



*Dual Curricula - Study and Work Practice
in Agriculture and Food Safety (DualAFS)*

Curricula of Bachelor Study Program “Livestock and Animal Product Safety” Modules Catalogue

Edited by:

Myqerem Tafaj, Anila Hoda, Enkelejda Sallaku and Lumturi Papa



**ERASMUS+, KA2 – COOPERATION FOR INNOVATION & EXCHANGE OF GOOD PRACTICES
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Steering Committee of DualAFS Project:

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The modules catalogue were discussed in the meetings and workshops of the Department of Animal Sciences, Faculty Council of Faculty of Agriculture and Environment of Agricultural University of Tirana and in the meetings and workshops of the DualAFS project steering committee.

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MATHEMATICS

No.	Designation	Description
1	Title of module	Mathematics
2	Lecturer, assistant	Prof. Asoc. Dr. Marjana Nikolla
3	Study Programe	Livestock and Animal Products Safety (LAPS)
4	Academic year, Semester	1st Year I ; 1st Semester
5	Compulsory//electives	<i>compulsory</i>
6	Preliminary knowledge of students	
7	Ratio, study duration	2:2
8	ECTS	6
9	Brief description of program	<p>In the program of this module, students shall find the necessary information related to a number of problems on:</p> <p>Solution of Linear equations system with n-aquations and n-systems</p> <ul style="list-style-type: none"> N-dimensional Euclidian Space. Dependent and independent linear vectors. Matrices and Determinators, matric algebra. Classical methods Gauss and Crammer of solving linear equations system with n-aquations and n-systems <p>Elements of Calculus</p> <ul style="list-style-type: none"> Function and Limit. Numerical sequences and numerical series. Diferential computation. Integral computation. Different methods of integral computation. Definite integral. Applications of definite integral. <p>Elements of Statistics and Probability</p> <ul style="list-style-type: none"> Classic probability of events. Conditional probability. Sampling and its characteristics. Least squares methods of linear regression. Normal, Binomial, Uniform, Student, Fisher, Hi-square Distributions. Interval estimates of mean and variance. Tests of hypothesis.
10	Module Objectives and/or Basic Concepts	<p>The student should be able to:</p> <ul style="list-style-type: none"> Calculate a linear system with 3 or more equations and variables. Find when such a system has 1 solution, no solution or infinity solutions. Analyze the nature of a numerical series with infints terms. Analyze and construct a graph function. Analyze the monotony of a function. Calculate points where a function takes minimal and maximal value.

		<ul style="list-style-type: none"> • Calculate numerical value of differens surfaces and volume of axes rotating solids. • Constructs histogram of a numerical feature and calculate differents percentils for Normal Distribution. • Construct a regression line for a couple points in practice. • Calculate probability of a simple even. • Calculate mean, variance and correlation for random variables • Calculate confidential interval for mean and variance. • Manipulate with Normal and Student statistical table.
11	Teaching elements	Lectures, seminars, exercises, work in group, intermediate tests
12	Student's obligations	Course attendance 80% of lectures and practices Handling of Course assignments
13	Assessment elements	<p>a. Annual evaluation (40%)</p> <p>-Performance on the seminars, exercises, tests) 20%</p> <p>- Project work/Course assignment/ 20%</p> <p>b. Final Exam (60%)</p>
14	Literature	<ul style="list-style-type: none"> • Matematika (elemente të Algjebrës Lineare, Analizës Matematike Probabilitetit dhe Statistikës & ushtrime ,Tiranë Arben Boçari në 2012 . <p>Other teaching literature:</p> <ul style="list-style-type: none"> • Th.Mitre,O.Stringa,Sh.Shehu,B.Ruseti Matematika I ,riboitim, Tiranë 2004. • J.Malita, A.Fundo Analiza Matematike , ribotim Tiranë 2007 • Agron Tato Analiza I ,Elbasan 2005 • Geral J.Janusz Calculus ,Iowa, Melburn, Oxford 1994 • Arben Boçari Matematika (elemente të Algjebrës Lineare, Analizës Matematike Probabilitetit dhe Statistikës & ushtrime ,Tiranë 2012 • Arben Boçari Elemente të Statistikës dhe Probabilitetit bio-statistikë Rexhep Çuko Matematika I ,riboitim Tiranë, 2011

GENERAL AND INORGANIC CHEMISTRY

No.	Designation	Description
1	Title of module	General and inorganic chemistry
2	Lecturer, assistant	Dr. Ariola Devolli; Dr. Merita Stafasani
3	Study Programe	Livestock and Animal Products Safety (LAPS)
4	Academic year, Semester	1st Year I ; 1st Semester
5	Compulsory//electives	<i>compulsory</i>
6	Preliminary knowledge of students	
7	Ratio, study duration	2:1
8	ECTS	4
9	Brief description of program	<p>Through the program of the module, students will find the necessary information for a number of problems related to:</p> <ul style="list-style-type: none"> • The theory of atom structure. Fundamental Principles of quantum mechanics. Radioactivity and atomic structure. The Bohr model of the Atom. Atomic orbital. Quantum numbers. • The periodic table and periodic low. Periodicity of elements. Ionization energy, electron affinity and electro negativity • Chemical bonding. Covalent, ionic, metallic, hydrogen bonds. Polarity and polarization of bonds. Hybridization. • Gas Lows (Boyle's law; Charle & Gay Lussac's Law, Avogadro's Law. Dalton's Law Graham's Law. The equation of ideal gases). Kinetic molecular theory. Real gases • General concepts on chemical thermodynamics. Enthalpy. Hess's law. Heat of formation Entropy Free energy of Gibbs. • Chemical kinetics. The rate of reaction. The factors that influence the reaction rate. Photochemical reaction. Order and half-life reaction. Catalyst. • Chemical equilibrium. Law of mass action. Equilibrium constants. Effects of changes in Pressures, temperature and concentration on equilibrium. Homogenous and Heterogeneous equilibrium. The solubility product and calculation K_{ps}. The effect of common ion. • The classification of dispersed systems. The solubility of compounds. The concentration of solutions. Colligative properties of non-electrolytes • The isotonic coefficient of Van't Hoff. The dissociation of electrolytes. Dissociation degree and the constant of dissociation. Strong electrolytes. • Acidic and basic character of compounds. Ionic product and pH. Hydrolysis and its constant. Buffer

		<p>solution and buffer capacity.</p> <ul style="list-style-type: none"> • Oxidative- reductive reactions. Oxidation numbers. Balance equations based on oxidation numbers. • Electrochemistry. Electrolysis of aqueous solution. Galvanic element. Practical application of electrolysis and galvanic element.
10	Module Objectives and/or Basic Concepts	<p>At the end of module the student should be able:</p> <ul style="list-style-type: none"> • To give a description for basic aspects related to General and Inorganic • To interpret data collection based on the theoretical aspects • To determine physical and chemical properties from the theoretical point of view • To be able to solve problems related to chemical aspects, based on their field of interest. • To learn the students how to work independently in the laboratory
11	Teaching elements	Lectures, seminars, exercises, laboratory, work in group, intermediate tests
12	Student's obligations	Course attendance 80% of lectures and practices Handling of Course assignments
13	Assessment elements	<p>a. Annual evaluation (40%)</p> <p>-Performance on the seminars, exercises, tests) 20%</p> <p>- Project work/Course assignment/ 20%</p> <p>b. Final Exam (60%)</p>
14	Literature	<ul style="list-style-type: none"> • Kashuta V. Karajani M. Kimia e Përgjithshme dhe Inorganike. Tiranë 2011 • Kashuta V. Karajani M. Praktika dhe ushtrime të kimisë së përgjithshme dhe Inorganike. Tiranë 2009 <p>Other teaching literature:</p> <ul style="list-style-type: none"> • McMurry, Fay Topich, Prentice Hall Selected Solutions Manual for Chemistry, 2012,. • McMurry/Fay/Fredeeen/Klar, Prentice Hall Study Guide for Chemistry, 2012, • Steven D. Gammon by Darrell Ebbing General Chemistry (10th Edition), 2012 • Zumdahl, Steven S. and Susan A. Zumdahl. Chemistry. 8th Edition. California: Brooks/Cole, 2010. • Klein, Carol. Laboratory Manual for Inorganic Chemistry I. 3rd Edition. Texas: Alpha Graphics, 2010. • Thomson Learning: Belmont Lab Manual for Chem, CA, 2008 • Steven D. Gammon Darrell D. Ebbing General Chemistry Student Solutions Manual, 8th Edition, – 2005 • Ralph H. Petrucci, William S. Harwood, F. Geoffrey Herring General Chemistry: Principles and Modern Applications-Volumie 1,– 2002

		<ul style="list-style-type: none"> • Henry F, Holtzclaw, Jr. William R. Robinson, College Chemistry with qualitative analysis, 8th Edition, 1998 • Walton Paul, Beginning Group Theory for Chemistry, Oxford University Press, 1998
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PHYSICS AND METEOROLOGY

No.	Designation	Description
1	Title of module	Physics and Meteorology
2	Lecturer, assistant	Prof. Asoc. Dr. Alma Ahmeti; Gladiola Malollari
3	Study Programe	Livestock and Animal Products Safety (LAPS)
4	Academic year, Semester	1st Year I ; 1st Semester
5	Compulsory//electives	<i>compulsory</i>
6	Preliminary knowledge of students	
7	Ratio, study duration	2:2
8	ECTS	6
9	Brief description of program	<p>Physics is concerned with the study of the universe from the smallest to the largest scale, why it is the way it is and how it works. Physics is a fundamental science and a practical subject. Through the program of the module regarding physics, students will find the necessary information for a number of problems related to general physics, will gain a basic understanding of the core topics in general physics, and receive an introduction to the methods of experimental physics. Most importantly, physics (like the other sciences) is all about problem solving, so in studying physics, you can learn how to solve problems more effectively, and efficiently. Topics will include kinematics and dynamics, fluid mechanics, kinetic theory of gases and real gases, heat and thermodynamics, electricity and magnetism, optics, and nuclear physics. Weekly laboratory and exercises are designed to complement the topics covered in lecture.</p> <p>Meteorology is the study of the atmosphere, atmospheric phenomena, and atmospheric effects on our weather and climate. This module is designed to provide students with an understanding of elements, processes, and mechanisms that govern or affect the weather and climate surrounding us every day. Topics covered on the course include: the structure and characteristics of the atmosphere, solar and terrestrial radiation, the role of moisture in the development of dew, clouds, and precipitation, global circulation, weather systems and fronts, storms, elements of weather forecasting, and analysis of weather maps. Weekly laboratory are designed to complement the topics covered in lecture.</p>
10	Module Objectives and/or Basic Concepts	<p>Through the program of the module "Physics and meteorology", students will:</p> <ul style="list-style-type: none"> • gain a basic understanding of physics & meteorology principles and an appreciation of scientific methodology and scientific literacy; • provide an intellectually stimulating environment in which the students have opportunity to develop their skills and enthusiasms to the best of their potential at utilizing and processing information;

		<ul style="list-style-type: none"> • help in understanding the concepts of physics underlining the strength of equations, formulae, graphs, mathematical tools to tackle the problems and to gain the ability to apply critical and analytical reasoning, both qualitative and quantitative to the solution of a wide variety of problem solutions through a wide range of exercises; • improve the student's ability and scientific attitude to make scientific measurements, and their experimental, data analysis and calculations skills, the student's ability to write a formal scientific report through a wide range of experiments in labs, and ability to apply knowledge in practice; • provide knowledge about the importance of climate as the main parameter of the abiotic environment of the country, gain experience and ability to process meteorological and climate data, ability to analyze the weather forecast and a detailed knowledge of its resources.
11	Teaching elements	Lectures, seminars, exercises, laboratory, work in group, intermediate tests
12	Student's obligations	Course attendance 80% of lectures and practices Handling of Course assignments
13	Assessment elements	<p>a. Annual evaluation (40%)</p> <p>-Performance on the seminars, exercises, tests) 20%</p> <p>- Project work/Course assignment/ 20%</p> <p>b. Final Exam (60%)</p>
14	Literature	<ul style="list-style-type: none"> • Grazhdani, S. 2011. Fizika. • Grazhdani, S. 2010. Punë Praktike në Fizikë-Meteorologji. • Grazhdani, S. 2004. Ushtrime në Fizikë <p>Other teaching literature</p> <ul style="list-style-type: none"> • Grazhdani, S. 2009. Fizika. • Giancoli, C. D. 2004. Physics: Principles with Applications

GENERAL BOTANY

No.	Designation	Description
1	Title of module	General botany
2	Lecturer, assistant	Prof. Dr. Lirika Kupe
3	Study Programe	Livestock and Animal Products Safety (LAPS)
4	Academic year, Semester	1st Year I ; 1st Semester
5	Compulsory//electives	<i>compulsory</i>
6	Preliminary knowledge of students	
7	Ratio, study duration	2:1
8	ECTS	4
9	Brief description of program	Through these module, the students will find the necessary information for a number of issues related to the object and branches of the botany science such as The construction and origin of cell organs; The life cycle of the plant cell; Cell division, cell wall structure; Classification of plant tissues based on origin, morphological structure and function; Different characteristics of tissues; Root system, morphology and root anatomy; The lumps and the micoris; Macro morphological elements of the stalk: buds (classification and structure), stalk structures and denomination types, philotaxis; The anatomical structures of the monocotyledon, dicotyledonous (herb and grain) stem; Secondary formations of gymnosperms and angiosperms; Ontogenesis and leaf classification based on morphology, anatomical structure and functional types; Plant reproduction (vegetative, sexual and asexual); The morphological and structural aspects of the flower; The anatomy of its components; Reproduction cycles in flowering plants; Microsporogenesis, megasporogenesis; Pollination and plague in angiosperms and gymnosperms; Fruit and seed; Their species, morphology and anatomy.
10	Module Objectives and/or Basic Concepts	<p>Objectives:</p> <p>Through the General Botany module, students will gain the skills and information related to:</p> <ul style="list-style-type: none"> • Good theoretical and practical knowledge in the anatomo-morphological aspects of the plant cell; as the basic unit of construction, function and transmission of traits from one generation to another, tissues and their functions. • The use of the necessary knowledge for plant reproduction in agriculture, for the production of high-quality and low-cost staples. • Application of methodology in the field of agricultural and environmental Botany. • Promote student learning and stimulate their interest for advanced knowledge related to the cultivated and

