zorana Srećkov
Status: Compulsory, 5th semester
ECTS: 7
Requirement: None
<p>The course aims</p> <p>The goal of the course is to explain students the most important terms in crop production and its history as well as to present methods and principles of crop production in accordance with sustainable agriculture, especially organic crop production in existing agro ecological conditions.</p>
<p>The course outcome</p> <p>Mastering the program, students would be able to apply principles and methods of organic production in crop technology of main and alternative plant species and make a proper choice of genotypes, non GMO, adaptable to local agroecological conditions, customer requirements and expected financial effects. At the same time, subject enables the understanding of the differences between conventional and ecological farming and the possibility of adaptation and transformation systems into sustainable management of agricultural production.</p>
<p>The course content</p> <p><i>Theory classes</i></p> <p>The concept and characteristics of crop production, traditional, conventional and organic farming (characteristics and differences). Division of field crops. Botanical classification and origin. Biological specificity of field crops important for organic production (morphology, vegetation length, growing and development phases, traits of root system, adoption and metabolism of nutrients, stability and adaptability, tolerance to stressful conditions). Planting conditions. Technology of planting field crops: crop rotation, soil preparation, application of fertilizers, sowing and plant care, harvest.</p> <p>Specificity of crop production in organic agricultural system and adaptability of some species to such requirements.</p> <p>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). Organic production of grain legumes (soybean, peas, beans, lentils, Vigna, chickpeas, peanuts), oil crops (sunflower, poppy seed oil, black mustard, safflower, and marigold), and energy type plants (canola, sugar beet), textile plants (hemp, flax) and root - tubers (potatoes, Jerusalem artichokes, chicory).</p> <p>Comparative planting technology in conventional and organic production of studied crops.</p> <p><i>Practice classes</i></p> <p>Field exercises, tour of producers, identification field crops varieties, getting know with crop production technology, making production plans in accordance with organic production.</p>
<p>Literature</p> <p>Ikadinović, J.N., Popović, V.M (2020). Organska biljna proizvodnja. Poljoprivredni fakultet. Univerzitet Bijeljina.</p> <p>Lakić, Ž., Glamočija, Đ., Kondić, D., Popović, V., Pavlović, S. (2018). Krmne biljke i žita u funkciji zaštite. Monografija. Poljoprivredni fakultet, Univerzitet u Banjoj Luci.</p> <p>Latković, D., (2015). Gajenje alternativnih njivskih biljaka. Univerzitet u Novom Sadu, Poljoprivredni fakultet i Pokrajinski sekretarijat za poljoprivredu, vodoprivredu i šumarstvo.</p> <p>http://www.nsseme.com/blog/wp-content/uploads/2013/01/Vodic-za-organsku-proizvodnju-kukuruza.pdf</p> <p>http://www.nsseme.com/blog/wp-content/uploads/2013/01/Vodic-za-organsku-proizvodnju-soje.pdf</p> <p>http://www.nsseme.com/blog/wp-content/uploads/2013/01/Vodic-za-organsku-proizvodnju-suncokreta.pdf</p> <p>http://www.nsseme.com/blog/wp-content/uploads/2013/01/Vodic-za-organsku-proizvodnju-psenice.pdf</p> <p>Milošević, M., Teofanov, S. (2012). Osnovi organske biljne proizvodnje. Vlada APV, Uprava za zajedničke poslove pokrajinskih organa i Institut za ratarstvo i povrtarstvo Novi Sad.</p> <p>Kovačević, D. (2003). Opšte ratarstvo. Univerzitet u Beogradu, Poljoprivredni fakultet Zemun.</p> <p>Bavec, F, Bavec, M. (2006). Organic Production and Use of Alternative Crops, Taylor and Francis (CRC).</p> <p>Morgera, E., Caro, B.C. Durán, G.M. (2012). Organic agriculture and the law.</p> <p>http://www.fao.org/docrep/016/i2718e/i2718e.pdf</p> <p>Lampkin, N. (2010). Organic farming myth and reality, World agriculture, 1, 46-53.</p>

FAO/WHO Codex Alimentarius commission: Codex Alimentarius. Organically Produced Foods, 2007.			
Number of active teaching classes 5		Theory classes: 3	Practice classes: 2
Teaching methods			
Lectures with use of computer technology, discussions with students, individual and team work, experimental exercises, preparation and public defense of seminary work.			
Knowledge assessment (maximum 100 points)			
Pre-exam tasks	Points	The final exam	Points
Activity during lectures	10	written exam	
Practical classes	10	oral exam	50
Colloquia	2*10	.....
Seminars	10		

Study program: Organic agriculture		
Course Title: ORGANIC ANIMAL HUSBANDRY		
Teacher/teachers: Slađan Rašić, Milomir Blagojević		
Status: Compulsory, 5th semester		
ECTS: 7		
Requirement: None		
The course aims		
<p>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.</p> <p>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.</p>		
The course outcome		
<p>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.</p>		
The course content		
<i>Theory classes</i>		
<p>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.</p>		
<i>Practice classes</i>		
<p>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</p>		
Literature		
<p>Bogdanović, V. (2016). Biološke osnove stočarstva. Poljoprivredni fakultet, Beograd.</p> <p>Petrović, M., Bogdanović, V., Rakonjac, S. (2012). Praktikum iz bioloških osnova stočarstva. Agronomski fakultet, Čačak.</p> <p>Mitić, N., Ferčej, J., Zeremski, D., Lazarević, Lj. (1987). Govedarstvo, Zavod za udžbenike i nastavna sredstva, Beograd.</p> <p>Mitić, N. (1987). Ovčarstvo, Zavod za udžbenike i nastavna sredstva, Beograd.</p> <p>Flack, S. (2011). Organic Dairy Production, Chelsea Green Publishing.</p> <p>Telford, L., Macey, A. (2014). Organic Livestock Handbook, Acres, U.S.A.</p>		
Number of active teaching classes 5	Theory classes: 3	Practice classes: 2
Teaching methods		

Lectures, interactive teaching, discussions with students, experimental exercises, writing and public defense of Applied practical work

Knowledge assessment (maximum 100 points)

Pre-exam tasks	Points	The final exam	Points
Activity during lectures	10	Written exam	25
Practical classes	10	Oral examination	25
Colloquia	15		
Seminars	15		

Study program: Organic agriculture			
Course Title: MEDICINAL AND HONEY PLANTS			
Teacher/teachers: Zorica Mrkonjić, Slađan Rašić			
Status: Compulsory, 5th semester			
ECTS: 6			
Requirement: None			
The course aims Enabling students to get acquainted with the importance of medicinal plants, their application, methods of collection and cultivation. The course should point out to students the healing effect and biologically active substances possessed by the mentioned plant species, as well as the endangering factors and legal measures for the protection of wild medicinal plants in Serbia. The course should enable the student to acquire knowledge / understanding of: the concept and significance of honey plants; characteristics of flowers in the function of attractiveness for the honey bee, etc. pollinators, abiotic and biotic pollination factors; basic classes of pollinators, adaptive characteristics of pollinators in the function of pollination; morpho-anatomical characteristics, position and role of floral and extrafloral nectaries; nectar production and secretion processes; morphological characteristics of pollen; the importance of the most efficient pollinators of our region in preserving plant species and increasing the yield of cultivated plants.			
The course outcome Independent training for recognizing and collecting medicinal herbs. The student should be able to: determine the most important honey plant species of our region and assess their honey potential, identify nectar glands, determine the intensity of honey by direct and indirect methods; recognizing and describing the morphological characteristics of pollen grains.			
The course content <i>Theory classes</i> Historical review of the use of medicinal herbs, methods of harvesting, cultivation, packaging and storage of drugs. Division according to dominant active substances in plants: Alkaloid drugs, plants with essential oils, heteroside plants, saponoside plants, tannin drugs, plants with resins and balms, plants with lower aliphatic acids, plants with vitamins, legal measures for protection of medicinal plants. Introduction to the basic characteristics of certain groups on the example of species. The concept of honey plants and honey potential of flowering plants; the most important honey plants of Serbia in terms of flowering phenology; cultivated plants such as bee pasture; floral attractiveness factors; nectaries - position, structure and function; pollen - basic morphological characteristics; nectar - production, secretion and chemical composition; abiotic and biotic pollination factors; entomophilia; review of the most important insect pollinators in Serbia. <i>Practice classes</i> Microscopic and macroscopic recognition of herbal drugs. Determination of important honey plants and pollinators of Serbia; determination of basic morphological characteristics of pollen grains.			
Literature Igić, R., Vukov, D., Božin, B., Orlović, S. (2010). Lekovite biljke-Prirodni resursi Vojvodine, "Vrelo"-Društvo za zdravu ishranu i zaštitu životne sredine, Novi Sad. Jančić, R. (2005). Botanika farmaceutika. Službeni list SCG, Beograd. Tucakov, J. (1973). Lečenje biljem. Rad, Beograd. Mačukanović – Jocić, M. (2010). Biologija medonosnog bilja. Poljoprivredni fakultet, Beograd. Mačukanović – Jocić, M. (2009). Medonosno bilje i polinacija sa radnom sveskom. Praktikum I deo. Poljoprivredni fakultet, Beograd. Mader, E., Spivak, M., Evans, E. (2010). Managing Alternative Pollinators, Ithaka, NewYork.			
Number of active teaching classes 5	Theory classes: 3	Practice classes: 2	
Teaching methods 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.			
Knowledge assessment (maximum 100 points)			
Pre-exam tasks	Points	The final exam	Points