		<p>spontaneous plants.</p> <ul style="list-style-type: none"> • All these knowledge will be a good basis for further performance towards the biological aspects of plants of economic and environmental interest, and of practical and strict scientific activities in the field of integrated, multifunctional and sustainable management of agriculture and the environment <p>Basic concepts</p> <ul style="list-style-type: none"> • Cytology • Histology • Organography • Root • The stalk • Leaf • Flower • Fruit • Seeds
11	Teaching elements	Lectures, seminars, exercises, laboratory, work in group, intermediate tests
12	Student's obligations	Course attendance 80% of lectures and practices Handling of Course assignments
13	Assessment elements	<p>a. Annual evaluation (40%)</p> <p>-Performance on the seminars, exercises, tests) 20%</p> <p>- Project work/Course assignment/ 20%</p> <p>b. Final Exam (60%)</p>
14	Literature	<ul style="list-style-type: none"> • Kupe L., Ruci S., (2017). Botanika e pergjithshme."MORAVA". ISBN: 978-9928-16923-5, Tiranë. <p>Other teaching literature:</p> <ul style="list-style-type: none"> • Kalajnxhiu A., Kupe L., (2011). Botanika e Pergjithshme (Pjesa e pare) • Kupe L., Kalajnxhiu A., (2011). Botanika e Pergjithshme (Pjesa e dyte) • Miho A, Topuzi L, Marka J., (2007). Botanika e Pergjithshme, FSHN, Tirane. • Topuzi L.,2005. Praktikumi i Botanikës se Pergjithshme. • Capon B.(2005).Botany for Gardeners,Cambridge CB4 5QJ, U.K. ISBN 0-88192-655-8 (pbk.) -- ISBN 0-88192-655-8. • Alfred W. Bennett, (2011). General Morphology, Cambridge University Press. Online publication 2012. • Clark C. (2003). Plant Morphology; Laboratory and study guide, Version 6.0.

BIOLOGY AND MICROBIOLOGY

No.	Designation	Description
1	Title of module	Biology and microbiology
2	Lecturer, assistant	Dr. Enkeleda Berberi; Dr. Sonila Cocoli
3	Study Programe	Livestock and Animal Products Safety (LAPS)
4	Academic year, Semester	1st Year I ; 1st Semester
5	Compulsory//electives	<i>compulsory</i>
6	Preliminary knowledge of students	
7	Ratio, study duration	3:3
8	ECTS	7
9	Brief description of program	<p>Through the part of “Biology” of this module, students will find the necessary information for a number of problems related to:</p> <ul style="list-style-type: none"> • Biology as science and introduction to Biology. Modern concepts of the definition of life and its features. Differences between plant and animal cells. Ultra structure of internal • cell organization. The cell membrane, the cell membranes structure, molecular and cellular aspects of transport. The role of the cell membrane functions of living organisms. • Bio-energy. Enzymes and factors affecting their activity. The exchange of substances and energy in the cellular level. Respiration and photosynthesis as the essential aspects of the matter and energy exchanges to living organisms. • The exchange of substances and energy in the cell. Cellular respiration, relevance and energy aspects of cellular respiration. The importance of the breakdown processes in the food industry and agriculture. • Various aspects of photosynthesis and related to. Various forms of carbon fixation correlated with different types of plant. Carbon sequestration issues and the importance of scientific understanding. • Organization of internal space of cell and the cell nucleus. What are the causes of the emergence of nuclear membrane? The chemical composition and organization of the cell nucleus. Chromosome complex and understanding of the importance of the cell nucleus. • Nucleic acids in living cells. DNA molecular construction. RNA and DNA and molecular structure, aspects of replication, transcription and translation. • Protein Biosynthesis. Understanding the importance of applied science in agricultural sciences and food. Reproductive human cloning and medical therapeutic cloning.

		<ul style="list-style-type: none"> • Systematic Zoology and systems and the study of the living world. The basic principles of the functioning of animal organisms. The principal forms of living beings; Single-celled, Sponges and flat worms. Reports of lower phylo-genetically groups of living things and the importance of understanding the evolutionary profiles. Flat worms. The importance of parasitism and parasitic life forms of domesticated animals. • Round worms and practical significance of the study in the agricultural sciences. Differentiation, protostomates and deuterostomates. Phylogenetical aspects. Arthropods and phylogeny. Understanding of the report and blooming arthropods and evolution of the living world as a whole. Elements of comparative anatomy and evolution of world problems living groups before vertebrates. • Shellfish and important economic forms of aquatic life. The aspects of the evolution of living things and Cambrian explosions. • Vertebrates and processes (ways) evolutionary transition to vertebrates. Ecological and zoogeography. Phylogenetical relations between different groups of vertebrates; Aspects of the environment, applied ecology and global climate change. <p>The main focus related to the part of “microbiology”</p> <ul style="list-style-type: none"> • One of the fundamental factors in the zoo technical production and aquaculture development, from the animal health point of view, is the recognition main infectious and parasite pathologies present in an area. This recognition is essential because these pathologies are responsible for mortality and animal production, but they also intervene in terms of restricting the export of animals and that of animal origin products. • The development of professional and technical capacity of the zoo-veterinary sector is related to: • Knowledge of laboratory techniques for the diagnosis of infectious and parasitic diseases in farm animals; • Training in veterinary epidemiology; • Knowledge of the information system for collecting data and conducting analysis for the control of parasitic infectious diseases in animals and agriculture; • Establishment of the main points in the field of prophylaxis, control and eradication of infectious and parasitic diseases. • The part "Microbiology" studies the microorganisms associated to infectious diseases of animals and humans. There are a large number of organisms that live in water, soil and in decaying substances. Most of them are unable to cause disease in animals, and only few of them have the ability to be grown and
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		<p>multiplied in the tissues of animals. However, only some of them cause diseases, in those cases where the host defense mechanisms will be damaged.</p> <ul style="list-style-type: none"> • Microbiology is a new biological science. The development of the lens, the microscope, the staining techniques and those cultural, enabled the scientists for a short time to study the structure of organisms and conditions of their existence, and edit methods for the utilization of microbes in fighting of harmful microbes. • Microbiology studies such as useful microorganisms and the ways of their activity usage as well as harmful ones and the way they control their activity. Group of organisms that is associated with disease, infection with animal health is the object of study of this science. • The aim is to develop a conceptual framework, establishing connections between these disciplines, through discussion of infective agents leading as biological models as well as through the introduction of roads where the main systems of the body react to them
10	Module Objectives and/or Basic Concepts	<p>Through the program of the module "Biology", students will gain necessary information and skills:</p> <ul style="list-style-type: none"> • To contribute to the overall education of students through their involvement in scientific research processes and research, learning and understanding of the biological culture. • Encourage students to agriculture and food branches towards a scientific approach, through curiosity and involvement by: • Individual study and personal initiative; • Working Group • In the auditor oriented work • Develop an understanding of the facts and principles of biology. To strengthen students' interest in the development of estimates related to the nature of the living and of biodiversity. • Aims at creating an awareness of biological knowledge in the application of modern society in personal, social, economic, environmental, industrial, agricultural, medical, solid waste and wastewater management and other technological contexts. • To develop in students the ability to realize various estimates in relation to contemporary issues in the field of biology, and research various trends. • Through the program of the module, students will find the necessary information for a number of problems related to: <p>This part "Microbiology", aims to provide the students with the necessary information and regarding skills:</p> <ul style="list-style-type: none"> • Establishing the biological groups of microorganisms and their place in the systematic world of living,

		<p>common features of biological systems.</p> <ul style="list-style-type: none"> • Recognition of the morphology, structure and function of the bacterial cell and its organization, chemical and physical needs for the growth of microorganisms. Cellular metabolism, energy production and the growth and multiplication of bacteria. • Knowledge of molecular genetics and genetic variations in bacteria, genetic recombination mechanisms for the emergence of genetic variations in bacteria. • Impact of physical agents, chemical and biological control and activity of microorganisms. General notions on chemotherapy and evaluate antimicrobial susceptibility. • Student will recognize microorganisms in biological balance and their role as pathogens. • Students in the laboratory part of the course of microbiology tends to enable practical skills of his towards the use of different techniques of dyeing, knowing the morphological species bacterial interest veterinary techniques to identify macroscopic and microscopic some infectious agents and determining susceptibility to antimicrobial preparations.
11	Teaching elements	Lectures, seminars, exercises, laboratory, work in group, intermediate tests
12	Student's obligations	Course attendance 80% of lectures and practices Handling of Course assignments
13	Assessment elements	<p>a. Annual evaluation (40%)</p> <p>-Performance on the seminars, exercises, tests) 20%</p> <p>- Project work/Course assignment/ 20%</p> <p>b. Final Exam (60%)</p>
14	Literature	<ul style="list-style-type: none"> • Biologjia e pergjithshme (Shumka, S dhe Fejzaj, A) • Manuali i Praktikave dhe Seminareve ne Biologji (Shumka, S dhe Fejzaj, A.Nikleka, E dhe Berberi, E) • Mikrobiologjia. Tekstmësitor. Kapidani M., Mamoci E. 2017 Praktikumi i Mikrobiologjise Bujqësore. Kapidani M. 200 <p>i. Supplementary Literature</p> <ul style="list-style-type: none"> • Biology of Microorganisms. Madigan M.T., Martinko J.M., Stahl D.A. and Clark D.P. 13th ed. 2012. • Molecular Cell Biology. Lodich, I. Fifth edition 2013 Pensilvania. P.961 • Zoologjia e pergjithshme (Shumka, 2008) • Zoology (Ramad, 1998) • Praktikumi i Zoologjisë Parruazore dhe Ruazore (Gjijnuri dhe Bego, 1996 dhe 2006), etj. • Praktikumi i biologjisë - UBT (Papajani, 1990) • Arms, K and Camp, P S (2006): Biology (Fifth Edition) (Harcourt Brace College Publishers) ISBN 0030154340

		<ul style="list-style-type: none"> • Burnet, L (1988): Exercises in Applied Genetics (CUP) ISBN 0521338832 • Boyle, M and Senior, K (2008): Biology (Third Edition) Collins Advanced Science (Collins Educational) ISBN 0007267452 • Calladine, C R, Dreë, H R, Luisi, B F and Travers, A A (2004): Understanding DNA (Third Edition) (Academic Press) ISBN 0121550893 • Campbell, N A and Reece, J B (2007): Biology (Eighth Edition) (Pearson) ISBN 0321536169 • Campbell, N A, Reece, J B, Taylor, M R and Simon, E J (2005): Biology: Concepts and Connections (Fifth Edition) (Benjamin Cummings) ISBN 0805371605 • Clegg, C J & MacKean, D J (2000): Advanced Biology, Principles and Applications (Second Edition) (Hodder Education) ISBN 0719576709 Drlica, K (2003). Understanding DNA and Gene Cloning: A Guide for the Curious (Fourth Edition) (Wiley and Sons) ISBN 0471451630 • Gregory, J (2000): Applications of Genetics (Second Edition) Cambridge Advanced Sciences (CUP) ISBN 0521787254 • Hogan, K and Palladino, M A (2008): Stem Cells and Cloning (Second Edition) (Benjamin Cummings) ISBN 0321590023 • Jones, M, Fosbery, R and Taylor, D (2000): Biology 1 Cambridge Advanced Sciences (CUP) ISBN 052178719X • Kreuzer, H and Massey, A (2001): Recombinant DNA and Biotechnology: A Guide for Students (Second Edition) (American Society for Microbiology) ISBN 1555811760 9648 H2 BIOLOGY (2016) • Kreuzer, H and Massey, A (2008). Molecular Biology and Biotechnology: A Guide For Teachers (Third Edition) (American Society for Microbiology) ISBN 1555814719 • Mader, S S (2006): Biology (Ninth Edition) (McGraw-Hill) ISBN 0073301132 • Roberts, M B V, Reiss, M and Monger, G (2000): Advanced Biology (Nelson Thornes) ISBN 0174387326 • Smith, J E (2009): Biotechnology (Studies in Biology) (Fifth Edition) (CUP) ISBN 0521711932 • Taylor, D J, Green, N P O, Stout, G W and Soper, R (1997): Biological Science 1 and 2 (Third Edition) (CUP) ISBN 0521561787
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FOREIGN LANGUAGE (ENGLISH)