Activity during lectures	5	Written exam	25
Practical classes	5	Oral examination	25
Colloquia	20		
Seminars	20		

Study program: Organic agriculture			
Course Title: AGROFORESTRY IN AGRICULTURE			
Teacher/teachers: Mirjana Bojović, Nevena Čule			
Status: Elective 1, 5th semester			
ECTS: 8			
Requirement: None			
The course aims			
The course aims to expand students' knowledge about methods and technologies of agroforestry. Through the course, students should gain the ability to solve specific problems, thorough knowledge and understanding of the theory of planning, design, establishing, nurturing and evaluation of agroforestry systems as well as readiness for analysis and synthesis of acquired knowledge from this discipline.			
The course outcome			
Students are trained to solve complex problems innovatively and independently and thus contribute to the development and improvement of research and practical techniques in this field. Based on the acquired knowledge, students can plan, design, establishing and maintain in a functional state different types of agroforestry systems, as well as evaluate emerging ecosystems based on different criteria.			
The course content			
<i>Theory classes</i>			
Analysis of environmental conditions; Ecological factors of degraded landscapes and their importance in establishing and nurturing agroforestry systems; Planning and design of different types of agroforestry systems (Windbreaks, Silvoarable, Forest Farming Systems, Silvopasture, Forest gardening, Riparian forest buffers and others). Planning and design of different types of biological reclamation of degraded areas (surface mines, mines, tailings, ash dumps, landfills, etc.); The role and function of vegetation in the remediation of degraded areas; Selection of tree and shrub species for establishing of agroforestry systems and biological reclamation; Selection of planting material for establishing of agroforestry systems and biological reclamation; Methods and technological procedures of establishing, planting, sowing, monitoring and maintenance of plantings; Preparatory works for establishing of agroforestry systems and greenery on degraded areas; Selection and protection of existing tree species in the field; Transfer of the project to the field; Agro technical soil preparation; Time of planting and sowing; Planting and sowing; Initial plant care; Soil care measures; Plant care measures; Monitoring of emerging ecosystems; Economic and sociological aspects of agroforestry systems; Evaluation of agroforestry systems.			
<i>Practice classes</i>			
Organizing practical workshops, group discussions as well as preparation and defence of seminar papers			
Literature			
Nair, P.K.R. (1993). An introduction to agroforestry. Kluwer Academic Publishers, Dordrecht, The Netherlands. ISBN 0-7923-2134-0.			
Vujić, S., Miljanović, I., Cvejić, J., Dražić, D. (2009). Projektovanje rekultivacije i uređenje predela površinskih kopova, Rudarsko-geološki fakultet Univerzitet u Beogradu; 1-366. ISBN 86-7352-225-0.			
Dražić, D. (2002). Multifunkcionalna valorizacija predela i ekosistema stvorenih rekultivacijom odlagališta površinskih kopova Kolubarskog basena. Monografija. Savezni sekretarijat za rad, zdravstvo i socijalno staranje – Sektor za životnu sredinu, Beograd; 1-261. ISBN 86-7650-000-2.			
Kangas, P. (2003). Ecological engineering: Principles and Practice, Lewis Publishers CRC Press LLC, Florida; 1-472. ISBN0203486544.			
Anastasijević, N. (2011). Podizanje i negovanje zelenih površina, Šumarski fakultet, Beograd.			
Cook, T.W., Vanderzanden, A.M. (2011). Sustainable Landscape Management: Design, Construction and Maintenance, John Wiley and Sons, Inc, USA; 1-256. ISBN 0470880422.			
Number of active teaching classes 6		Theory classes: 3	Practice classes: 3
Teaching methods			
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.			
Knowledge assessment (maximum 100 points)			
Pre-exam tasks	Points	The final exam	Points
Activity during lectures	10	Written exam	50
Practical lessons	10	Oral exam	
Colloquia	20		

Seminars	10		
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Study program: Organic agriculture			
Course Title: FERTILIZATION IN ORGANIC AGRICULTURE			
Teacher/teachers: Olivera Nikolić			
Status: Elective 1, 5th semester			
ECTS: 8			
Requirement: None			
The course aims			
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 techniques of preparation and use organic fertilizers and other matters in organic agriculture 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.			
The course outcome			
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.			
The course content			
<i>Theory classes</i>			
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. Fertilization as agritechnical treatment. The kind of fertilizers in conventional and organic agriculture. The forms of fertilization: the basic and additional fertilization. Ameliorative fertilizations: procedures and aims. Factors affecting the determination of mineral fertilizers, Legislation related to fertilization in organic production. The general traits of organic fertilizers. humification, organic fertilizers. Manure: origin, division and application. Green manure: description, influencing factors, performance techniques. Compost: ecological and productive aspect, classical and modern ways of preparation, critical points of preparation and application. Modern fertilizers: microbial and other preparations			
<i>Practice classes</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			
Literature			
Ikanović, J.N., Popović, V.M., Pavlović, S.N. (2020). Agroekologija i zaštita zemljišta. Fakultet za ekologiju, Nezavisni Univerzitet Banja Luka			
Manojlović, M. (2008). Đubrenje u održivoj poljoprivredi, monografija. Poljoprivredni fakultet Novi Sad. http://www.fao.org/3/an443sr/an443sr00.pdf			
Chandra, K. (2005). Organic Manures http://ncof.dacnet.nic.in/Training_manuals/Training_manuals_in_English/Organicmanures.pdf			
Composting, www.nswaienvi.nic.in/			
Carvajal-Muñoz, J.S., Carmona-Garcia, C.E. (2012). Benefits and limitations of bio fertilization in agricultural practices, http://www.lrrd.org/lrrd24/3/carv24043.htm			
Number of active teaching classes 6		Theory classes: 3	Practice classes: 3
Teaching methods			
Lectures with use of computer technology, discussions with students, individual and team work, experimental exercises, preparation and public defense of seminary work.			
Knowledge assessment (maximum 100 points)			
Pre-exam tasks	Points	The final exam	Points
Activity during lectures	10	Written exam	
Practical lessons	10	Oral exam	50
Colloquia	2*10	

Seminars	10		
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Study program: Organic agriculture		
Course Title: ORGANIC BEEKEEPING		
Teacher/teachers: Slađan Rašić		
Status: Compulsory, 6th semester		
ECTS: 5		
Requirement: None		
The course aims		
<p>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.</p>		
The course outcome		
<p>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.</p>		
The course content		
<i>Theory classes</i>		
<p>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.</p>		
<i>Practice classes</i>		
<p>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).</p>		
Literature		
<p>Mladenović, M., Rašić, S. (2016). Pčelarenje. Univerzitet Ekukons, Sremska Kamnenica Ćerimagić, H. (1991). Pčelarstvo, Zadruga knjiga, Sarajevo. Mladenović, M., Stevanović, G. (2003). Uzgajanje visokokvalitetnih matice. Zavet, Beograd. Kulinčević, J., Gačić, R. (1991). Pčelarstvo, BIGZ, Beograd. 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, 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.</p>		
Number of active teaching classes 4	Theory classes: 2	Practice classes: 2
Teaching methods		
<p>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.</p>		
Knowledge assessment (maximum 100 points)		

Pre-exam tasks	Points	The final exam	Points
Activity during lectures	5	Written exam	25
Practical classes	5	Oral exam	25
Colloquia	20		
Seminars	20		

Study program: Organic agriculture			
Course title: CIRCULAR ECONOMY			
Teacher/teachers: Simonida Vukadinovic, Jelena Jesic			
Status: Elective 2, 6th semester			
ECTS: 7			
Requirement: none			
The course aims			
Studying the subject topic allows students to master the terminology and structure in the field of circular economy. The importance of the course is a detailed acquaintance of students with the segment of sustainable development related to business that is based on the circular economy. The emphasis is on researching examples of good practice around the world, and business opportunities in line with sustainable development.			
The course outcome			
The student acquires basic and additional theoretical and practical knowledge in the field of circular economy, as well as concepts related to sustainable development strategy. The student acquires current knowledge about this segment of economy by researching the global goals of the circular economy, as well as the recommendations and plans of the European Union and the Republic of Serbia. Determining sustainable development, which is basically related to improving the quality of life in a way that can be maintained - economically and environmentally, long-term supported by the country's institutional infrastructure. For this reason, students will look at sustainable development through four main dimensions: social, economic, environmental and institutional.			
The course content			
<i>Theory classes</i>			
Circular economy, circular business model and modern industries in which circular economy is applied, circular economy of the European Union, employment in the sectors of circular economy in the world and in the Republic of Serbia. Introduction to Sustainability and Sustainable Factors of Production (Defining Sustainability and its Link to Excessive Consumption and Excessive Production from a Business and Economic Perspective. Presenting Multiple Indicators for Measuring Sustainability, including UN Sustainable Development Goals.); Sustainability premise (Analysis of opportunities for sustainable development and models for designing sustainable business processes.); Circular economy and sustainable business models (defining the basics of circular economy and characteristics of circular business model, business advantages of transition to circular business model.) Encouraging innovation through efficient solutions (Sustainability as a driver of eco-innovation and eco-innovation that founded the concept of sustainability, frameworks and models for creating sustainable innovation.); Economic and social aspects of investing in the circular economy and sustainable development.			
<i>Practice classes</i>			
Case studies, presentation of relevant examples of good practice that apply the concept of circular economy, debate on topics in the field of circular economy.			
Literature			
Lacy, P., Long, J., Spindler, W. (2019). The Circular Economy Handbook: Realizing the Circular Advantage, Palgrave Macmillan.			
Mitrović, S., Radosavljević, I., Veselinov, M. (2017). Cirkularna ekonomija kao šansa za razvoj Srbije, OECD.			
Webster, K. (2017). The Circular Economy: A Wealth of Flows, Ellen Macartur Foundation.			
Matić, J. (2019). Priručnik za cirkularni dizajn proizvoda, UNDP.			
Number of active teaching classes 5		Theory classes: 3	Practice classes: 2
Teaching methods			
Interactive work, multimedia approach. Visiting experts in the field of insurance with topics from practice.			
Knowledge assessment (maximum 100 points)			
Pre-exam tasks	Points	The final exam	Points
Activity during lectures	10	written exam	
Practice classes		oral exam	30
Colloquia	50	.....
Seminars	10		

Study program: Organic agriculture			
Course Title: PLANT PROTECTION IN ECOLOGICAL FRUIT PRODUCTION			
Teacher/teachers: Slobodan Milenković			
Status: Elective 2, 6th semester			
ECTS: 7			
Requirement: None			
The course aims			
Transfer the students' knowledge about the characteristics of the concept of pest and diseases management in ecological/organic fruit production of cultivated continental fruit species, autochthonous and newly created, varieties suitable for ecological production.			
The course outcome			
The acquired knowledge and skills about plant protection in the technology of cultivation and exploitation of indigenous fruits and new varieties in ecological farming system. Sustainable use of genetic resources of fruit trees and variability of resource conservation and use in the ecological fruit production.			
The course content			
<i>Theory classes</i>			
Introduction to the plant protection in ecological fruit growing, biological and ecological characteristics of the type of fruit and the varieties within each species. Resistance of fruit species and cultivars to the plant diseases and pests. Beneficial micro and macro organisms (microorganisms, insects, nematodes, birds) in biological fruit pest management. Preventive integrated pest and diseases measures in ecological fruit growing. Monitoring and forecasting of fruit diseases and pests. Soil maintenance system and weed control. Biostimulants, mycorrhiza and useful bacteria, influence on the resistance of fruit species to the diseases and pests. Biopesticides and plant extracts in plant protection in ecological fruit growing.			
<i>Practice classes</i>			
Other modes of teaching, Study research work, Development of the concept of applying beneficials, resistant genotypes and biopesticides as a part of effective pest and diseases control measures in ecological fruit growing. 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.			
Literature			
Миленковић, С. (2015). Биолошка заштита биљака и отпорне сорте у органској пољопривреди. Србија органика, ГИЗ, Београд.			
Milenković, S. (2011). Organska proizvodnja jagodastog voća. Zadužbina Andejević, Beograd.			
Ивановић Милан, Ивановић Мирко (2017): Болести воћака и винове лозе. Универзитет у Београду. Пољопривредни факултет – Земун.			
Glišić, I., Cvetković, M. (2020). Projektovanje i podizanje zasada. Univerzitet u Kragujevcu, Agronomski fakultet, Čačak.			
Milivojević, J. (2018). Posebno voćarstvo 3 – jagodaste voćke - . Poljoprivredni fakultet, Zemun.			
Kovačević, D., Oljača, S. (eds.) (2005). Organska poljoprivredna proizvodnja, monografija Poljoprivredni fakultet, Zemun.			
Prodanović, S., Šurlan-Momirović, G. (2006). Genetički resursi biljaka za organsku poljoprivredu. (M. Urošević, ed.) Izdavač: Poljoprivredni fakultet, Beograd. p.125.			
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.			
Number of active teaching methods 5		Theory classes: 3	Practice classes: 2
Teaching methods			
Interactive teaching with video presentation, questions and discussion. Development of the plant protection concept in ecological fruit growing. Visits to farms and businesses with certificated fruit production.			
Knowledge assessment (maximum 100 points)			
Pre-exam tasks	Points	The final exam	Points
Activity during lectures	5	Written exam	
Practical classes	5	Oral exam	40
Colloquia	30		
Seminars	20		

Study program: Organic agriculture
Course Title: GENERAL PLANT PROTECTION IN ECOLOGICAL AGRICULTURE
Teacher/teachers: Mira Pucarević, Slobodan Milenković
Status: Elective 3, 6th semester
ECTS: 7
Requirement: None
<p>The course aims 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.</p>
<p>The course outcome 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</p>
<p>The course content <i>Theory classes</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>Practice classes</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;</p>
<p>Literature Milenković, S. (2015). Biološka zaštita biljaka i otporne sorte u organskoj poljoprivredi. Serbia organika, GIZ, Beograd. Ivanović, M., Ivanović, M. (2017). Bolesti voćaka i vinove loze. Poljoprivredni fakultet, Zemun. Delibašić, G., Babović, M. (2005). Opšta fitopatologija – Praktikum. Poljoprivredni fakultet Beograd - Zemun i Akademska misao Beograd. Štrbac, P., Čupina, A. (2000). Entomologija. Poljoprivredni fakultet, Novi Sad. Marčić, D., Perić, P., Milenković S. (2011). Acaricides - Biological Profiles, Effects and Uses in Modern Crop Protection. In: Pesticides - Formulations, Effects, Fate, (Stoytcheva M. Ed.). Kljajić, P. (urednik) (2008). Zaštita uskladištenih biljnih proizvoda od štetnih organizama. Institut za pesticide i zaštitu životne sredine. Konstantinović, B. (1999). Poznavanje i suzbijanje korova. Stilos. Sekulić, R., Spasić, R., Kereši, T. (2008). Štetočine povrća i njihovo suzbijanje. Polj. fak. Novi Sad i Beograd i Institut za ratarstvo i povrtarstvo, Novi Sad. Internet (Plant Protection, Plant Diseases, Biological Control of Pests and Plant Diseases, Diseases Resistance, Biological Control of Pests and Diseases of Crop Plants, Diagnosis of Plant Disease and Pets, Pests. Weeds, Controlling Weeds, Integrated Plant Protection (IPP), Integrated Pest Management (IPM) 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.</p>

Number of active teaching methods 5	Theory classes: 3	Practice classes: 2	
Teaching methods 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.			
Knowledge assessment (maximum 100 points)			
Pre-exam tasks	Points	The final exam	Points
Activity during lectures	5	Written exam	
Practical classes	5	Oral exam	40
Colloquia	30		
Seminars	20		

Study program: Organic agriculture			
Course Title: FAMILY HOUSEHOLD MANAGEMENT			
Teacher/teachers: Panin Biljana, Dejan Supić, Jelena Tadić			
Status: Elective 3, 6th semester			
ECTS: 7			
Requirement: None			
The course aims			
The course allows the student to acquire: 1. knowledge of the process of managing private sector production units. 2. skills of efficient learning and critical thinking on problems in the field of business management of family farms in the conventional and organic production system 3. ability to solve specific problems in order to effectively manage family farms.			
The course outcome			
Upon completion of the course in this course, the student should be able to: 1. understanding the specifics and complexity of the process of managing private production units in conventional and organic production system 2. performing efficient management of family farms, which is characterized by the absence of all the equipment and resources that were once available to large business systems 3. work with farmers as users of services, associations, credit and agricultural institutions in order to facilitate overcoming the problems of management and administration of family farms; 4. mastering efficient management and administration of small business systems in private ownership; 5. practical application of acquired knowledge in the field of family farm management.			
The course content			
Theoretical classes: 1. The concept of farm management, 2. Economic basics of organic farming and the principles of its organization 3. Business decision making, 4 Keeping accounting records on family farms, 5. Specifics of family farm management and farm financing, 6. Investments on family farms. Practical classes: 1. Case studies and practical experiences, 2. Business management of a family farm, 3. Specifics of management in conventional and organic agricultural production, 4. Development of plans related to agricultural farms, which plan the activities of the farm as a whole and individual activities. 5. Analysis of plans that should indicate why there was a deviation from the planning tasks.			
Literature			
Kay, R. D., Edwards, W M., Duffy, PA. (2004). Farm Management. 5th. Mc Graw Hill. Selected papers related to planning issues in the field of agribusiness, whose bibliographic references the subject teacher publishes 15 days before the start of lectures in the school year.			
Number of active teaching methods 5		Theory classes: 3	Practice classes: 2
Teaching methods			
Lectures, exercises, short repetitoria, discussions and presentations.			
Knowledge assessment (maximum 100 points)			
Pre-exam tasks		Points	The final exam
Activity during lectures		5	Written exam
Practical classes		5	Oral exam
Colloquia		2*20	
Seminars		10	