No.	Designation	Description
1	Title of module	Foreign language (English)
2	Lecturer, assistant	Dr. Esmeralda Sotiri
3	Study Programme	Livestock and Animal Products Safety (LAPS)
4	Academic year, Semester	1st Year I ; 1st + 2nd Semester
5	Compulsory//electives	<i>compulsory</i>
6	Preliminary knowledge of students	
7	Ratio, study duration	0:2
8	ECTS	4
9	Brief description of program	<p>The program of this module offers to the students a new approach to learning English: ESP. (English for Specific Purposes). This approach focuses on the student and the specific needs he has or may have in the future. Terminology learning aims to meet specific needs, so it focuses on language appropriate to those fields or subfields. This module aims to achieve:</p> <ul style="list-style-type: none"> • Teaching/learning English for specific educational and professional purposes. • To learn absolute traits versus variable traits according to Maslow's pyramid. • Meet the standards according to the Common European Framework of Reference for Languages: B2. • To introduce students to Terminology in the field of animal production. • To learn the three main skills: reading, speaking, writing. <p>The objectives of the course include improving the basic skills that the student has: reading, speaking, writing; acquisition of grammatical and lexical categories through reading and analyzing technical-scientific texts. The student will focus on grammar and highlight the grammatical structures within scientific texts by researching in detail the basic grammatical structures, such as: singular - plural, terms from Greek or Latin, verb tenses, diathesis passive, sentences with subordinate conditional parts, prepositions, phrasal verbs, indirect speech, etc. The student will be able to combine communication with technical-scientific terms in everyday situations, research scientific texts in detail and deal with analysis according to morphological aspects, focusing on word formation, as well as accurately translate terms and texts from the source in the required language.</p>
10	Module Objectives	<i>Basic concepts</i>

	and/or Basic Concepts	<ul style="list-style-type: none"> • Cells and tissues • Anatomy • Animals, their habitats and their origin • Animal body systems • Proteins and Carbohydrates • Genetic code and Cloning • Gut health, Poultry, Pet foods • Food safety
11	Teaching elements	Seminars, work in group, intermediate tests
12	Student's obligations	Course attendance 80% of lectures and practices Handling of Course assignments
13	Assessment elements	<p>a. Annual evaluation (40%)</p> <p>-Performance on the seminars, exercises, tests) 20%</p> <p>- Project work/Course assignment/ 20%</p> <p>b. Final Exam (60%)</p>
14	Literature	

SYSTEMATIC BOTANY

No.	Designation	Description
1	Title of module	Systematic Botany
2	Lecturer, assistant	Prof. Asoc. Dr. Alma Imeraj; Dr. Marsela Alikaj
3	Study Programe	Livestock and Animal Products Safety (LAPS)
4	Academic year, Semester	1st Year I ; 2nd Semester
5	Compulsory//electives	<i>compulsory</i>
6	Preliminary knowledge of students	
7	Ratio, study duration	2:1
8	ECTS	4
9	Brief description of program	<p>This course is designed to present the current principles and practices of plant systematic. The main goals of this course are to introduce students to several topics in plants evolution and systematic and to survey the diversity of vascular plant families found in Albania. To be able to identify or use appropriate tools to identify the vascular plants of the commune flora.</p> <p>Theoretical course</p> <ul style="list-style-type: none"> • Main Taxas and plants classification system. • Low plants, Thalophytes, Bacteria, Algae, Fungy, Lichene, Bryophytes, Pteridophytes. • Spermatophytes, Non flowering vascular plants (Gymnosperms), Survey of angiosperm families, diversity of dicotes and monocotes • Weeds with major economic impacts on Agriculture in Albania. Geobotanica and its elements, plants associations and practical applications. <p>Practical course</p> <ul style="list-style-type: none"> • Thallophytes, bacteria observations, algae, fungi, Bryophyte, pteridophytes • Gymnosperms, Angiosperms. Dicots and Monocots classes
10	Module Objectives and/or Basic Concepts	<p>At the end of module the student should be able:</p> <ul style="list-style-type: none"> • To give a description for basic aspects related to General and Inorganic • To interpret data collection based on the theoretical aspects • To determine physical and chemical properties from the theoretical point of view • To be able to solve problems related to chemical aspects, based on their field of interest. • To learn the students how to work independently in the laboratory
11	Teaching elements	Lectures, seminars, exercises, laboratory, work in group, intermediate tests

12	Student's obligations	Course attendance 80% of lectures and practices Handling of Course assignments
13	Assessment elements	<p>a. Annual evaluation (40%)</p> <p>-Performance on the seminars, exercises, tests) 20%</p> <p>- Project work/Course assignment/ 20%</p> <p>b. Final Exam (60%)</p>
14	Literature	<ul style="list-style-type: none"> Alma Imeri, (2018). Botanika Sistematike, shtypshkronja „Morava“, ISBN:978-9928-208-49-1. <p>ii. Other teaching literature:</p> <ul style="list-style-type: none"> Hasko A, Imeri A, Shehu J. (2008). Botanika Sistematike Murat Xhulaj, Lefter Kashta, Babi Ruci, (2006).“Botanika, Sistematika e Bimëve” Spichiger R-E et. al., (2004). Systematic botany of flowering plants, 2nd, edn. Leonard Topuzi, Fatbardh Sokoli (2002). “Botanika e përgjithëshme” Michael G. Simpson, (1998). Plant Systematic, ISBN: -13:978-0123743800. Paparisto K, Demiri M, Mitrushi I & Qosja Xh. (1988). Flora e Shqipërisë, Vol: 1,2,3,4. Tiranë, Xh.Qosja, (1982). Botanika. Sistematika e Kriptogameve. Xh.Qosja, (1982). Botanika. Sistematika e Fanerogameve.

ORGANIC CHEMISTRY

No.	Designation	Description
1	Title of module	Organic chemistry
2	Lecturer, assistant	Dr. Artiona Laze
3	Study Programe	Livestock and Animal Products Safety (LAPS)
4	Academic year, Semester	1st Year I ; 2nd Semester
5	Compulsory//electives	<i>compulsory</i>
6	Preliminary knowledge of students	
7	Ratio, study duration	2:1
8	ECTS	4
9	Brief description of program	<p>Module includes a new material of wide literature, actual and according to module program for Tirana Agricultural University Students. Organic chemistry is primarily devoted to the unique properties of the carbon atom and its compounds. These compounds play a critical role in biology and ecology, Earth sciences and geology, physics, industry, medicine and - of course - chemistry. The modul includes important information about:</p> <ul style="list-style-type: none"> • Structure and Bonds, Chemical Bonding Theories. • Polar Covalent Bonds; Acids and Bases. • Organic Compounds: Alkanes and Their Stereochemistry, Cycloalkanes and their Stereochemistry • Alkenes: Structure and Reactivity, Reactions and Synthesis; Dienes • Alkynes and their Organic Synthesis • Organohalides: Reactions of Alkyl Halides, Nucleophilic Substitutions and Eliminations • Alcohols and Phenols; Reactions and Synthesis; Acidity of Phenols; Ethers and Epoxides; Thiols and Sulfides; Reactions and Synthesis • Aldehydes and Ketones: Reactions and Synthesis; Nucleophilic Addition Reactions • Carboxylic Acids and Nitriles; Reactions and Synthesis; • Carboxylic Acid Derivatives: Nucleophilic Substitution Reactions; Esteres and Lipids • Benzene and Aromaticity, Reaction of Electrophylic Substitutions • Carbohydrates: Monsaccharides and their reactions, Disaccharides and Polysaccharides • Aliphatic and Aromatic Amines; Physical Properties; Reactions and Synthesis; Basicity of amines • Biomolecules: Amino Acids, Peptides, and Proteins. • Biomolecules: Nucleic Acids. • The Organic Chemistry of Metabolic Pathways. <p>This module also includes exercises and problems, to create</p>

		students the possibility of using in practice everything they have learned, and to give them the possibility to develop necessary abilities toward a successful carrier.
10	Module Objectives and/or Basic Concepts	<p>Through the program of the module "Organic Chemistry", students will gain necessary information and skills:</p> <ul style="list-style-type: none"> • About synthesis and main mechanisms of organic reactions and about properties of organic compounds. • About the big role that organic chemistry has in everyday life. • About chemical structure of organic compounds, functional groups and about isolation and purification of organic compounds. • Students will learn basic information necessary for Organic Chemistry theory and practice, that is an essential module for student formation and for many other professional disciplines of Agricultural Faculty, Veterinary Medicine Faculty, Forestry Science Faculty and Biotechnology and Food Faculty, in order to raise their abilities in understanding chemical principles and make them part of their basic formation. • Agricultural University students, will gain the necessary information, adapted and actual, for this discipline, with the main aim to acquires much better other disciplines of specialty like genetics, biochemistry of plants and animals, microbiology, plants and animals physiology and other modules like pharmacology, biology, food technology, environment and plant protection, etc.
11	Teaching elements	Lectures, seminars, exercises, laboratory, work in group, intermediate tests
12	Student's obligations	Course attendance 80% of lectures and practices Handling of Course assignments
13	Assessment elements	<p>a. Annual evaluation (40%)</p> <p>-Performance on the seminars, exercises, tests) 20%</p> <p>- Project work/Course assignment/ 20%</p> <p>b. Final Exam (60%)</p>
14	Literature	<ul style="list-style-type: none"> • Kimia Organike me autor : Valentina ARAPI , Shpresa ÇELA. i. Other teaching literature: • K. Peter, C. Vollhardt, Neil.E. Schore - organic chemistry. • Robert T. Morrison et.al – organic chemistry, 6th edition. • John Me Murry- organic chemistry. • T.W. Graham Solomons- organic chemistry (fifth edition),etj •

APPLIED INFORMATICS

No.	Designation	Description
1	Title of module	Applied Informatics
2	Lecturer, assistant	Dr. Blerina Zana
3	Study Programme	Livestock and Animal Products Safety (LAPS)
4	Academic year, Semester	1st Year I ; 2nd Semester
5	Compulsory//electives	<i>compulsory</i>
6	Preliminary knowledge of students	
7	Ratio, study duration	1:2
8	ECTS	4
9	Brief description of program	<p>Through the program of the module, students will find the necessary information for a number of problems related to:</p> <ul style="list-style-type: none"> • What is a database? Which are its main components? • How can you build databases in Microsoft Office Access? How can you put restrictions? • What is a form? Why is it used? How can it be changed? • What is a query? How to create different queries? • What is a relationship between tables? What is a relationship one to many? What about many to many? • What is a cell in Microsoft Office Excel? Which are the kinds of references of cells in Microsoft Office Excel? • Which are the statistical, financial, logical functions in Excel? • How can a student create a financial project in Excel? • How can a student create a database and use sort and filter in Excel? • How can a student solve a problem of linear programming?
10	Module Objectives and/or Basic Concepts	<p>Through the program of the module "applied informatics", students will gain necessary information and skills:</p> <ul style="list-style-type: none"> • To gain the main concepts and base principle components of databases in Microsoft Office Access and Excel; • To create tables and records in Microsoft Office Access; • To create different relationships between tables in Microsoft Office Access; To create forms and modify it in Microsoft Office Access; • To create different queries with different criteria in Microsoft Office Access; To create Reports in Microsoft Office Access; • To distinguish the references of cells in Microsoft Excel; To create databases in Microsoft Excel;

		<ul style="list-style-type: none"> • To use sort and filter functions of Microsoft Excel; • To use statistical, logical and financial functions of Microsoft Excel; To create financial project in Microsoft Excel; • To solve different problems of linear programming in Microsoft Excel • This module also includes exercises and problems, to create students the possibility of using in practice everything they have learned, and to give them the possibility to develop necessary abilities toward a successful carrier.
11	Teaching elements	Lectures, seminars, exercises, work in group, intermediate tests
12	Student's obligations	Course attendance 80% of lectures and practices Handling of Course assignments
13	Assessment elements	<p>a. Annual evaluation (40%)</p> <p>-Performance on the seminars, exercises, tests) 20%</p> <p>- Project work/Course assignment/ 20%</p> <p>b. Final Exam (60%)</p>
14	Literature	<ul style="list-style-type: none"> • Papakroni H., Sistemet e Administrimit Database dhe Analiza e Informacionit, Erik 2006 <p>Other teaching literature:</p> <ul style="list-style-type: none"> • Robert T. Grauer, Maryann Barber, Microsoft Office 2000, Professional, Volume(I+II), Prentice Hall, 1999 • Gerald V.Post, Database management Systems Designing and Bulding Business Applications, McGraw-Hill 2000 • Papakroni H., Programe Përdorimi Kompjuteri (1), Pegi 2002 • Papakroni H., Programe Përdorimi Kompjuteri (2), Pegi 2002 • S.Christian Albright, VBA for Modelers: Developing Decision Support Systems with Microsoft Excel, Brooks/Cole 2007

BASIC OF ECONOMY

No.	Designation	Description
1	Title of module	Basic of Economy
2	Lecturer, assistant	Prof. Asoc. Dr. Mimoza Koka
3	Study Programe	Livestock and Animal Products Safety (LAPS)
4	Academic year, Semester	1st Year I ; 2nd Semester
5	Compulsory//electives	<i>compulsory</i>
6	Preliminary knowledge of students	
7	Ratio, study duration	2:1
8	ECTS	4
9	Brief description of program	<p>Through this course the students will be able to:</p> <ul style="list-style-type: none"> • Understand what the economy science is, the content, purpose and the object of its study • To be aware about the law of rarity and the problems that arises from it. • To recognize some basic concepts on the law of the decreasing income, economic efficacy, the opportune cost, in order to explain the reasons why production performance requires an economy that produce at the limit of production opportunities and not inside or outside it. • To understand how consumer choices are subject to the principles of rational choice • To understand that individual demand represents individual choices regarding the consumption of the individual • To understand the important role of demand and supply as means of economic phenomena analysis in a market economy. • To recognize what role that the pricing mechanism plays, in the distribution of production resources, as a mechanism of facing between demand and supply for goods and services that come to market. • To understand the importance of the market as a concept. • To distinguish between a free market and the price-controlled market. • To understand how demand and supply for agricultural products interact until a balance price is achieved. • To describe the main factors that influence the demand and supply and the factors that shifts the demand and supply curve. • To recognize the impact that the price of a good has on the required amount of it, in order that the economic decisions to be made in accordance with the