Study program: Organic agriculture
Course Title: AGRICULTURAL MECHANIZATION
Teacher/teachers: Milorad Đokić
Status: Compulsory, 6th semester
ECTS: 5
Requirement: None
<p>The course aims</p> <p>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>The course outcome</p> <p>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>The course content</p> <p><i>Theory classes</i></p> <p>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><i>Practice classes</i></p> <p>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 parameterize. : 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>Меши, М. (2012). Пољопривредне машине. Универзитет у Новом Саду, Нови Сад. Savin, L., Simikić, M., Nikolić, R., Ivanišević, M. (2016): Poljoprivredni traktori, Poljoprivredni fakultet, Univerzitet Novi Sad Mičić, J., Milinković, I. (1991). Poljoprivredne mašine, Univerzitet u Beogradu, Beograd. Tošić, M., Komarčević, D. (1989). Mehanizacija stočarske proizvodnje, Poljoprivredni fakultet, Beograd. Božić, S., Vukić, Đ., Đokić, M., Ercegović, Đ., Novaković, D., Radivojević, D., Topisirović G. (1995). Osnove pogonskih mašina u poljoprivredi, Univerzitet u Beogradu, Beograd, 1995. Ružičić, L., Đokić, M., Radojević, R. (2000). Poljoprivredne mašine-zbirka zadataka, Univerzitet u Beogradu, Beograd. Pimentel, D. (2006). Impacts of Organic Farming of Energy Use in Agriculture, An Organic Center State of Science Review, Cornell University, Ithaca NY. Hansen, A.L. (2010). The Organic Farming Manual: A Comprehensive Guide to Starting and Running a Certified Organic Farm. Story Publishing. Akinyemi, O. M. (2007). Agricultural Production: Organic and Conventional Systems. US. Taylor & Francis Inc. Moyer, J. (2011). Organic No-Till Farming. Advancing No-Till Agriculture – Crops, Soils, Equipment. Rodale Institute. USA.</p>

Number of active teaching classes 4	Theory classes: 2	Practice classes: 2	
Teaching methods Lectures, exercises, students will be included in the discussion (interactive learning), making term papers, case studies.			
Knowledge assessment (maximum 100 points)			
Pre-exam tasks	Points	The final exam	Points
Activity during lectures	10	Written exam	40
Practical classes	10	Oral exam	
Colloquia	20		
Seminars	20		

Study program: Organic agriculture			
Course Title: BASIC PRINCIPLES OF ORGANIC VEGETABLE PRODUCTION			
Teacher/teachers: Zorana Srećkov, Janko Červenski			
Status: Compulsory, 6th semester			
ECTS: 5			
Requirement: None			
The course aims			
Learning basic concept of organic vegetable production, as well as general agroecological principles of growing vegetable on field and in greenhouses.			
The course outcome			
At the end of the course students will be able to demonstrate knowledge of vegetable production, significance of organic vegetable production, as well as agroecological concept of vegetable growing.			
The course content			
<i>Theory classes</i>			
The importance of organic vegetable production. The role of organic vegetable growing in agro-biodiversity and biodiversity conservation. Quality of organic vegetables. History of vegetable production. Centers of origin. Regions of vegetable production. Basic principles of organic vegetable growing. Growing conditions. Growing techniques. Vegetable growing in greenhouses. Type of greenhouses. Growing vegetable seedlings. Harvesting, transport, packing and vegetable preservation.			
<i>Practice classes</i>			
Vegetable propagation (vegetative and generative). Seeds (biological, morphological and qualitative traits of seed). Estimate of seed quality. Characteristics of different seeds. Tillage in organic agriculture. Plant nutrition in organic agriculture. Crop rotation. Sowing and planting. Field exercises for exploring the production process. – garden, field, greenhouse.			
Literature			
Lazić, B., Ilić, Z., Đurovka, M. (2013). Organska proizvodnja povrća. Centar za organsku proizvodnju Selenča i Edukacioni Univerzitet, Sremska Kamenica.			
Lazić, B., Srećkov, Z. (2017). Rasad – organska proizvodnja. Luka znanja, Novi Sad.			
Todorović, V., Zeljković, S., Moravčević, Đ. (2019). Proizvodnja rasada povrća i cveća. Poljoprivredni fakultet Univerziteta u Banjoj Luci, Banja Luka.			
Hajnal Lafari, T., Stamenov, D., Đurić, S. (2020). Proizvodnja i primena biopreparata. Poljoprivredni fakultet, Novi Sad.			
Ikadinović, J.N., Popović, V.M. (2020). Organska biljna proizvodnja. Poljoprivredni fakultet, Univerzitet u Bijeljini.			
Molnar, I., Milošev, D., Kurjački, I. (2003). Praktikum iz opšteg ratarstva. Poljoprivredni fakultet, Novi Sad.			
Rana, M.K. (2018). Vegetable Crop Science. Taylor & Francis Group			
Olle, M., Williams, I.H (2012). Organic farming of vegetables., In Sustainable Agriculture Reviews.			
Neeson, R. (2007). Going Organic – Organic Vegetable Production. Rural Industries Research and Development Corporation.			
Brown, M., Perez, J., Miles, A. (2005). Teaching Organic Farming & Gardening. Center for Agroecology & Sustainable Food Systems, University of California, Santa Cruz			
Rubatzky, V. E., Yamaguchi, M. (1997). World vegetables: principles, production, and nutritive values. Chapman & Hall.			
Number of active teaching classes 4		Theory classes: 2	Practice classes: 2
Teaching methods			
Lectures, discussions with students, experimental exercises, field work			
Knowledge assessment (maximum 100 points)			
Pre-exam tasks	Points	The final exam	Points
Activity during lectures	10	Written exam	50
Practical classes	10	Oral examination	
Colloquia	20	.....
Seminars	10		

Study program: Organic agriculture			
Course Title: PRODUCTION PRACTICE			
Teacher/teachers: Zorana Srečkov, Tanja Vujanov			
Status: Compulsory, 6th semester			
ECTS: 3			
Requirement: None			
The course aims Production practices should enable students to practically apply the acquired knowledge from some area of plant production, through organizing organic garden. At the same time, students will continue to learn about the principles of organic livestock and standards important for work safety, environmental protection and health safety of products.			
The course outcome Student would be able to suggest necessary tillage, select the appropriate assortment, determine sowing norms and recommend the most suitable crop rotation scheme in organic plant production, in accordance with the objectives and production models. At the same time, student would be able to create model of organic livestock, following the most important principles, and be support to farmers in process of certification and standardization. .			
The course content <i>Theory classes</i> <i>Practice classes</i> Making a model of an organic garden. Tillage and soil preparation for setting up an organic garden and performing other agrotechnical procedures: crop rotation, combining “friend plants” – vegetables with flowers, aromatic and medicinal plants, specific plant care. Preparation of organic and biodynamic substances. Screening and keeping records of performed procedures and noticed plant-specific phenomena. Engaging in activities on the farm.			
Literature			
Number of active teaching classes 6		Theory classes: 0	Practice classes: 6
Teaching methods Practical instruction, combined with interactive teaching , in the field and laboratories. Students participate in current operations and keep practice diary, registering each of procedures elements and all data about performed activities.			
Knowledge assessments (maximum 100 points)			
Pre-exam tasks	Points	The final exam	Points
Mastering the skill	30	Practice diary presentation	40
keeping practice diary	30	oral examination	