		<p>objectives</p> <ul style="list-style-type: none"> • To develop the point of view related to the consumption and savings within aggregate demand. • To be aware for the role of state policies. • To analyze and account indicators such as: Welfare Indicators, Gross Domestic Product, Economic Growth and Business Cycles with the aim of giving macroeconomic understanding of the economy's action as a whole • To define the goals of macroeconomic policies and instruments of their realization. • To have a good basis for information on the role and functions of money. • To recognize the two-tier banking system, the role of the Central Bank and the importance it has for the economy the effective implementation of monetary policy. • To know inflation as well as to know how to measure it. • To know the unemployment and work, and to distinguish between two kinds of unemployment.
10	Module Objectives and/or Basic Concepts	<p>BASIC CONCEPTS</p> <p>MICROECONOMY</p> <ul style="list-style-type: none"> • Economics and Economic Reasoning. • Economic organization of the Society. • Demand and Offer. • Use of Demand and Offer. • Demand, Offer and Resilience. • Taxes and Government Intervention. • Logic of Individual Choices. • Production and Cost Analysis. • Perfect competition • Monopolies. <p>Macroeconomics</p> <ul style="list-style-type: none"> • Measuring the Value of Economic Activity. • Aggregate demand, aggregate supply and macroeconomic balance. • Money and Banks. • Understanding inflation and the causes of Inflation. • The meaning of unemployment. Demand and aggregate offer for work.
11	Teaching elements	Lectures, seminars, exercises, work in group, intermediate tests
12	Student's obligations	Course attendance 80% of lectures and practices Handling of Course assignments
13	Assessment elements	<p>a. Annual evaluation (40%)</p> <ul style="list-style-type: none"> -Performance on the seminars, exercises, tests) 20% - Project work/Course assignment/ 20%

		b. Final Exam (60%)
14	Literature	<ul style="list-style-type: none"> • I.Tabaku,M.Koka, E.Pazaj, E.Nesturi (2017). Bazat e Ekonomisë. Per fakultet jo Ekonomikë. (Bachelor) • Begg, Fisher & Dornbusch (2004). Economics. 6th ed. • Hey, J. (2003) Microeconomics. McGraw-Hill 7 • Olivier, B. (2006) Macroeconomia. Il Mulino • Mankiw, G. (2005) Principles of Economics. Pricenton.Inc • Blink & Dorton (2007) Economics. Oxford Un. Press • Mancellari, Haderi, Kule & Qirici (2002) Hyrje ne Ekonomi. • Çakalli, M. (2011) Bazat e Ekonomise (per fakult. Jo-Ekonomike) • Koka, M. Makroekonomia. • Rudiger Donbrusch & Stanley Fischer (2003) Macroeconomics

BASICS OF PLANT PRODUCTION

No.	Designation	Description
1	Title of module	Basics of Plant Production
2	Lecturer, assistant	Prof. Dr. Ilir Kristo
3	Study Programe	Livestock and Animal Products Safety (LAPS)
4	Academic year, Semester	1st Year I ; 2nd Semester
5	Compulsory//electives	<i>compulsory</i>
6	Preliminary knowledge of students	
7	Ratio, study duration	2:1
8	ECTS	5
9	Brief description of program	<p>Plant production is a resultant of the interaction of natural factors such as soil and climate with plants. The process of plant production is very complex and the harmonization of natural factors with plant requirements constitutes an activity that requires deep knowledge in the fields of biology, chemistry and physics. On the other hand, the production of cultivated plants should never be seen as disconnected from important environmental aspects such as the protection of land and water resources or food security.</p> <p>The purpose of this module is to give students of the Faculty of Agriculture and Environment a basic level of knowledge necessary to know the general principles and basic factors of crop production.</p>
10	Module Objectives and/or Basic Concepts	<p>The learning objectives in this module are:</p> <ul style="list-style-type: none"> • Discussion of the main concepts and principles on the basis of which plant production is carried out under the human control. • Natural factors of plant production (plants, soil, climate), interactions between them as well as the impact of human on these factors for obtaining useful plant products for humans and animals livestock. • Discussion of environmental factors of plant production such as soil factors, biotic factors, hydrological factors. • Knowledge acquisition related to the main land qualities that influence the Earth-Plant relationship (physical qualities - water, chemical and biological qualities of the soil). • Knowledge acquisition related the main climatic and plant indicators that influence the Earth - Climate – Plants relations • Knowledge acquisition related the main agronomic techniques that optimize environmental factors in relation to cultivated plants • The students should be able to prepare a standard

		<p>technology of plant production applying the most general principles that enable successful cultivation of plants: obtaining high quality yields, high economic effectiveness and conservation of natural resources of production.</p> <ul style="list-style-type: none"> • The students should create a logical structure for the subject which will help in the second and third year of their studies for the logical systematization of all knowledge that the student will obtain during the course <p>Basic concepts</p> <ul style="list-style-type: none"> • Natural Ecosystem vs. Agroecosystems, • Environmental factors conditioning plant production • Multifunctional assessment of soil in crop production. • Multifunctional assessment of climate in crop production. • Multifunctional evaluation of the plant in crop production. • Harmonization and maximization of the Earth - Climate - Plant interaction
11	Teaching elements	Lectures, seminars, exercises, laboratory, work in group, intermediate tests
12	Student's obligations	Course attendance 80% of lectures and practices Handling of Course assignments
13	Assessment elements	<p>a. Annual evaluation (40%)</p> <p>-Performance on the seminars, exercises, tests) 20%</p> <p>- Project work/Course assignment/ 20%</p> <p>b. Final Exam (60%)</p>
14	Literature	<ul style="list-style-type: none"> • Kristo. I, Sallaku. F., 2010 Bazat e Prodhimit Bimor. UBT. Tirane • Harizaj, P. 2009. Agronomia e Përgjithshme – Parime të Prodhimit Bimor\ • Kristo. I, Sallaku. F., 2010. Bazat e Prodhimit Bimor– Ushtrime & Detyra, UBT, Tirane. • Harizaj, P. Praktika me ushtrime <p>Other teaching literature:</p> <ul style="list-style-type: none"> • Agronomia Generale.2005. Bonciarelli, F. & Bonciarelli, U., Universita di Perugia. • Agronomia Generale, Aziendale e Ambientale. 2004. Giardini, L. Universita di Bologna. • Principles of Crop Production, Theory, Techniques, and Technology. 2005. Acquaah, G.; Pearson Prentice Hall. • Principles of Crop Production. 2006. Martin, J.H.; Richard P; Stamp, D.L.

BASIC ON ANIMAL PRODUCTION

No.	Designation	Description
1	Title of module	Basic on Animal Production
2	Lecturer, assistant	Prof. Assoc. Dr. Petrit Dobi
3	Study Programe	Livestock and Animal Products Safety (LAPS)
4	Academic year, Semester	1st Year I ; 2nd Semester
5	Compulsory//electives	<i>compulsory</i>
6	Preliminary knowledge of students	
7	Ratio, study duration	2:1
8	ECTS	5
9	Brief description of program	<p>The module aims give to students full and stable knowledge's about:</p> <ul style="list-style-type: none"> • Livestock production and its role in the cycle of food production for the population. • Food, manner and feeding systems for an efficient use of their livestock to the product. • Animal's growth as meat production process. • Meat as animal product and feedstock. Anatomical and physiological features of animals for meat production. The carcass and its composition. • Sea products, their role as a source of protein in feeding of the population • Milk as raw material for the processing industry. • Egg, its composition. nutritional values • This module aims to give students a comprehensive and lasting about livestock production and its role in the cycle of food production for the population. • Food, way of feeding and its systems for an effective use of the product until their livestock. Raising animals as meat production process. Meat as animal product and as feedstock. Anatomical and physiological features of animals for meat production. • The carcass and its composition. Seafood, their role as a source of protein in feeding the population. Milk as raw material for the processing industry. Egg, its composition. Nutritional values. <p>In the program are also included information about:</p> <ul style="list-style-type: none"> • Species and specialized breeds about meat and milk production. Anatomical and physiological features • Food, feeding and utilization of nutrients in function of their efficient use in animal product. • Report energy / protein precondition to ensure raw materials with requirements and product processing technologies.

		<ul style="list-style-type: none"> • Biological features and construction features of the animal body. • The growth process and its features at different ages. The structure of the casing and the factors affecting it. • Milk, its composition and its features in different species. Factors that affect the quantity and the quality. • Sea products and their role as a source of protein
10	Module Objectives and/or Basic Concepts	<p>This course is intended to give students:</p> <ul style="list-style-type: none"> • an overview and appreciation of the factors which affect animal production: • and the management practices used to minimize the adverse effects of these factors; • knowledge of genetic improvement techniques, feeding and breeding of various categories according to species.
11	Teaching elements	Lectures, seminars, exercises, laboratory, work in group, intermediate tests
12	Student's obligations	<p>Course attendance 80% of lectures and practices</p> <p>Handling of Course assignments</p>
13	Assessment elements	<p>a. Annual evaluation (40%)</p> <p>-Performance on the seminars, exercises, tests) 20%</p> <p>- Project work/Course assignment/ 20%</p> <p>b. Final Exam (60%)</p>
14	Literature	<ul style="list-style-type: none"> • Rritja e shpendeve Tekst mesimor 2010 L.Sena, G. Stefi • Renna M. etc. alpine grasslands: relation among botanical and chemical variables affecting animal product quality. Options mediterraneennes 2016 • Dobi, P. "Teknologjite intensive te mbareshtimit te dhive" Tirane 2006 • "Produire de la viande ovine" 2004 • G. Gandini and P. Giacomelli. What economic value for local livestock breeds • Roosen J. Fadlaoui, A. Bertaglia M. "Economic evaluation and biodiversity conservation of animal genetic resources" 2003. • Robert E. Taylor & Thomas G. Field (2004). Scientific farm animal production. • Kevin Pond & Wilson Pond (2000). Introduction to animal science.

SOCIOLOGY

No.	Designation	Description
1	Title of module	Sociology
2	Lecturer, assistant	Dr. Anila Sulaj
3	Study Programe	Livestock and Animal Products Safety (LAPS)
4	Academic year, Semester	1st Year I ; 2nd Semester
5	Compulsory//electives	<i>compulsory</i>
6	Preliminary knowledge of students	
7	Ratio, study duration	1:1
8	ECTS	3
9	Brief description of program	<p>In the program of this module, students will find the necessary information for a number of problems related to:</p> <p>The social aspect of the rural environment</p> <ul style="list-style-type: none"> The nature of social relations arising in rural areas, the relevant factors specifying such relationships as such, what differences in ruralism. <p><u>Rural economy</u></p> <ul style="list-style-type: none"> Rural economy as an economy in direct contact with nature, the meeting point between economic factors and blood ties, features of capitalism in agriculture, the impact of industry and agribusiness, the stages where it crosses the urban economy, features after the 80th century. <p>Policies influence in the rural environment</p> <ul style="list-style-type: none"> The role of policy in changing rural environment, reforms pursued during the last 80 years and their social and economic impact. <p>Rural culture and urban culture</p> <ul style="list-style-type: none"> The role of culture in the survival of human culture as encyclopedia of knowledge features of Albanian culture, cultural features of rural, urban culture and the explosion of cultural differences in urban environments today.
10	Module Objectives and/or Basic Concepts	<p>The student must be capable:</p> <ul style="list-style-type: none"> To create an idea why capitalistic society was born in sociology and in what research focuses on. To recognize the causes that led to the emergence of rural sociology in the United States. Why rural sociology in the US and Europe followed different paths of development, even in the long distance its development from one continent to another.

		<ul style="list-style-type: none"> • To understand why European sociologists in their studies of the rural environment and handle differently and could not avoid historical analysis and environmental geography factor in the development of the rural community. • Why American rural sociologists and Europeans have exchanged their criticism between the nature of rural studies. • To understand the concept of rural communities as a historical form with different contents in time and space. • To know, to examine the characteristics of the rural environment • To understand how these characteristics are changing as a result of urbanization, distance and means of communication • Armed with the basic concepts of rural sociology to be able to assess the Albanian environment. • Achieve that the Albanian reality presents not only traditional but also features transformations of the basic characteristics of rural community in transformation. • Analyze how traditional elements coexist and why global society is penetrating the rural community. • Explain the causes of social, economic, cultural and social change • To understand the features of the rural community • To know the main reforms that have been carried out in Albania in agrarian policy and undergoing transformations that rural environment. • To compare the main reforms that has been undertaken in modern time in Albania by analyzing each. • To understand the broader role of extra-rural factors in the development of the rural community. Why these factors have priority over internal factors • Explain the differences of rural development in comparison with other countries. • To understand the relationships that create rural and urban community environment, to "read" from the spatial and social point of view. • Analyze the social characteristics of rural society forms depending on space they have. • To understand how the environment affects not only geographic relationships that rural communities creates an environment but also social interaction within the community and psychological formation of its members • Explain the dramatic changes that occur during the rural exodus, as is the integration of the rural population in the urban environment. • Analyze especially changes that come in the peasant family in the city and social change control centers on
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		<p>the individual.</p> <ul style="list-style-type: none"> • How collision of urban culture and rural culture is percept in shaping psychological arrivals in the city. • To understand the changing urban environment because of this exodus. Analyse and to compare the features that has exodus in Albania depending on the period in which it is performed and in particular the departure of the 90s of the XX century. • To develop a culture of entry level around ideas that different thinkers for rural environment have given. • Maintain position of critical analysis of theoretical concepts about theses formulated by the currents of thought in the field of rural sociology and different thinkers. • Analyze critically formulate theoretical opinion during the XX century on contemporary changes that are being made to rural areas? How have these interpretations valued the Albanian environment and its deep transformation? • To understand the concept of employment and what distinguishes it from the profession. To understand the features of employment in the village. • To understand how rural family are going more and more distant from traditional occupations, which have become urban employments, and who are social factors of this process. • To understand how does the process of specialization in agriculture and displaying it in the properties of large and medium. • To understand the concept of family enterprises, as this basic unit combines economic relations and blood ties which varies the ratio between these two aspects in typical capitalist urban enterprises. • To understand the household remains an economy of production of goods or is integrated into the capitalist goods production • How does the process of capitalism in agriculture, what are the features that distinguish this process from the development of the industry. • Analyze the relationship between general nomocracy development with features that represents this process in agriculture and industry.
11	Teaching elements	Lectures, seminars, work in group, intermediate tests
12	Student's obligations	Course attendance 80% of lectures and practices Handling of Course assignments
13	Assessment elements	<p>a. Annual evaluation (40%)</p> <p>-Performance on the seminars, exercises, tests) 20%</p> <p>- Project work/Course assignment/ 20%</p> <p>b. Final Exam (60%)</p>

14	Literature	<ul style="list-style-type: none"> • Cikël leksionesh “Sociologjia Rurale”, A.Sulaj, 2018 <p>i. Other teaching literature:</p> <ul style="list-style-type: none"> • Sam Hillyard. 1st Edition, 2007, The sociology of Rural Life. Berg. Publishers. ISBN: 9781845201388. • Everett M. Rogers. Social Change in Rural Society: 2012, A text book in Rural Sociology • A. Mucaj. Sociologjia rurale dhe urbane ISBN: 978-99943-45-44-1 • Cornelia Butler Flora, Jan L. Flora Susan Fey, Third Edition Rural Communities: Legacy and Change. 2007 • Alessandro Bonanno, Hanns, Bakker, Raymond Jussaume, Yoshio Kawamura and Mark Shucksmith. Vol. 16, Research in Rural Sociology and development, 2010, UK • Frederik H. Buttel and Philip McMichael. New Direction in Sociology of Global Development, 2005, by Elsevier Ltd
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FEEDS PROCESING, QUALITY AND SAFETY

No.	Designation	Description
1	Title of module	Feed processing, quality and safety
2	Lecturer, assistant	Prof. Enkelejda Emiri-Sallaku, Prof. Etleva Deila
3	Study Programe	Livestock and Animal Products Safety (LAPS)
4	Academic year, Semester	2nd Year II ; 2nd semester
5	Compulsory//electives	<i>compulsory</i>
6	Preliminary knowledge of students	
7	Ratio, study duration	2:2
8	ECTS	6
	Brief description of program	<p>Part I. Quality and nutritional value of the main feed groups/feeds.</p> <ul style="list-style-type: none"> • Classification of feedstuff, their quality and nutritional, economic and ecological evaluation, as well as the factors that influence it. • Chemical, energetic, protein and mineral evaluation systems for animal feeds • Roughages, dry forage and natural pasture • Native energy and protein concentrates and milling by-products of the industry • Energy/Protein concentrates. • Combined feed mixes and mineral/vitam supplements, non- nutritive additives. <p>Part II: Fresh feeds conservation techniques through drying and silage process</p> <ul style="list-style-type: none"> • preparation and use of silage/haylage on the farm • preparation and use of hay on the farm <p>Part III. 3.. Feed safety in livestock and aquaculture farms.</p> <ul style="list-style-type: none"> • Basic Knowledge about the role of feeds safety in food sicurity for humans. • Basic Knowledge about National and international legislation in this field
10	Module Objectives and/or Basic Concepts	<p>The aim of the module: Students should acquire the skills and necessary sustainable knowledge, especially practical skills, very important for the farmer and assistant specialist, about the quality and safety feed and feed processing.</p> <p>The module aims to:</p> <ol style="list-style-type: none"> Students must acquire the necessary skills and knowledge, mainly practical, for a farmer or assistant-specialist, about nutritional value of the main groups feeds used in livestock farming Students must acquire basic practical knowledge on the

		<p>preservation and processing of fresh feed.</p> <p>c. Students must acquire basic practical knowledge on feed safety.</p>
11	"Dual In-Farm/bussiness practice"	<p>Main topics of practical training of the subject: <u>Animal Feeds</u></p> <p>Students describe, analysis and reflects (also in form of proposals/solution for improvement) on following topics:</p> <ul style="list-style-type: none"> • On-farm forage and concentrate production and market-purchased feeds; • On-field forage and concentrate quality assessment and sample preparation; • Technology of Forage conservation – silages, hay; • Silage and hay quality evaluation;
12	Teaching elements	Lectures, seminars, exercises, laboratory, work in group, intermediate tests
13	Student's obligations	<p>Course attendance 80% of lectures and practices</p> <p>Handling of Course assignments</p>
14	Assessment elements	<p>a. Annual evaluation (40%)</p> <p>-Performance on the seminars, exercises, tests) 20%</p> <p>- Project work/Course assignment/ 20%</p> <p>b. Final Exam (60%)</p>
15	Literature	<p>Delia E; Sallaku E. Cikël leksionesh për modulin: <i>Ushqimet e kafsheve, perpunimi dhe siguria e tyre.</i></p> <p>Literatura e rekomanduar:</p> <ul style="list-style-type: none"> • Ensinger, et. al. (1991): Feeds & Nutrition • Gadoud, R. et al. (1992): Nutrition et Alimentation des Animaux D'Elevage (I + II) • Jeroch, H., Flachowsky, G., Weissbach, F. (1993) Futtermittelkunde. • McDonald, Edwards, Greenhalgh (2010): Animal nutrition • Menke, K-H & W. Huss (1987): Tierernaerung und Futtermittelkunde • Naumann et al. (1986): Futtermittelanalytik

GENETICS

No.	Designation	Description
1	Title of module	Genetics
2	Lecturer, assistant	Prof. Dr. Anila Hoda; Dr. Lorena Hysi
3	Study Programme	Livestock and Animal Products Safety (LAPS)
4	Academic year, Semester	2nd Year II ; 1st Semester
5	Compulsory//electives	<i>compulsory</i>
6	Preliminary knowledge of students	
7	Ratio, study duration	2:2
8	ECTS	6
9	Brief description of program	<p>Through the program of the module, students will find the necessary information for a number of problems related to:</p> <ul style="list-style-type: none"> • An examination of the basic principles of genetics <ul style="list-style-type: none"> ○ in eukaryotes and prokaryotes <ul style="list-style-type: none"> ▪ at the level of molecules, ▪ cells, and ▪ Multicellular organisms, including humans. • Topics include Mendelian and non-Mendelian inheritance, • structure and function of chromosomes and • structure and function of genomes, • biological variation resulting from <ul style="list-style-type: none"> ○ recombination, ○ mutation, and ○ selection, • population and biometrical genetics.
10	Module Objectives and/or Basic Concepts	<p>Through the program of the module "Genetics", students will gain necessary information and skills:</p> <ul style="list-style-type: none"> d. The Mendelian and non-Mendelian modes of inheritance that govern passage of genetic traits across generation e. Use knowledge of inheritance to track alleles through generations and categorize and predict genotypes and

		<p>phenotypes</p> <ol style="list-style-type: none"> The basic structure and function of DNA and chromosomes as well as how chromosomes move through mitosis and meiosis Draw the stages of mitosis and meiosis and explain how the process of mutation occurs and generates phenotypic diversity The basics of the molecular processes of DNA replication, transcription and translation as well as the important characteristics of the genetic code Draw and name all the relevant machinery for DNA replication, transcription, and translation Identify the parts of a gene, transcribe it, and then translate it into protein The Hardy-Weinberg equilibrium equation and the requirements for maintaining Hardy-Weinberg equilibrium in a population Calculate p, q, p^2, q^2, and $2pq$ for a population before and after the occurrence of selection.
11	Teaching elements	Lectures, seminars, exercises, laboratory, work in group, intermediate tests
12	Student's obligations	Course attendance 80% of lectures and practices Handling of Course assignments
13	Assessment elements	<p>c. Annual evaluation (40%)</p> <ul style="list-style-type: none"> -Performance on the seminars, exercises, tests) 20% - Project work/Course assignment/ 20% <p>d. Final Exam (60%)</p>
14	Literature	<ul style="list-style-type: none"> Hoda, A. (2008). Gjenetika. Tekst për sudentët Hoda, A. Cikël leksionesh <p>Other teaching literature:</p> <ul style="list-style-type: none"> Principles of Genetics by Robert H. Tamarin. Tata-McGraw Hill, Seventh Edition 2002). Gene IV, V, VI by Benjamin Lewin, Oxford University press, Oxford.

ANIMAL HYGIENE MANAGEMENT

No.	Designation	Description
1	Title of module	Animal hygiene management
2	Lecturer, assistant	Prof. Dr. Natale Shoshi
3	Study Programe	Livestock and Animal Products Safety (LAPS)
4	Academic year, Semester	2nd Year II ; 1st Semester
5	Compulsory//electives	<i>compulsory</i>
6	Preliminary knowledge of students	
7	Ratio, study duration	1:13
8	ECTS	
9	Brief description of program	<p>Hygiene is a branch of medical science that aims to study all the factors that affect or may affect the health status of the organism, ie in maintaining the health of the individual and the group.</p> <p>"Animal Hygiene and environmental protection" as basic vocational training course aims to establish sustainable knowledge to students on environmental health, with the aim to provide them with a complete hygienic culture to precede a complex technological applications livestock farms, creating a system of behaviors & practices, to preserve health.</p>
10	Module Objectives and/or Basic Concepts	<ul style="list-style-type: none"> • To provide students with a mature culture of hygiene to be preceded by a complex technological applications in livestock ecosystems (farms), creating a system of behaviors & practices, careful to preserve health. • It aims to establish among students under the full theory on integrated management, as a very important element in the breeding of animals and birds as well as on environmental health in general and species specific, aimed at protecting the health of the herd and providing nutritional quality. •
11	Dual In-Farm/bussiness practice	<p>Main topics of practical training of the subject: <u>Animal Hygiene</u></p> <p>Students describe, analysis and reflects (also in form of proposals for improvement) on following topics:</p> <ul style="list-style-type: none"> • Evaluation of environment status in stable: air, gases, lighting, microorganisms; • Assessment of water hygiene in the farm; • Hygiene and prophylaxis measures in livestock farm (disinfection, etc); • Management and processing of animal excrements (manure) in the farm; • Microbiological control of animal stables; • Assessment of pollution factors in the animal stables; • Assessment of pollution impact of the livestock farm on environment (soil, water, etc);

		<ul style="list-style-type: none"> • Evaluation of standards of transports of animals in to and from the livestock farm; • Assessment of standards of animal welfare in the farm.
12	Teaching elements	Lectures, seminars, exercises, laboratory, work in group, intermediate tests
13	Student's obligations	Course attendance 80% of lectures and practices Handling of Course assignments
14	Assessment elements	<p>a. Annual evaluation (40%)</p> <ul style="list-style-type: none"> -Performance on the seminars, exercises, tests) 20% - Project work/Course assignment/ 20% <p>b. Final Exam (60%)</p>
15	Literature	<ul style="list-style-type: none"> • Shoshi (2000, ribotim 2017): "Higjiena e kafsheve" • Leksione <p>i. Other teaching literature:</p> <ul style="list-style-type: none"> • Shoshi (2004, ribotim 2016) "Higjiena Veterinare" • Ademollo, Boldrini: " <i>Controllo malattie transmissibili</i>"-Brescia, 2000 • Aghina.C, Maletto.S, Maletto.R : " <i>La gestione igienico-sanitario degli Allevamenti</i>" Reda-Roma, 2000 • Muller W. & Schlenker G. " <i>Kompendium der Tierhygiene</i>" Berlin, Lehmanns Media, LOB. de, 2003

INTRODUCTION TO ANIMAL HEALTH MANAGEMENT

No.	Designation	Description
1	Title of module	Introduction to Animal Health management
2	Lecturer, assistant	Prof. Dr. Vangjel Ceroni
3	Study Programme	Livestock and Animal Products Safety (LAPS)
4	Academic year, Semester	2nd Year II ; 1st Semester
5	Compulsory//electives	<i>Compulsory</i>
6	Preliminary knowledge of students	
7	Ratio, study duration	2:1
8	ECTS	3
9	Brief description of program	<p>The subject program "Diseases of farm animals" has as its objective and function a clinical theoretical preparation, based on contemporary veterinary requirements for farm species, and to provide students with basic theoretical knowledge on non-infectious internal diseases. More specifically, students will be introduced to the study and theoretical-practical acquisition of the main etiopathogenetic, epidemiological, clinical elements, diagnosis and treatment of animal diseases.</p> <p>The program includes non-infectious internal diseases according to systems, starting with skin diseases, including autoimmune and allergic ones; cardiovascular system; respiratory tract and liver; of the urinary system; nervous system and metabolism in the practical program, clinical cases will be demonstrated with the students. For each clinical case, the etio-pathological aspects, the diagnosis and the differential diagnosis will be discussed and the simple treatment scheme will be given, with the medications and the doses of their use. Attention will be paid to the assessment and discussion of the role of the environment and nutrition in the birth and development of the disease in animals.</p> <p>At the end of the "Diseases of Farm Animals" course, students should be able to recognize some of the most common diseases present in our farm animals. They must be able to assess the health condition of the animals and take the initial measures for notification, limiting the spread or treatment.</p>
10	Module Objectives and/or Basic Concepts	<p>Basic concepts</p> <ul style="list-style-type: none"> • Disease. • Dermatitis. • Photosensitization dermatitis. • Reticulitis and pericarditis. • Laryngitis, frynghitis and bronchitis. • Pneumonia and pulmonary emphysemas. • Acidosis syndrome. • Metabolic disorder