Study program: Organic agriculture			
Course Title: BEE PRODUCTS			
Teacher/teachers: Slađan Rašić			
Status: Elective 4, 7th semester			
ECTS: 7			
Requirement: None			
The course aims The course should enable the student to acquire knowledge about all bee products, definition and chemical and nutritional composition of bee products, basic properties of bee products and nutritional properties and processing of honey and other bee products using appropriate active teaching methods and using modern learning resources.			
The course outcome At the end of the course, the student should explain the concept and characteristics of all bee products. Also, the student should show knowledge and understanding of the methods of obtaining bee products, basic biological, chemical-physical and nutritional characteristics of bee products..			
The course content <i>Theory classes</i> The subject is divided into several parts: the technology of obtaining and their use in nutrition and apitherapy is processed separately for each bee product. also the storage of bee products, processing, processing and packaging of honey and other bee products are also studied. <i>Practice classes</i> Practical introduction to beekeeping technologies in order to obtain bee products. Introduction to practical operations in obtaining honey and other bee products, with the methods of processing and packaging. Study of physico-chemical analyzes of honey and other bee products, pollen analysis, etc.			
Literature Mladenović, M., Rašić, S. (2016). Pčelarenje. Univerzitet Ekukons, Sremska Kamenica. 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. Crane, E. (2020). Honey a Comprehensive Survey. Heinemann, London Туников, Г.М., Кривцов Н.И., Лебедев В.И., Кирљнов О.Н. (2001). Технологија производства и переработки продукцији пчеловодства. Apidiologie, Journal of Apiculture Research			
Number of active teaching classes 5		Theory classes: 3	Practice classes: 2
Teaching methods 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. Knowledge assessment (maximum 100 points)			
Pre-exam tasks	Points	The final exam	Points
Activity during lectures	10	Written exam	25
Practical classes	10	Oral examination	25
Colloquia	15		
Seminars	15		

Study program: Organic agriculture			
Course Title: ORGANIC SEED PRODUCTION			
Teacher/teachers: Olivera Nikolić			
Status: Elective 4, 7th semester			
ECTS: 7			
Requirement: None			
The course aims			
The goal of the course is to indicate a strong connection between breeding and seed production, present, in detail, all stages of creation and implementation breeding process, emphasize, clearly, differences between commercial and seed production and provide an analysis of principles and methods of seed production, from production to preparation and marketing of seed in organic system.			
The course outcome			
Acquiring the necessary knowledge and skills, students become more independent and able to recognize key points of seed production and organize seed production, processing and marketing of products, by principles and legislation of organic seed production, to follow this process in practice and interpret indicators of seed quality.			
The course content			
<i>Theory classes</i>			
Introduction, elements of seed production, organic seed production (the basic terms and organization).; Plant breeding in organic production, the sources of variability, biodiversity, genetic resources. Methods of organic plant breeding (approved, conditionally approved, restricted). Registration of organic varieties, testing and protection.			
Plant selection methods (organic and conventional). Definition of seed sowing material, seedlings, seed production.			
General seed production, introduction, regulations on seeds, conventional and organic. Biological basis of seed production, seed viability, biological and other properties of seeds, seeds material (natural and the revised seeds).			
Technology of seed production (soil, crop rotation, sowing, treatment, professional control, harvesting), maintenance and propagation of seeds of recognized and domesticated varieties. 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. Seed categories.			
Technology of seeds processing, using organic allowed resources and materials for seed protection, packaging, packing and declaring, storage and maintaining seed quality.			
Marketing in seed production and international trade in seeds. Organic seed production, specific organic seed production. Legislation in the field of organic seed production, the Law on Seed, the Law on Organic Agriculture of Serbia and EU regulation. 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>Practice classes</i>			
Introduction to seeds and seedlings, seed categories, labeling, control and certification of organic seeds, seed quality testing, visiting producers and processors of organic and conventional seeds.			
Literature			
Breeding for resilience: a strategy for organic and low-input farming systems? (2010). v. of the "Organic and Low-Input Agriculture" Proceedings. Paris http://www.itab.asso.fr/downloads/actes/actes-eucarpia2010.pdf			
Organic Seed Alliance www.seedalliance.org			
Lammerts van Bueren, E.T., Hulscher, M., Haring, M., Hoogendorn, J., den Nijs, A.P.M., van Mansvelt, J.D., Jongerden, J., Ruvenkamp, G. (1999). Sustainable organic plant breeding. Final report, a vision choices, consequences and steps, Louis Bolk Institute			
Milošević, M. i sar. (2011). Semearstvo I i II. Institut za ratarstvo i povrtarstvo, Novi Sad (https://www.ifvcns.rs/elektronska_biblioteka/knjige/Semearstvo%20I.pdf).			
Number of active teaching classes 5		Theory classes: 3	Practice classes: 2
Teaching methods			
Lectures with use of computer technology, discussions with students, individual and team work, experimental exercises, preparation and public defense of seminary work.			
Knowledge assessment (maximum 100 points)			
Pre-exam tasks		Points	The final exam
Activity during lectures		10	Written exam
Practical classes		10	Oral examination 50

Colloquia	2*10	.....
Seminars	10		

Study program: Organic agriculture			
Course title: FUNDAMENTALS OF MARKETING IN ORGANIC PRODUCTION			
Teacher/teachers: Diona Đurđević, Dejan Supić			
Status: Elective 5, 7th semester			
ECTS: 8			
Requirement: none			
The course aims			
The aim of the course is to acquaint students with the basics of marketing, as well as the importance and role of marketing in organic production, with marketing mix instruments (product, price, place and promotion), as well as marketing strategies that should enable successful market positioning of organic products in modern business conditions.			
The course outcome			
Understanding the role and importance of marketing in organic production and enabling students to independently design and coordinate marketing mix instruments (product, price, place, promotion), as well as implementing marketing strategies to successfully position organic products by delivering value to customers in the modern market.			
The course content			
<i>Theory classes</i>			
1. The role and importance of marketing in organic production; 2. The nature of marketing and marketing mix; 3. Global marketing environment; 4. Understanding the behavior of customers (consumers) in the market of organic products; 5. Marketing research and information system; 6. Market segmentation, targeting and positioning of organic products; 7. Product and brand management in modern market conditions; 8. Price formation strategy with special reference to organic products; 9. Integrated marketing communications; 10. Mass communication techniques and direct communication techniques on the market of organic products; 11. Customer relationship management; 12. Distribution management; 13. Traditional marketing strategies; 14. Modern approach to marketing and market strategies; 15. Delivery of value to the customer.			
<i>Practice classes</i>			
Case studies related to the management of marketing activities, the design of marketing mix instruments and the application of marketing strategies in organic production, examples of successful practice with an emphasis on world practice.			
Literature			
Jobber, D., Fahy, J. (2006). Osnovi marketinga, Data Status, Beograd.			
Kotler, P., Keller, K. (2017). Marketing menadžment, 15. izdanje, Data Status, Beograd.			
Grgar, D. (2011). Kako postati konkurentan?, Zadužbina Andrejević, Beograd.			
Kotler, P. (2007). Kako kreirati, ovladati i dominirati tržištem, Asee, Novi Sad.			
Đurđević, D. (2016). Osnovi brendiranja, Univerzitet Edukons, Sremska Kamenica (Priručnik za kurs- Brendiranje organskih proizvoda- u okviru TEMPUS projekta: Izgradnja kapaciteta srpskog obrazovanja u oblasti poljoprivrede radi povezivanja sa društvom (CaSA- Building Capacity of Serbian Agricultural Education to Link with the Society) 544072-TEMPUS-1-2013-1-RS-TEMPUS-SMHES (2013 - 4604 / 001-001))			
Rabrenović, A., Čeranić, J. (2012). Usklađivanje prava Republike Srbije sa pravnim tekovinama EU: Prioriteti, Problemi, Perspektive (Prvi deo: Poljoprivreda i ruralni razvoj), Institut za uporedno pravo Beograd.			
Number of active teaching classes	6	Theory classes:	3
		Practice classes:	3
Teaching methods			
Lectures, practice classes, consultations, case study methodology, seminar papers.			
Knowledge assessment (max 100 points)			
Pre-exam tasks	Points	The final exam	Points
Activity during lessons	5	written exam	40
Practical classes	5	oral exam	
Colloquia	2*20	.....
Seminars	10		

Study program: Organic agriculture			
Course Title: VEGETABLE PRESERVATION			
Teacher/teachers: Zorana Srećkov			
Status: Elective 5, 7th semester			
ECTS: 8			
Requirement: Basic Principles of Organic Vegetable Production and Organic Vegetable Production			
The course aims			
The main goal is learning about significance of vegetable preservation, different methods of vegetable preservation, as well as decreasing lose in quality during preservation.			
The course outcome			
At the end of the course students will be able to demonstrate knowledge about significance of vegetable preservation for human diet, about vegetable preservation optimal factors as well as new preharvest technology and technology during storages.			
The course content			
<i>Theory classes</i>			
Introduction in vegetable preservation. Quality of vegetables. Biology of vegetable ripening. Growing factors and its significance on process of preservation. 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 - basic principles of the controlled cooling, forced-air cooling, hydro-water cooling, liquid cooling ice with chopped ice, vacuum cooling, refrigeration drying. Sorting and packing. Physiology of 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 of keeping (temperature, relative humidity, light, air composition). Products incurred during storage. Methods for the vegetable preservation (simple storage, half-controlled and controlled conditions).			
<i>Practice classes</i>			
Morphology of vegetable products. Harvesting methods. Conditions of storage. Physiology of storage. Methods of vegetable preservation.			
Literature			
Ilić, Z., Falih, E., Dardić, M. (2009). Berba, sortiranje, pakovanje i čuvanje povrća. Poljoprivredni fakultet, Kosovska Mitrovica.			
Ilić, Z., Falik, E., Đurovka, M., Martinovski, Đ., Trajković, R. (2007). Fiziologija i tehnologija čuvanja voća i povrća, Novi Sad.			
Pineiro, M., Diaz Rios, L.B. (2004). Improving the quality and safety of fresh fruits and vegetables: a practical approach. United Nations Food and Agriculture Organization, Rome, Italy.			
Ilić, Z., Falik, E. (2002). Čuvanje povrća. Univerzitet u Prištini.			
Rana, M.K. (2018). Vegetable Crop Science. Taylor & Francis Group			
Chakraverty, A., Singh, R.P. (2014). Postharvest Technology and Food Process Engineering. Taylor & Francis Group			
Rubatzky, V. E., M. Yamaguchi (1997). World vegetables: principles, production, and nutritive values. Chapman & Hali.			
Number of active teaching classes 6		Theory classes: 3	
		Practice classes: 3	
Teaching methods			
Lectures, discussions with students, experimental exercises, field work			
Knowledge assessment (maximum 100 points)			
Pre-exam tasks	Points	The final exam	Points
Activity during lectures	10	Written exam	50
Practical classes	10	Oral examination	
Colloquia	20	.....
Seminars	10		

Study program: Organic agriculture			
Course title: STATISTICS			
Teacher/teachers: Maja Nedović, Molnar Tamaš, Ljiljana Cvetković			
Course status: Compulsory, 7th semester			
ECTS: 7			
Requirement: none			
The course aims To familiarize students with basic concepts and methods of business statistics.			
The course outcome Understanding and mastering the basic statistical methods and solving specific problems. Developing correct statistical inference.			
The course content <i>Theory classes</i> Descriptive statistics: Collection, presentation and analysis of statistical data. Population and sample. Measures of central tendency. Waste measures. Position measures. Elements of the probability theory. Random variables. Distributions. Inferential statistics: Conclusion from sample to population. Confidence intervals. Testing hypothesis. ANOVA. Correlation and regression. Time series. Indexes <i>Practice classes</i> The exercises cover practical examples that follow the lecture.			
Literature Cvetković, Lj. (2006). Poslovna statistika. Futura publikacije, Novi Sad. Sullivan, M. III (2007). Statistics: Informed Decisions Using Data 2ed“, Prentice Hall. Agresti, A., Franklin, C. (2007). Statistics: The Art and Science of Learning From Data, Prentice Hall.			
Number of active teaching classes 6		Theory classes: 3	Practice classes: 3
Teaching methods Theory classes accompanied by numerous examples. Independent work in exercises.			
Knowledge assessment (max 100 points)			
Pre-exam tasks	Points	The final exam	Points
Activity during lectures		written exam	40
Practice classes		oral exam	
Colloquia	60		
Seminars			

Study program: Organic agriculture			
Course Title: FUNCTIONAL FOOD			
Teacher/teachers: Zorica Mrkonjić, Dragana Linda Mitić			
Status: Compulsory, 7th semester			
ECTS: 3			
Requirement: None			
The course aims			
Introducing students to functional food and the most important natural resources. Emphasis of medicinal herbs in obtaining functional foods. Introduction to basic concepts such as phytonutrients and nutraceuticals.			
The course outcome			
<ul style="list-style-type: none"> • Classify phytonutrients according to molecular structure, physicochemical and biological properties • List the most important natural sources of functional food • Define the specifics of functional foods and nutraceuticals • Explain the relationship of the molecular structure of phytonutrients with antioxidant, antimicrobial, anti-inflammatory and other potential positive effects, as well as bioavailability and bioavailability • Indicate the possibilities of industrial application of functional products and nutraceuticals, potential application for therapeutic purposes and in the prevention of various disorders and diseases 			
The course content			
Definition of functional food. Classification and chemical properties of phytonutrients. The most important natural resources. Biologically active compounds. Industrial application of phytonutrients: as natural additives, nutraceuticals, production of functional products, bio-pesticides. Mechanisms of antioxidant and antimicrobial action of phytonutrients. Bioavailability and bioavailability of phytonutrients; potential preventive effects in protecting human health. The place of medicinal herbs in obtaining functional foods. Division of functional products. Extraction processes. Production of fortified food products. Modern technologies for the production of functional products, food supplements, nutraceuticals.			
Literature			
Rotimi, E.A. (2012). Functional Food and Nutraceuticals, Springer Science+Business Media, LLC.			
Galanakis, C.M. (2017). Nutraceutical and Functional Food Components, Academic Press Elsevier.			
Mišan, A., Arsić, I., Đorđević, S., Tadić, V., Psodorov, Đ. (2013). Funkcionalna hrana i lekovito bilje, Novi Sad.			
Number of active teaching classes 3		Theory classes: 2	Practice classes: 1
Teaching methods			
Lectures, interactive work, experimental work			
Knowledge assessment (maximum 100 points)			
Pre-commitments	Points	The final exam	Points
Activity during lectures	10	Written exam	50
Practical classes	10	Oral examination	
Colloquia	30	.....
Seminars			

Study program: Organic agriculture			
Course Title: GROWING OF ALTERNATIVE FIELD CROPS			
Teacher/teachers: Olivera Nikolić, Dragan Perović, Zorana Srećkov			
Status: Compulsory, 8th semester			
ECTS: 3			
Requirement: None			
The course aims			
The main goal of this course is introducing student with growing condition, as well as growing methods of alternative field crops (cereals, pseudo cereals, alternative oil plants, alternative fiber, root and tuber crops, alternative legumes)			
The course outcome			
At the end of the course students will be able to demonstrate knowledge about botanical and morphological characteristics, growing conditions and growing technics of alternative field crops.			
The course content			
<i>Theory classes</i>			
Classification of field crops. Economic importance, growing conditions and growing technology of alternative cereals (spelt, kamut, rye, triticale etc.). Economic importance, growing conditions and growing technology of alternative pseudo cereals (sorghum, millet, rice, etc.). Economic importance, growing conditions and growing technology of alternative legumes (lentils, faba beans, chickpeas, peanuts). Economic importance, growing conditions and growing technology of alternative oil crops (castor, sesame seeds, and safflower). Economic importance, growing conditions and growing technology of alternative fiber crops (cotton, kenaf, abutilon, line, hemp)			
<i>Practice classes</i>			
Classification of field crops. Biological and morphological traits alternative field crops of cereals, pseudo cereals, legumes, and oil and fiber crops.			
Literature			
Ikadinović, J.N., Popović., V.M. (2020). Organska biljna proizvodnja. Poljoprivredni fakultet, Univerzitet u Bijeljini.			
Sabadoš, V., Jaćimović, G., Žunić, D., Džeba, Z., Jokić, S., Veselinović, T., Dekić, J., Malešević, M., Aćin, V., Ivan, J., Selukić, O., Boca, Z., Perenčević, J., Katanić, V. (2019). Zemljište, poljoprivreda i ruralni razvoj grada Sombora. PSSS Sombor. Sombor. Srbija.			
Latković, D., Marinković, B., Crnobarac, J., Jaćimović, G., Berenji, J., Sikora, V. (2015). Gajenje alternativnih njijskih biljaka. Poljoprivredni fakultet. Univerzitet u Novom Sadu.			
Glamočija, Đ., Janković, S., Popović, V., Filipović, V., Kuzevski, J., Ugrenović, V. (2015). Alternativne ratarske biljke u konvencionalnom i organskom sistemu gajenja. Monografija. Institut za primenu nauke u poljoprivredi. Beograd. Srbija.			
Brown, C. (2017). Agronomy Guide for Field Crops. The Ministry of Agriculture, Food and Rural Affairs. Toronto, Canada			
Bavec, F., Bavec, M. (2007). Organic Production and Use of Alternative Crops. Taylor and Francis Group			
Number of active teaching classes 3		Theory classes: 2	Practice classes: 1
Teaching methods			
Lectures, discussions with students, experimental exercises, field work			
Knowledge assessment (maximum 100 points)			
Pre-exam tasks	Points	The final exam	Points
Activity during lectures	10	Written exam	50
Practical classes	10	Oral examination	
Colloquia	20	.....
Seminars	10		