11	Dual In-Farm/business practice	<p>Main topics of practical training of the subject: <u>Introduction to Animal Health management</u> Students describe, analysis and reflects (also in form of proposals for improvement) on following topics:</p> <ul style="list-style-type: none"> • Veterinary assistance to the farm; • Health situation of the farm; • Main non-zootic diseases in the farm; • Main zootic diseases of the farm; • Impact of main diseases on productivity and health status of the farm; • Costs of diseases and of veterinary service on productivity and competitiveness of the farm.
12	Teaching elements	Lectures, seminars, exercises, laboratory, work in group, intermediate tests
13	Student's obligations	<p>Course attendance 80% of lectures and practices Handling of Course assignments</p>
14	Assessment elements	<p>a. Annual evaluation (40%) -Performance on the seminars, exercises, tests) 20% - Project work/Course assignment/ 20%</p> <p>b. Final Exam (60%)</p>
15	Literature	<ul style="list-style-type: none"> • Ceroni V. (2018): Sëmundje të Kafshëve Ripërtypëse. • Berberi P.; Ceroni V.; Munguli C.; Biba N.; Gjino P. (2009): Sëmundjet e Kafshëve Ripërtypëse. • Berberi P; Ceroni V. (2007): Sëmundjet e Vicave. • Ceroni V. e bp. (2014): Propedeutika për Kafshët Ripërtypëse. Supplementary literature • Large Animal Internal Medicine, 2005 • Veterinary Medicine, 2007 • Goat Medicine, 2000 • Disease of Sheep, 2002

BASICS OF ANIMAL ANATOMY AND PHYSIOLOGY

No.	Designation	Description
1	Title of module	Basics of Animal anatomy and physiology
2	Lecturer, assistant	Prof. Dr. Pellumb Zalla; Prof. Assoc. Dr. Doriana Beqiraj
3	Study Programe	Livestock and Animal Products Safety (LAPS)
4	Academic year, Semester	2nd Year II ; 1st Semester
5	Compulsory//electives	<i>compulsory</i>
6	Preliminary knowledge of students	
7	Ratio, study duration	3:2
8	ECTS	6
9	Brief description of program	<p>Through the program module, students will obtain the necessary information on different issue related with the:</p> <p>Anatomy</p> <ul style="list-style-type: none"> • Anatomy introduction and the importance of anatomy study. The embryonic origin of the epithelial tissue. Morphological and functional features of the epithelial tissue. • Connective tissue, as a tissue that enable the connection of the organs. Structure classification and functions of connective tissue. Blood and its cellular elements. Muscle tissue as a special tissue in contraction enabling animal movement. Structure and classification of muscular tissue. Structure of sacromere as morphological and functional base unit. Nervous tissue, as most specialized body tissue. The main features of the nervous tissue. The morphological unit of the nervous tissue and the classification of neurons. Neuroglia and nerve fibers. • Nomenclature of Veterinary Anatomy (NAV). The anatomic plane and regions. Directional terms and position on animal body. Osteology, structure, classification and functions of the bones. Arthrologia and types of articulations. Fibrous junctions, cartilaginous junctions and synovial joints. Myology and muscles structure. Appendages of the muscles. Forms and types of the muscles. The muscles of the head, neck and trunk. The muscles of forelimb and hindlimb. • Serous body cavities. The thoracic cavity, abdominal and pelvic. Oral cavity. Construction, structure and classification of the teeth. Constructions of the pharynx and esophagus. • Structure and classification of the stomach in different animals. The stomach in monogastric and ruminants. • Structure and classification of the small intestine, duodenum, jejunum and ileum. Structure and

		<p>classification of the large intestine, cecum, colon and rectum.</p> <ul style="list-style-type: none"> • Glands associated with the alimentary canal. Anatomy of the liver, its positions in different animals. The respiratory system, anatomy of the larynx and trachea. The structure of the lungs in different species. • The urinary system. Structure of the kidney and its features in different species. Microscopic anatomy of the kidney and its blood supply. Structure of the ureter and urinary bladder. The structure of the male and female urethra. • Structure of the male genitals organs. His anatomical structures and changes that exist in different species. Structure of the female genital organs and its anatomical structure. Structure of the ovaries and changes of the size and shape related with the sexual cycle. The anatomy of uterus and here shape in different animals. The anatomy of mammary glands. • The anatomy of central nervous system and peripheral nervous system. • Organs of the cardiovascular system. The anatomy of the hearts and here shape and position. Conducting system of the heart. The structure of the arteries and veins. The pulmonary and systemic circulation. • Sensory organs. The organ of vision and its anatomic structure. Andexa of the eye. Vestibulocochlear organ. The anatomic structure of external ear, middle ear and internal ear. • Common integumentum and skin layers. Skin glands, sebaceous and sweat glands. The anatomy of the commun integumentum modifications: horn, hoof, nail and claw. The anatomy of primary endocrine glands. • The bird's anatomy. The structure of skeleton and differences regarding mammals. Features of the digestive system and the structure of cloaca. The avian respiratory system and the air sacs. Structure of urinary tract, male and female genital organs. • The anatomy of rabbit. The structure of skeleton and differences regarding mammals. The anatomy of the alimentary tract and changes with the mammals. Anatomy of the urinary, and male and female genital system. • Fish anatomy. The body structure. The skeleton structure in teleost's. Skeletal anatomy of neurocranium and viscerocraniumit. The structure of vertebral column and ribs. Integumentary system and pectoral, pelvic and caudal gridle. The muscular system in fish. The digestive system and its peculiarity. Regions and components of the fish digestive system. Oral cavity, pharynx, esophagus, stomach and intestine. Accessory organs, liver and pancreas. • Respiratory system. The anatomic structure of the branch and pseudo branch. Urinary tract, male and
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		<p>female genital organs. The nervous system in fish. Circulatory system. The heart, arterial and venous system. The main blood vessels in fishes. Endocrine system and endocrine glands in fish. Blood and its cellular elements.</p> <p>Through the program of the module, students will find and learn the necessary information related to animal physiology:</p> <ul style="list-style-type: none"> • Muscle Physiology, overview of muscle physiology, skeletal muscle contraction and physiology of smooth muscle • Nervous tissue, cells of nervous system, electrochemical basis of neuron function, • Epithelial and connective tissue physiology • Body fluids and Homeostasis. Distribution and balance of body water. Homeostasis as maintenance of the normal situations in internal body, factors that are related and influence in keeping the normal situation inside the body as energy, O₂ and CO₂ concentration, acid-basic balance, enzymatic activity, body temperature and its regulation. • The composition and functions of blood, blood pH, volume, blood cells, etc. • The kidney and urinary system, nephron components, overview of urine formation, glomerular filtration and tubular transport, • Endocrine system and immune system, • Physiology of respiration, physical and mechanical aspects of respiration, pulmonary ventilation and transport of gases. Regulation of respiration, neural and humoral control • Physiology of digestion, absorption and metabolism. Motility, secretory activities, digestion and absorption of nutrients, ruminant's digestive physiology and intestinal microbiology • Male and female reproduction in mammals. Lactation and functional of mammary gland, mammaryogenesis and lactogenesis, involution, etc.
10	Module Objectives and/or Basic Concepts	<p>Anatomy</p> <ul style="list-style-type: none"> • Recognize the four basic tissues of the animals organism. The cellular structure of the tissues and their anatomical and physiological features. • Recognize anatomy of the skeleton of the head, trunk and limbs. • Recognize the different types of articulations. Ndërtimin e muskujve, vecoritë dhe klasifikimin e tij. • Recognize the digestive system and its features in monogastric and ruminants. • Recognize the respiratory system in different animals. • Recognize the anatomy of the urinary organs. • Recognize the anatomy of male and female genital organs. • Recognize the Anatomy of central nervous system and peripheral.

		<ul style="list-style-type: none"> • Recognize the cardiovascular system and the anatomy of sensory organs, based on the anatomy structure of the eye and ear. • Recognize the anatomy of common integumentum and its appendages. Recognize of the anatomical structure of endocrine system. • Recognize the anatomy of the avians and difference that exist regarding mammals. • Recognize the anatomy of the rabbit. • Recognize the fish anatomy. Shape and classification of the fishes. The skeleton of the teleosts. Respiratory system. The alimentary tract of the fishes. The urinary and reproductive system of the fishes. Integumentary system and general structure. Anatomy of the scale. Anatomy of the endocrine system. Cardiovascular and nervous system in the fishes <p>Physiology</p> <ul style="list-style-type: none"> • To know the physiology of the cell as basic morphological functional unit of tissues, organs and animal body • To understand muscle physiology • To understand general and special physiology of the nervous system • To understand the physiology of blood circulation and homeostasis • To understand the physiology of respiration • To understand the physiology of digestion and absorption of the nutrients, • To understand the physiology of digestive system and metabolic processes, • To understand the physiology of reproduction, pregnancy and lactation.
11	Teaching elements	Lectures, seminars, exercises, laboratory, work in group, intermediate tests
12	Student's obligations	Course attendance 80% of lectures and practices Handling of Course assignments
13	Assessment elements	<p>a. Annual evaluation (40%)</p> <ul style="list-style-type: none"> -Performance on the seminars, exercises, tests) 20% - Project work/Course assignment/ 20% <p>b. Final Exam (60%)</p>
14	Literature	<ul style="list-style-type: none"> • Duro, S., Zalla, P., (2012) Anatomia e kafshëve (Skeletologjia dhe Miologjia) • Zalla, P., Duro, S., Andoni, E., (2012) Anatomia e kafshëve (Splanknologjia) • Zalla, P., Duro, S., (2017) Anatomia e kafshëve II (Cikël leksionesh) • Cikël leksionesh Munga A., Klimi L., (2016): "Fiziologjia e kafshëve" <p>Other teaching literature:</p> <ul style="list-style-type: none"> • Köning, E.H., Liebich, G.H., (2014) Veterinary Anatomy of Domestic Animals (textbook and colour

		<p>atlas)</p> <ul style="list-style-type: none"> • Dyce, M.K., Sack, O.W., Wensing, G.J.C., (2002) Textbook of Veterinary Anatomy (third edition) • Frandson, D.R., Wilke, L. W., Fails, D.A.,(2016) Anatomy and Physiology of farm animals. 7th Edition • William O. Reece (2015) Dukes Physiology of domestic animals. (13 Edition) • William O. Reece (2009) Functional Anatomy and Physiology of Domestic Animals 4th Edition • Moyes C. D., Schulte P. M., (2015) Principles of Animal Physiology (3rd Edition)
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INTRODUCTION IN ACQUACULTURE AND ICHTIC PRODUCTS QUALITY

No.	Designation	Description
1	Title of module	Introduction in acquaculture and ichtic products quality
2	Lecturer, assistant	Prof. Asoc. Dr. Rigers Bakiu
3	Study Programe	Livestock and Animal Products Safety (LAPS)
4	Academic year, Semester	2nd Year II ; 1st Semester
5	Compulsory//electives	<i>compulsory</i>
6	Preliminary knowledge of students	
7	Ratio, study duration	2:1
8	ECTS	5
9	Brief description of program	<p>The students will find the information needed for a number issues related to the role of aquaculture, aquaculture history, aquaculture reports with formats energy, characteristics and categories of aquaculture production systems, functions and characteristics of all aquaculture systems, molluscculture and the value of the clams, traceability and methods of lithic products estimation, swimming baskets in slick waters and marine protected areas, permanent flow systems – Flow-through Raceways, ponds, recirculation aquaculture systems – RAS and aquaponics</p> <p>integration of plant and fish cultivation</p> <p>Students will find in this syllabus the necessary information for a series of issues related to:</p> <ul style="list-style-type: none"> • Aquaculture Role; • Aquaculture History; • Aquaculture and Energy; • Characterization and Categories of Aquaculture Production Systems; • Functions and Characteristics of All Aquaculture Systems; • Shellfish Aquaculture; • Cage Culture in Freshwater and Protected Marine Areas; • Ocean Cage Culture; • Flow-through Raceways; • Ponds; • Recirculating Aquaculture Systems; • Aquaponics—Integrating Fish and Plant Culture; • Genetic overview of Aquaculture Fish Species.
10	Module Objectives and/or Basic Concepts	<p>The module ‘Introduction of Aquaculture’ will provide students with the skills and information necessary to:</p> <ul style="list-style-type: none"> • Aquaculture history, role and an overview of aquaculture production systems characteristics;

		<ul style="list-style-type: none"> • Basic principles of shellfish aquaculture; • Major characteristics of aquaculture farms based on ponds, raceways and cages; • Closed and integrated aquaculture systems, and research activity trends in aquaculture.
11	Teaching elements	Lectures, seminars, exercises, laboratory, work in group, intermediate tests
12	Student's obligations	Course attendance 80% of lectures and practices Handling of Course assignments
13	Assessment elements	<p>a. Annual evaluation (40%)</p> <p>-Performance on the seminars, exercises, tests) 20%</p> <p>- Project work/Course assignment/ 20%</p> <p>b. Final Exam (60%)</p>
14	Literature	<ul style="list-style-type: none"> • Rigers Bakiu (2013) Sistemet e Prodhimit ne Akuakulture f. 405. [Tekst i Miratuar ne Departamentin e Akuakultures dhe Peshkimit] <p>Other teaching literature:</p> <ul style="list-style-type: none"> • James H. Tidwell (2012) Aquaculture Production Systems Willey Blackwell f. 434. • Vladimir Spaho (2005) Hyrje ne Akukulture. f. 408.

ECOLOGY

No.	Designation	Description
1	Title of module	Ecology
2	Lecturer, assistant	Dr. Romina Koto
3	Study Programe	Livestock and Animal Products Safety (LAPS)
4	Academic year, Semester	2nd Year II ; 2nd Semester
5	Compulsory//electives	<i>compulsory</i>
6	Preliminary knowledge of students	
7	Ratio, study duration	2:1
8	ECTS	5
9	Brief description of program	<p>Through the development of the "Ecology" module, students will find all the necessary information as foreseen in the objectives of the module, which are divided into the knowledge, skills and competences that the student is expected to acquire for a number of biological issues and environmental related to:</p> <ul style="list-style-type: none"> • Theoretical and conceptual bases of Ecology. Definition and contribution of Ecology. Directions of study. Ecosystem theory. Historical Developments of Ecology. Study methods in ecology. Divisions of the ecology faculty and subdivisions. • Ecosystems. Biosphere and structure. Ecosystem and structure. Classification of ecosystems. Ecosystem evolution strategy. • The functioning of ecosystems. Energy Movement in Ecosystems. Biomass and Production. Food chains and webs. Food level. Food structure. Ecological pyramids. • Course in Ecosystems. Movement of matter (Biogeochemical cycles). Cycles of the main elements. • Interactions in ecosystems. Interactions in Biocenosis (synecological relationships). Positive interactions in ecosystems. Negative interactions. Competition, interspecies competition. • The concept of biotic community and Demoecology (Ecology of populations). Classification of organisms within the community. Community analysis and community species diversity. Types of communities. Ecotones. Main qualities of populations. Population density. Fertility and mortality. Arrangements, distribution and structure of populations. • The concept of habitat and ecological niche. The concept of habitat. The concept of ecological Niš. Ecological valence, ecological equivalents and indicators. Ecological space and biological clocks. • Main types of ecosystems. Terrestrial environment.

		<p>Terrestrial biota and biogeographical regions. General structure of terrestrial ecosystems. Distribution of terrestrial ecosystems. Biomes. Landscape form of the environment and Classification of landscapes.</p> <ul style="list-style-type: none"> • Aquatic ecosystems. Marine and oceanic ecosystems. Characteristics of the marine environment. Marine biota. The area of the sea. Communities of oceanic areas. Freshwater ecosystems. Freshwater environments, types and limiting factors. Ecological classification of freshwater organisms. Freshwater biota: flora and fauna. The lakes. The swamps. The resources. • Agroecosystems. The concept of agroecosystem. Resources of agroecosystems. Ecological processes in agroecosystems. Classification of agroecosystems. • Ecology and Environment. The concept of the environment. The spatial and temporal scale of the environment. Natural environment and technological environment. Changes in time of the environment. Adaptation to the environment. The concept of climate. Climate systems. Climate divisions of Albania. Environment and ecological factors. • Ecology of Environmental Resources. Concept of environmental resource. Environmental resources and reserves. Classification of environmental resources. Abiotic and biotic resources. Food, land and water resources. • Environmental Degradation and Pollution. Degradation and pollution of the environment. Types of pollution. Ecological consequences. Greenhouse effect, global warming and climate change. Cost of pollution and control. • Conservation and Protection of the Environment. Conservation of nature. Environmental Protection. Protected areas. Classification and assessment. • Balance in the biosphere. Ecology and sustainable development. Ecological assessments of the relationship between man and the environment. Man, technology and environment. Possibilities for balancing human-nature relations. Environmental education. The concept of sustainable environmental development. Ecology as a historical-social science. <p>Ecology as a science of sustainable development.</p>
10	Module Objectives and/or Basic Concepts	<p>Basic concepts where the module is focused are as following:</p> <ul style="list-style-type: none"> • Theoretical and conceptual bases of ecology. Ecosystem theory. Study methods in ecology. • Ecosystems. Biosphere. The ecosystem. Classification of ecosystems. The strategy of the evolution of ecosystems. • The functioning of ecosystems and the movement of Energy in Ecosystems. Biomass and production. • Subjects in ecosystems and biogeochemical cycles.

		<p>Cycles of the main elements.</p> <ul style="list-style-type: none"> • Interactions in ecosystems, synecological relationships in ecosystems. Competition. • Biological communities and Demoeology (Ecology of populations) in ecosystems. • The concept of habitat and ecological niche. Ecological valence, ecological equivalents and indicators. • Main types of ecosystems. Terrestrial ecosystems and biogeographic regions. Biomes. The landscapes. • Aquatic ecosystems, marine and oceanic ecosystems and freshwater ecosystems. • Agroecosystems. Resources of agroecosystems. Classification of agroecosystems. • Ecology and Environment. Natural and technological environment. Adaptation to the environment. The concept of climate and climate systems. Environment and ecological factors. • Ecology of Environmental Resources. Environmental resources and reserves. Abiotic and biotic resources. • Human action and ecological consequences. Environmental Degradation and Pollution. Greenhouse effect and climate change. • Preservation and Protection of the Environment. Protected areas. Classification and assessment methods of protected areas. • Balance in the biosphere and sustainable development. Man, technology and environment. Environmental education. Ecology as a historical-social science and as a science of sustainable development
11	Teaching elements	Lectures, seminars, exercises, laboratory, work in group, intermediate tests
12	Student's obligations	Course attendance 80% of lectures and practices Handling of Course assignments
13	Assessment elements	<p>a. Annual evaluation (40%)</p> <p>-Performance on the seminars, exercises, tests) 20%</p> <p>- Project work/Course assignment/ 20%</p> <p>b. Final Exam (60%)</p>
14	Literature	<ul style="list-style-type: none"> • Teksti mësimor “Ekologjia”, Peçuli V., Kopali A. (2018). <p>Other teaching literature:</p> <ul style="list-style-type: none"> • Teksti mësimor „Agroekologjia„, Peçuli V., Kopali A., Doko A (2017)

ANIMAL NUTRITION AND QUALITY PRODUCT

No.	Designation	Description
1	Title of module	Animal Nutrition and Quality Product
2	Lecturer, assistant	Prof. M. Tafaj; Prof. E. Emiri-Sallaku; Prof. E. Deila
3	Study Programe	Livestock and Animal Products Safety (LAPS)
4	Academic year, Semester	2nd Year II ; 2nd semester
5	Compulsory//electives	<i>compulsory</i>
6	Preliminary knowledge of students	
7	Ratio, study duration	3:2
8	ECTS	6
9	Brief description of program	<p>Part I: Introduction to Animal and Fish Nutrition. The importance of feeding in livestock. Basic knowledge about the organic and mineral nutrients, digestive tract and digestion, as well as their metabolism in animal and fish organisms. Basic knowledge about the energy and protein utilization in animal and fish organisms. The basic knowledge about the digestibility of nutrients and their utilization on the practice animal feeding and food assessment. Feed intake and the importance on practice feeding.</p> <p>Part II: Feeding in Livestock and Aquaculture Farms Basic knowledge about the norms and nutritive requirements of animals and fish. Basics of animal nutrition on the farm: <ol style="list-style-type: none"> 1. For dairy cattle 2. For growing animals and for meat production; 3. For animals of reproduction; 4. For egg production. 5. For muscular work The basics of fish nutrition in aquaculture farms Computerized programs and methods of rationing and feeding on livestock and aquaculture farms.</p> <p>Part III. Feeding and Animal Product Quality Basic knowledge about the impact of feeding on the quality and safety of primary animal products produced on livestock and aquaculture farms</p>
10	Module Objectives and/or Basic Concepts	<p>The aim of the module: Students should acquire the skills and necessary sustainable knowledge, especially practical skills, very important for the farmer and assistant specialist, about the feeding on the livestock farms.</p> <p>The Objectives of this module: <ol style="list-style-type: none"> 1. Students acquire basic knowledge about the nutrients, their digestion and their utilization in animals and fish also. 2. Students acquire basic practical knowledge about the </p>

		<p>norms and nutritive rations on different directions of animal and fish production in livestock and fish farms</p> <p>3. Students acquire basic knowledge about on the indicate of the feeding on nutrient content, nutritional qualities and their safety as human foods.</p>
11	"Dual In-Farm/bussiness practice"	<p>Main topics of practical training of the subject.</p> <p>Students describe, analysis and reflects (also in form of proposals/solution for improvement) on following topics:</p> <ul style="list-style-type: none"> • Ration formulation on different animal species on livestock farm; • Feeding techniques and technologies for different animal species on livestock farm; • Optimization of feeding; • Feeding controlling; • Alimentary (digestive and metabolic) related health disorders; • Farm nutrient balance, esp. CH₄, N, P, K; • Evaluation of feeds and feeding costs.
12	Teaching elements	Lectures, seminars, exercises, laboratory, work in group, intermediate tests
13	Student's obligations	Course attendance 80% of lectures and practices Handling of Course assignments
14	Assessment elements	<p>e. Annual evaluation (40%)</p> <p>-Performance on the seminars, exercises 20%</p> <p>- Project work/Course assignment/ 20%</p> <p>f. Final Exam (60%)</p>
15	Literature	<p>a. Literatura bazë e detyrueshme:</p> <ul style="list-style-type: none"> • Tafaj, M. Sallaku E.; Delia E. Cikël leksionesh per modulin: <i>Të ushqyerit dhe Cilësia e produkteve blegtorale</i> <p>b. Literatura e rekomanduar:</p> <ul style="list-style-type: none"> • Tafaj, M. (2017) Cikël Leksionesh Libraria e UBT. 90 fq. • Sallaku E.; Delia E. (2016) Cikël leksionesh Libraria e UBT. 110 fq. • McDonald P.; Edwards R. A; Greenhalg J. F. D. (2011): Animal Nutrition • Antogiovani, M. (2004): Nutrizione degli animali in produzione zootecnica. • Delteil L. (2012) Nutrition et alimentation des animaux d'élevage I. • Esminger, M., Oldfield, Hienenmann, W. (1990): Feeds and Nutrition. • Jeroch, H., Drochner, W., Simon, O. (2008): Ernährung landwirtschaftlicher Nutztieren. • Kirchgessner, M. (2014): Tierernährung.

LIVESTOCK MECHANIZATION AND BUILDINGS

No.	Designation	Description
1	Title of module	Mechanization in zootechnics and livestock buildings
2	Lecturer, assistant	Dr. Edmond Demollari
3	Study Programme	Livestock and Animal Products Safety (LAPS)
4	Academic year, Semester	2nd Year II ; 2nd Semester
5	Compulsory//electives	<i>compulsory</i>
6	Preliminary knowledge of students	
7	Ratio, study duration	2:1
8	ECTS	4
9	Brief description of program	In this module, the student gets theoretical and practical knowledge about machines, aggregates and lines that are used in the livestock economy for the necessary installations for water supply, for the system of machines for collecting and handling fodder, transport in livestock sector, milking aggregates, basic principles for construction on the farm (constructive side and component systems of farms), ventilation and lighting system
10	Module Objectives and/or Basic Concepts	<ul style="list-style-type: none"> • Obtaining knowledge on the role, purpose and importance of the mechanization process in agriculture and livestock • Criteria, mechanization and calculation of water supplies of a livestock farm. Calculation of theoretical and real pressure of pumps. Pumps, types, function and their construction • The role and importance of the mechanization of animal feed processing. Operation and operation of forage crop machines. Classification and transport features in livestock. Machinery for internal and external transport. Calculation of loads and transport units • Mechanization of the milking process. Criteria for choosing a herd for milking, MM2-MM3 machines, operation, operation and their components • Principles, requirements and planning of the construction of a farm. Determining factors in the choice of the structural system. Characteristics and properties for construction materials of farms. Determinations on ventilation and lighting of livestock facilities
11	Dual In-Farm/bussiness practice	<p>Main topics of practical training of the subject: <i>Mechanization in zootechnics and livestock buildings.</i></p> <p>Students describe, analysis and reflects (also in form of proposals for improvement) on following topics:</p> <ul style="list-style-type: none"> • Assessment of water supply in the livestock farm: infrastructure, calculation of requirements, water

		<p>resource and supply;</p> <ul style="list-style-type: none"> • Assessment of mechanization of forage production in the farm: cultivation, harvesting, transport, processing; forage conservation (silage, hay) and concentrate processing; • Assessment of the mechanization of milking in dairy farms and of milk cooling, storage and transport; • Mechanization of feed processing and feeding; • Planning of livestock farms (location, application and approval procedures, etc); • Assessment of standards of stables construction in the farm; • Mechanization of processing and transport of farm manure (organic fertilizer);
12	Teaching elements	Lectures, seminars, exercises, work in group, intermediate tests
13	Student's obligations	Course attendance 80% of lectures and practices Handling of Course assignments
14	Assessment elements	<p>a. Annual evaluation (40%)</p> <p>-Performance on the seminars, exercises, tests) 20%</p> <p>- Project work/Course assignment/ 20%</p> <p>b. Final Exam (60%)</p>
15	Literature	<p>Skripte per studentet: MEKANIZIMI NE ZOOTEKNI DHE NDERTIME BLEGTORALE. MSc-Ing. Edmond DEMOLLARI</p> <p>Other teaching literature:</p> <p>K. GOLE, Mekanizimi i blegtore I; II.</p> <p>Th.QIRJO, "Mekanika Bujqesore" L. KORE; E.BEJKO, "Teknologjia e produkteve blegtore"</p> <p>Bickert, W.G., et al. 2000. Dairy Freestall Housing and Equipment, 7th edition. MWPS-7. Midwest Plan Service. Iowa State University. Ames, IA.</p> <p>House, H.K. 2009. Design Considerations for Low-Profile Cross-Ventilated Dairy Barns. Free Stall Housing Manual. Ontario Ministry of Agriculture, Food and Rural Affairs. Guelph, ON.</p> <p>Lang, B., H.K. House, N.G. Anderson, and J. Rodenburg. 2012. Free Stall Housing Manual. Ontario Ministry of Agriculture, Food and Rural Affairs. Guelph, ON.</p> <p>http://beefandlamb.ahdb.org.uk/returns/</p> <p>https://extension.psu.edu/inlets-for-mechanical-ventilation-systems-in-animal-housing</p> <p>ASAE. "Lighting for Dairy Farms and the Poultry Industry." ASAE Standards. 40th ed. EP344.2. St. Joseph, MI: ASAE, 1993.</p> <p>Bird, N.A., and D.I. Masse. "Light Restricting Fan Houses and Air Inlets." Canada Plan Service Leaflet M-5911.</p>