Study program: Organic agriculture			
Course Title: NUTRITION OF DOMESTIC AND FARMED ANIMALS			
Teacher/teachers: Milomir Blagojević			
Status: Elective 6, 8th semester			
ECTS: 5			
Requirement: None			
The course aims			
The aim of the course: is to acquaint students with basic nutrients, nutrients for animal nutrition, nutrient needs, basics and specifics of nutrition of the most important domestic and farmed animals and to introduce methods of testing animal feed in breeding and production of animals in organic livestock production.			
The course outcome			
Outcome of the course that students be trained in the basic knowledge and specifics of the diet of individual animal species, as well as to gain information on how to analyze animal feed and compile meals for quality organic livestock production.			
The course content			
<i>Theory classes</i>			
Nutrition Science; Nutrients and their metabolism - carbohydrates, fats, proteins, vitamins, minerals, water; Assessment of the nutritional value of food; Animal feed, production, preparation and use in organic livestock production - green nutrients, bulk nutrients, ensiled nutrients and root tubers, granular nutrients - cereal grains, legumes, oilseeds, by-products of the mill industry and oil industry, by-products of sugar, alcohol industry , beers, starches, animal feeds, yeasts and algae, mineral feeds, preparation of animal feed and compound feeds, canning of animal feed; Animal needs for life support, reproduction, lactation, growth, fattening, labor; Horse nutrition; Pig nutrition; Poultry nutrition; Diet of rabbits, game, fish.			
<i>Practice classes</i>			
Taking packaging and sending samples of animal feed for testing; Methods of testing animal feed. Determination of nutritional value of animal feed - Weende procedure; Examination and hygienic evaluation of greens, nutrients, dry bulky nutrients, silage, root-tuberous nutrients, granular nutrients, flour nutrients and oil meal and cakes; Review and evaluation of animal nutrients, mineral nutrients, aqueous nutrients and feed mixtures used in organic livestock production; Meal composition and computational analysis and correction of meals for feeding horses, pigs, poultry, game and fish in organic livestock.			
Literature			
Flack, S. (2011). Organic Dairy Production, Chelsea Green Publishing			
Coffey, L., Baier, A. H. (2012): Guide for Organic Livestock. National Center for Appropriate Technology (NCAT) Agriculture Specialists.			
Telford, L., Macey, A. (2014). Organic Livestock Handbook, Acres, U.S.A.			
Radiojević, M. (2016). Ishrana domaćih životinja, Sremska Kamenica, Edukons.			
Đorđević, N., Makević, M., Grubić, G., Jokić, Ž. (2009). Ishrana domaćih i gajenih životinja, Beograd- Zemun.			
Jovanović, R., Dujić, D., Glamočić , D. (2000). Ishrana domaćih životinja, Stilos, Novi Sad.			
Beuković, M., Popović, Z. (2014). Lovstvo. Poljoprivredni fakultet. Univerzitet u Novom sadu.			
Đorđević, N., Grubić, G., Stojanović, B. (2003). Osnovi ishrane domaćih životinja. Praktikum. Poljoprivredni fakultet. Univerzitet u Beogradu.			
Marković, Z., Tutundžić, M. V. (2003). Gajenje riba. Zadužbina Andrejević.			
Službeni glasnik Republike Srbije 48/11 (2011). Pravilniko kontroli i sertifikaciji u organskoj proizvodnji i metodama organske proizvodnje. http://www.serbiaorganica.info/wp-content/uploads/2012/08/Pravilnik-o-kontroli-i-sertifikaciji-7.04.2011.pdf			
Number of active teaching classes 4		Theory classes: 3	
		Practice classes: 1	
Teaching methods			
Lectures, interactive teaching, discussions with students, experimental exercises, writing and public defense of Applied practical work			
Knowledge assessment (maximum 100 points)			
Pre-exam tasks		Points	The final exam
			Points

Activity during lectures	10	Written exam	
Practical lessons	10	Oral examination	30
Colloquia	40		
Seminars	10		

Study program: Organic agriculture			
Course title: NATURE PROTECTION			
Teacher/teachers: Mirjana Bojović			
Course status: Elective 6, 8th semester			
ECTS: 5			
Requirement: none			
The course aims			
The objective of the course is to familiarize students with the importance of nature protection and natural resources, as well as the methods of their protection.			
The course outcome			
After mastering the subject, students will gain basic knowledge about the importance and methodology of nature protection and natural resources.			
The course content			
<i>Theory classes</i>			
Basic theoretical and methodological settings of nature protection, importance of nature protection, historical overview of activities on nature protection (in the world and in Serbia). Ecological Network, Green Belt of Europe, Pan European Ecological Network. Natura 2000, Emerald Network. IPA, IBA, PBA areas. Biosphere Reserves, Ramsar Areas. Protection of natural habitats. Protected natural resources. Protection zones. Ecologically significant areas The process of declaring protected natural resources. Management and use of protected areas. Nature protection organization. Nature protection documents. Conservation ecosystem. Ecosystem restoration. Ecosystem Management.			
<i>Practice classes</i>			
Discussion on the causes and factors of threat to biodiversity and the possibility of eliminating them by protecting natural resources. Visit to protected natural resources.			
Literature			
Al Gore: Earth in the Balance: Ecology and the Human Spirit (Plume) Penguin books, 1993, 1-408.			
Jorgensen, S.E., Fath, B.D. , Nielsen, S.N., Pulselli, F.M., Fiscus, D.A., Bastianoni, S. (2015). Flourishing Within Limits to Growth: Following Nature's Way, Publisher by Routledge, 1-222, ISBN 9781138842533			
Vujić, A. (2008): Nature Conservation, Department of Biology and Ecology, Faculty of Science, University of Novi Sad.			
Vujić, A. (2007): Fundamentals of Conservation Biology II, Department of Biology and Ecology, Faculty of Science, University of Novi Sad.			
Law on Nature Conservation (Official Gazette of RS, Nos. 36/2009 and 88/2010).			
Number of hours of active teaching 4		Theory classes: 3	Practice classes: 1
Teaching methods			
Lectures, practice, short repertorium, computer work, discussions, presentations			
Knowledge assessment (maximum 100 points)			
Pre-exam tasks	Points	The final exam	Points
Activity during lectures	10	Written exam	
Practice classes	10	Oral exam	50
Colloquiums	30	.....
Seminars			

Study program: Organic agriculture			
Course Title: ORGANIC VEGETABLE PRODUCTION			
Teacher/teachers: Zorana Srećkov, Janko Červenski			
Status: Compulsory, 8th semester			
ECTS: 5			
Requirement: Basic Principles of Organic Vegetable Production			
The course aims The main goal of the course is to introduce students with botanical and morphological characteristics, growing conditions and organic growing of vegetable crops, as well as harvesting, transport, packing and vegetable preservation.			
The course outcome At the end of the course students will be able to demonstrate knowledge about botanical and morphological characteristics of vegetable crops, growing conditions, growing techniques on open field and in greenhouses, harvesting, transport and packing of vegetable crops.			
The course content <i>Theory classes</i> Classification of vegetable crops (botanical, by organs which are consumed and by life cycles). Morphological and biological characteristics, growing conditions and growing methods of different group of vegetable crops: root vegetables (carrot, celery, parsley, parsnip, dill, beet, radish), bulbous vegetables (onion, garlic, leek), tuberous vegetables (potato), leafy vegetables (cabbage, cauliflower, broccoli, kohlrabi, kale, Brussels sprout, lettuce, endive, spinach, chard), fruit vegetables (tomato, pepper, eggplant, watermelons, melons, cucumber, pumpkins, pea, green beans, sweet corn), perennials (horseradish, artichoke, rhubarb, asparagus) and production of fungi. <i>Practice classes</i> Classification of vegetable crops. Morphological and biological characteristics of following families: Alliaceae, Apiaceae, Brassicaceae, Solanaceae, Cucurbitaceae, Fabaceae, Asteraceae, Chenopodiaceae, Poaceae, Poligonaceae. Field exercises – field production and vegetable production in greenhouses.			
Literature Lazić, B., Ilić, Z., Đurovka, M. (2013). Organska proizvodnja povrća. Centar za organsku proizvodnju Selenča i Edukacioni Univerzitet, Sremska Kamenica. Lazić, B., Srećkov, Z. (2017). Rasad – organska proizvodnja. Luka znanja, Novi Sad. Todorović, V., Zeljković, S., Moravčević, Đ. (2019). Proizvodnja rasada povrća i cveća. Poljoprivredni fakultet Univerziteta u Banjoj Luci, Banja Luka. Rana, M.K. (2018). Vegetable Crop Science. Taylor & Francis Group Olle, M., Williams, I.H. (2012). Organic farming of vegetables., In Sustainable Agriculture Reviews. Neeson, R. (2007). Going Organic – Organic Vegetable Production. Rural Industries Research and Development Corporation Rubatzky, V.E., Yamaguchi, M. (1997). World vegetables: principles, production, and nutritive values. Chapman & Hall			
Number of active teaching classes 4		Theory classes: 2	Practice classes: 2
Teaching methods Lectures, discussions with students, experimental exercises, field work			
Knowledge assessment (maximum 100 points)			
Pre-exam tasks	Points	The final exam	Points
Activity during lectures	10	Written exam	50
Practical classes	10	Oral examination	
Colloquia	20	.....
Seminars	10		

Study program: Organic agriculture			
Course Title: MULTIFUNCTIONAL AGRICULTURE			
Teacher/teachers: Mirjana Radovanović, Dejan Supić			
Status: Compulsory, 8th semester			
ECTS: 5			
Requirement: None			
The course aims			
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.			
The course outcome			
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.			
The course content			
<i>Theory classes</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>Practice classes</i>			
Discussions and exercises on case studies			
Literature			
Adžić, S., Birovljev, J., Stojić, D., Pejanović, R., Borozan, Đ., Davidović, M. (2014). Performanse i razvojne mogućnosti agrarne industrije u AP Vojvodini: Prilog razvojnoj strategiji unapređenja agrarnog biznisa, pp 91-130; doi:10.2298/prmaiv2013091b, Poljoprivredni fakultet Novi Sad, LINK			
Đurić, K., Njegovan, Z. (2016). Ekonomika poljoprivrede, Poljoprivredni fakultet Novi Sad, ISBN 978-86-7520-384-1 LINK			
Tomić, D., (2004). Poljoprivreda i selo - ideje i inicijative, Institut za ekonomiku poljoprivrede, Beograd.			
Tomić, D. (2008). Poljoprivreda i selo - ideje i inicijative, Institut za ekonomiku poljoprivrede Beograd.			
Popović, V., Nikolić, M., Živanović-Miljković, J., Jovanović, B. (2009). Multifunkcionalna poljoprivreda i ruralni razvoj, Monografija, Institut za ekonomiku poljoprivrede Beograd.			
Multifunkcionalna poljoprivreda i ruralni razvoj, Tematski zbornici, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013 IEP Beograd			
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 ,Ashgat, 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			
Number of active teaching classes 4		Theory classes: 3	
Practice classes: 1			
Teaching methods			
Lectures, exercises, short repetitoria, discussions and presentations.			
Knowledge assessment (maximum 100 points)			
Pre-exam tasks	Points	The final exam	Points
Activity during lectures	5	Written exam	40
Practical classes	5	Oral examination	
Colloquia	2*20		
Seminars	10		

Table 5.2.A.

Study program: Organic agriculture			
Course Title: TECHNOLOGICAL ORGANIZATIONAL PRACTICE			
Teacher/teachers: Zorana Srećkov, Tanja Vujanov			
Status: Compulsory, 8th semester			
ECTS: 3			
Requirement: None			
The course aims			
The goal of subject is to improve of student's practical ability and develop organizational skills in the organic agriculture, through setting up organic garden, organizing organic farm and involving in all of working phases on the farm.			
The course outcome			
Student would be able to organize the farm according to the principle of farm integrity, establishing ecological balance and circulation of matter, biodiversity preservation and getting health safe products. It is expected to be able to identify critical points in production cycle, timely detect potential risk factors, defined, according to actual circumstances, adequate measures and procedures, and deliver creative research approach certain phenomena in the production process, which could be the basis for the continuation of education at higher levels of study.			
The course content			
<i>Theory classes</i>			
<i>Practice classes</i>			
Tillage and soil preparation for setting up of organic garden and performing other, necessary, agritechnical procedures in aim to organize it in accordance with organic agriculture. Experimental application of other methods in contemporary, sustainable agriculture (biodynamic, permaculture)			
Screening and keeping records of performed procedures and noticed plant-specific phenomena. Analysis of noticed phenomena, definition and carrying out corrective treatments. Investigation some plant phenomena in laboratory.			
Literature			
Number of active teaching classes 6		Theory classes:	Practice classes: 6
Teaching methods			
Practical instruction, combined with interactive teaching , in the field and laboratories. Students participate in current operations and keep practice diary, registering each of procedures elements and all data about performed activities.			
Knowledge assessment (maximum 100 points)			
Pre-exam tasks	Points	Final exam	Points
mastering the skill	30	practice diary presentation	40
keeping a practice diary	30	oral examination	

Table5.2.B.

Study program: Organic agriculture			
Course Title: THE FINAL WORK 1 (research work)			
Teacher/teachers: Mentor			
ECTS: 7			
Requirement: Achieved 200 ESPB			
The course aims			
The main goal of the final work 1 is to prepare students for independent professional/research and practical work in the field of organic production and obtaining quality and safe food, research and analysis of literature relevant to the choice of topic, selection of adequate research methods and mastering methods, professional research work, to be able to create a plan and phase of research, to independently determine the importance of the subject of research and define the goals and working hypotheses of research and expected results. The goal is to enable students to systematize research results and to be able to master mathematical and statistical methods for data processing in research results and their interpretation, using mathematical-statistical methods, formulating conclusions and being able to clearly present the achieved results and transfer knowledge.			
The course outcome			
After final work 1 students are able to recognize the subject (problem) of research, based on the acquired specific knowledge of subjects and professional practice during the study to recognize the degree of solution of the subject (problem) of the selected subject of research, current need for research, and importance of research for science, science and practice in a narrow and broad sense (local and global level) and especially importance for organic agriculture. Students are trained to apply analytical methods, applied and empirical methods and to use them in research planning, experimental setup, synthesis and critical review of results or existing theories and methods. At the same time, with this work, the student shows that he is able to present the matter and the most important conclusions to the professional and general public.			
The course content			
The final paper 1 - Selection of subjects (problems) of research in agreement with the teacher of the subject. Teacher's statement of acceptance of the role of mentor. Formulation of the title of the final paper. Research planning (place of research work, determining the beginning of S&R, preparation of necessary material for research, phases of work, research tasks, research goals, working hypothesis of research). Study of literature. Studying research methods. Study of data collection methods, systematization - research results (table formation). Research work according to the previously made work plan. Constant consultations with the mentor. Presents an independent, professional, written treatment of a certain topic. Introducing the mentor to the daily activities and the results obtained. Mathematical-statistical processing of obtained and systematized results. Submission of the topic of the final paper 1.			
Literature: Recommended references, relevant for the final thesis theme			
Number of active teaching classes 5		Theory classes:	Practice classes: 5
Teaching methods			
The student has consultations with the mentor and other professors, who are engaged in research and theory in the field of the topic of the final work. The mentor enables the student to master the methods for use in research, mathematical and statistical processing, etc.			
Knowledge assessment (maximum 100 points)			
Pre-exam tasks	Points	Final exam	Points
Writing a paper and using literature	10	Systematization of results	20
Work on thesis experiment	40	Analyzing and understanding results	30

Table5.2.B.

Study program: Organic agriculture			
Course Title: THE FINAL WORK 2 (drafting and defence)			
Teacher/teachers: Mentor			
ECTS: 7			
Requirement: Achieved 200 ESPB			
The course aims			
The process of preparation and defense of the final thesis aims to prepare the student for independent professional/research and practical work in the field of organic production and obtaining quality and safe food, research and analysis of literature relevant to the setting and goal of the work, and therefore the selection of appropriate methodologies, analysis of the results obtained in the paper and defining key conclusions and public presentation of their work.			
The course outcome			
With the final work, the student integrates and applies the acquired knowledge in researching current topics and solving specific problems within the educational-scientific field of the study program which the student attends. At the same time, with this work, the student shows that he is able to present the matter and the most important conclusions to the professional and general public.			
The course content			
Final paper 2 represents an independent elaboration and defense of a selected topic important within the profession. The student submits the topic on the prescribed form. After adopting the topic of the paper, the student can write a paper based on previously conducted research. Consultations regarding the topic and structure of the work (content of the necessary chapters) are performed by the student with the chosen mentor. The mentor teaches students how to write and present results using methods for research, mathematical and statistical processing, etc. Students are trained to complete the writing of the chapter within the given deadline, make additions and corrections to the final paper according to the suggestions received from the mentor and submit the paper for preliminary and final reading by the mentor. Submission of the written final paper to the appropriate service at the request of the mentor for public defense of the final paper. Adoption of the topic and scheduling of public defense by the Faculty and the University, after the written consent of the mentor. In the scheduled time, the student exercises the right of public defense in front of the members of the commission-public presentation. After defending the final thesis, the student acquires the title of "Bachelor of agricultural engineering"			
Literature: Recommended references, relevant for the final thesis theme			
Number of active teaching classes 1	Theory classes:	Practice classes: 1	
Teaching methods			
The student has consultations with a mentor for writing a paper, presenting the results, analytical and critical interpretation, deriving the results and correctly citing the used literature. In addition, students are trained to respect and harmonize the form and content of written work and legal documents of the University, with the provisions of the Statute of the University relating to the preparation of the final work (imprint, content - mandatory chapters, pages, statements and other legal determinants. Interactive communication between mentors and students about the preparation of the presentation, and cooperation in previous rehearsals for the public defense of the final paper.			
Knowledge assessment (maximum 100 points)			
Pre-exam tasks	Points	Final exam	Points
Writing thesis	20	The public presentation of candidate	20
Evaluation of final work 2 in printing form (impresum etc.) before defense	20	Answering of questions of two-member Commission	30
Preparation of the thesis presentation	10		