ANIMAL BREEDING

No.	Designation	Description
1	Title of module	Animal Breeding
2	Lecturer, assistant	Prof. Dr. Lumturi Papa
3	Study Programe	Livestock and Animal Products Safety (LAPS)
4	Academic year, Semester	2nd Year II ; 2nd Semester
5	Compulsory//electives	<i>compulsory</i>
6	Preliminary knowledge of students	
7	Ratio, study duration	3:2
8	ECTS	6
9	Brief description of program	<p>Students will find in this syllabus the necessary information for a series of issues related to:</p> <ul style="list-style-type: none"> • General principles of genetic improvement of domesticated animals and fish... • The evolution of animals during the domestication, the effect of different factors on this process with a great importance for the history of development of humanity. • Based on the theory of evolution the students will understand the role of natural and artificial selection on the dynamic of changing in animal populations and gene frequencies • Understanding the genetic equilibrium of a population and factors that move the population from that equilibrium. • The effect of genetic and environment on animal and cultivated fish performances, the importance of genotype in choosing the best individual; genetic and environment variance. • The quantitative traits under genetic improvement and main principles of their artificial selection: within family selection, between family selection. • Different crossing method used to improve the traits of economically importance, creating new breeds, lines and families. • Predicting selection response and the effect of differential of selection, heritability, generation interval. • Predicting breeding value of sires and dams.
10	Module Objectives and/or Basic Concepts	<p>The module “Animal breeding” will provide students with the skills and information necessary to:</p> <ul style="list-style-type: none"> • Acquisition of knowledge on species evolution and the role of natural and artificial selection on their changes, gene frequencies and genetic equilibrium. • Understanding the importance of variation of most characteristics that exist between animals for artificial

		<p>selection practiced by the breeders.</p> <ul style="list-style-type: none"> • Understanding that modern methods of livestock improvement attempt to disentangle the phenotype and genetic variance as far as possible and the importance of genotype for selecting the best animals. • Familiarity with quantitative traits under genetic improvement and the principles of artificial selection to improve their performance and reduce the occurrence of unwanted traits. • Knowledge of main strategies used for the genetic improvement of livestock like as selection within or between breeds and crossbreeding. • Enabling the students to have a clear view of what economically important traits are and based on that to choose the most appropriate breed or cross and effective genetic improvement strategy. • Enabling the student to design a simple scheme of selection, defining the goal and selection criteria's and predicts response to selection in order to compare alternative breeding programs. • General knowledge on the steps involved in selection of animals to maximize the response and choosing the appropriate method to predict the breeding value of individual animals. • Enabling the students to evaluate the risk status of local breeds and designing the conservation schemes and the improvement of main traits economically important...
11	Dual In-Farm/business practice	<p>Main topics of practical training of the subject: <u>Animal Breeding</u></p> <p>Students describe, analysis and reflects (also in form of proposals for improvement) on following topics:</p> <ul style="list-style-type: none"> • Growth intensity and comparison to the standard of the breed and cross; • Selection of the offspring of the flock;# • Monitoring of the performance parameters of the flock; • Analysis of breeding methods based on performance parameters and breeding parents; • Evaluation of the parameters of the breeding bulls based on the breeding registers; • Planning of the crossbreeding plan based on the type of production, performance parameters, objectives of the farm and request/offer – ratio of the market
12	Teaching elements	Lectures, seminars, exercises, laboratory, work in group, intermediate tests
13	Student's obligations	Course attendance 80% of lectures and practices Handling of Course assignments
14	Assessment elements	<p>a. Annual evaluation (40%)</p> <p>-Performance on the seminars, exercises, tests) 20%</p> <p>- Project work/Course assignment/ 20%</p> <p>b. Final Exam (60%)</p>

15	Literature	<ul style="list-style-type: none"> • Lecture Notes.. Lumturi Papa <p>Other teaching literature</p> <ul style="list-style-type: none"> • Vincani G., Dervishi V.; (1988) ;Përzgjedhja me bazat gjenetike, • Vincani G.; (1986), Përmirësimi gjenetik i Kafsheve , • Geof Sim;(2000).Genetic Improvement of Cattle and Sheep , • Rodney B. Harrington; (1995) Animal Breeding , an Introduction.. • Giuglio Pagnaco;(2004). Genetica animale applicata, • Elvio Borgioli; (1985). Genetica e miglioramento degli animali agricoli. • Kor Oldenbroek;(2007) Utilisation and conservation of farm animal genetic resources • FAO.(1998): Management of small populations at risk.
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FARM MANAGEMENT

No.	Designation	Description
1	Title of module	Farm Management
2	Lecturer, assistant	Dr. Ilir Tomori
3	Study Programe	Livestock and Animal Products Safety (LAPS)
4	Academic year, Semester	2nd Year II ; 2nd Semester
5	Compulsory//electives	<i>compulsory</i>
6	Preliminary knowledge of students	
7	Ratio, study duration	2:1
8	ECTS	5
9	Brief description of program	<p>In the program of this module, students will find the necessary information for a number of problems related to:</p> <ul style="list-style-type: none"> • Which is the meaning of an agricultural farm; which are the models of organization of agricultural farms and their characteristic, which is the meaning of farm management; which are the main management principles, functions and operation fields; the importance of setting objectives; which are the steps of the decision-making process; the classification and decision-making environment; which are the major problems that farmers face and the methods used to overcome them. • Which are the sources of providing the information and the ways of its use; Components of an accounting system; Balance sheet and its analysis, The statement of income and expenses and its analysis • Which is the role of economic theory in farm management; Economic principles used in farm management; Marginalization; The function and production technology; Concepts and cost relationships in agriculture; The determination of the level the one and two variable factors that maximizes the profit; The determination of the level of production that maximizes the profit; The distribution of a factor on a limited quantity among alternatives of use; Choosing a combination of factors and production activities • Which are the planning and budgeting techniques in the farm; Activities budget; Partial budget of an agricultural farm; Overall farm planning; Inflow and outflow budget • Which are the constituent elements of the business analysis and its activities; Types of analysis; Analysis of the size of the farm business; Evaluating the effectiveness of the business; Indicators that assess the effectiveness production and economic effectiveness

10	Module Objectives and/or Basic Concepts	<p>The student should be able:</p> <ul style="list-style-type: none"> • To know the meaning of the agricultural farm, as the main form of organization of the agricultural business and their organization models • To know the meaning and the importance of management, as one of the most important factors in business success, its principles, functions and fields • To recognize the decision making process and be able to identify the most important objectives of the farm business; the main problems faced by a business and the use of various methods in solving these problems. • To recognize the directions of the use of information provided by accounting and its components. • To know how to use the information obtained from the balance sheet, in assessing the financial position of the business. • To know how to use the information provided by the statement of income and expenses in assessing the usefulness of the business. • To know the economic principles and the importance of their use in decision making process on the farm. • To know how to make the right decisions on the profitable level of use of the production factors, the allocation of limited factors, output level that maximizes the profit, optimal combination of factors and production activities on the farm. • To know the structure of an enterprise budget and the purposes of its compilation and use. • To know the structure of a partial farm budget and the purposes of its compilation and use. • To know how to develop the overall farm plan. • To know the structure of a Cash Flow budget and the purposes of its compilation and use. • To know the process of analyzing the agricultural business as a part of the control function. • To identify the indicators of the business size evaluation. • To know how to evaluate the effectiveness of the business. To identify the indicators that assesses the physical and economic effectiveness of an agricultural business.
11	Dual In-Farm/business practice	<p>Main topics of practical training of the subject: <u>Farm Management</u></p> <p>Students describe, analysis and reflects (also in form of proposals for improvement) on following topics:</p> <ul style="list-style-type: none"> • Economic production of milk, meat, egg; • Farm balance sheet; • Statement of income and expenses; • Profit and loss account; • Farm analysis: success analysis; account of farm production costs; • Draft on farm business plan;

		<ul style="list-style-type: none"> • Farm budget; • Evaluation of farm business size; • Assesment of business efficiency.
12	Teaching elements	Lectures, seminars, exercises, work in group, intermediate tests
13	Student's obligations	Course attendance 80% of lectures and practices Handling of Course assignments
14	Assessment elements	<p>a. Annual evaluation (40%)</p> <p>-Performance on the seminars, exercises, tests) 20%</p> <p>- Project work/Course assignment/ 20%</p> <p>b. Final Exam (60%)</p>
15	Literature	<ul style="list-style-type: none"> • Tekst Mësimor: “Drejtimi i Fermave”. Autor: Prof.Asoc.Dr. M.Meço; Dr. G. Mehmeti; Prof.Asoc.Dr. Arif Murrija; Dr.I.Tomorri; Dr.S.Maloku. <p>Other teaching literature:</p> <ul style="list-style-type: none"> • Ronald D. Kay, William M. Edwards, and Patricia A. Duffy, Farm Management, 5th Edition, by McGraw-Hill, 2009 • Martin Upton, Farm Management in Africa, Oxford University press 1973. • RaananWeitz, from peasant to farmer: a revolutionary strategy for development, Columbia University Press, New York and London, 1971. • M. D. Boehlje, V. R. Eidman, Farm Management, by John Wiley and Sons Inc.1984. • C. S. Barnard, J. S. Nix, Farm Planning and Control, Cambridge University Press. • Raymond R. Beneke, Managing the Farm Business, John Wiely and Sons, Inc

POLICY DEVELOPMENT AND ADVISORY ON ANIMAL PRODUCTION

No.	Designation	Description
1	Title of module	Policy development and advisory on animal production
2	Lecturer, assistant	Prof. Dr. Ylli Bicoku
3	Study Programe	Livestock and Animal Products Safety (LAPS)
4	Academic year, Semester	2nd Year II ; 2nd Semester
5	Compulsory//electives	<i>compulsory</i>
6	Preliminary knowledge of students	
7	Ratio, study duration	2:1
8	ECTS	4
9	Brief description of program	<p>Students will find in this syllabus the necessary information for a series of issues related to:</p> <ul style="list-style-type: none"> • Animal production, in Albania and worldwide, and its correlation with poverty reduction. • Livestock sector, tendencies of economic development and expansion, in our country. • What is the Strategy and Policy of the Livestock sector? Who designs them, why they are important and for whom they are designed. • Instruments, objective and role of the government in the design of livestock policy. Who implements the livestock policy and which are the interested groups. • Sectoral policies that impact product pricing. • Food security for the population, food product pricing and rural development. • Common Agriculture Policy (CAP) and EU rural development policies. • Issues relating to agricultural and livestock policies. Rural and agricultural development policies in Albania in accordance with EU policies. • Issues relating with livestock research and new areas of research. On-farm research, on-station research and their differences. • Issues relating to livestock advisory systems and its new approaches. • Agricultural and livestock advisory system. • Extension methods in agriculture and livestock; individual, group (method and result demonstrations, trainings, etc.) and mass-media methods. • The organization and management of the advisory system and its role in agricultural development. • Legal framework of livestock breeding. Laws and regulations in regard to agricultural animal welfare and their management.

		<ul style="list-style-type: none"> • Agricultural sector SWOT Analysis. Why it is beneficial and on which levels it is performed. <p>The purpose of this module is to provide students with knowledge and practical notions, as for those who will have the opportunity to work in the public agricultural system (MARDWA and ARD), as for those who will be employed in the private sector (rural development projects, not for profit organizations, associations and groups of mutual cooperation).</p>
10	Module Objectives and/or Basic Concepts	<p>The module ‘Policy Development and Advisory on Animal Production’ will provide students with the skills and information necessary to:</p> <ul style="list-style-type: none"> • Students get acquainted with the development policy in agriculture and animal production; how the strategy and policy on livestock are designed. Agricultural and rural development policies in Albania in accordance with the EU policies. • Students will gain knowledge about policies that affect the promotion of producers, as well as opinions for pros and cons of subsidies. • Enabling students to differentiate between models and advisory service systems as well as different theories of knowledge; to assess communication technologies, and to provide with consideration to the development policies in the area of knowledge management. • Knowing the methods of the advisory service and the importance of the media use, which include all activities with inter-personal contact, as well as organization and management advisory service and its role on the livestock development
11	Dual In-Farm/bussiness practice	<p>Main topics of practical training of the subject: <u>Policy development and Extension service in Livestock</u></p> <p>Students describe, analysis and reflects (also in form of proposals for improvement) on following topics:</p> <ul style="list-style-type: none"> • How policies for the livestock sector are developed • How the IPARD measures for the livestock sector are developed and implemented. • Organization of the Extension Service at the national, regional and local level. • Organization and functioning of the Regional Extension Service Agencies: distribution of tasks of the experts as “extensionist” and as “subject matter expert”. • Elaboration of the extension activity plan. • Selection of the so-called “contact farms”. • Preparation of the demonstration, selection of the farms for the demonstration, etc. • Preparation of field days, preparation of farmers, invitation of participants, etc. • Preparation of the farmer’s training, invitation of the farmers, time, place, etc. • Preparation of the prospects
12	Teaching elements	Lectures, seminars, work in group, intermediate tests
12	Student’s obligations	Course attendance 80% of lectures and practices

		Handling of Course assignments
13	Assessment elements	<p>a. Annual evaluation (40%)</p> <p>-Performance on the seminars, exercises, tests) 20%</p> <p>- Project work/Course assignment/ 20%</p> <p>b. Final Exam (60%)</p>
14	Literature	<ul style="list-style-type: none"> • Biçoku, Y., (2014). Politika e Zhvillimit dhe Këshillimit në Blegtori (Cikël Leksionesh). [varianti elektronik ne faqen e web https://sites.google.com/a/ubt.edu.al/ylli-bicoku/leksione] <p>Supplementary literature:</p> <ul style="list-style-type: none"> • Albrecht, H., et.al. (1989). Agricultural Extension. Basic Concepts and Methods, (vol. 1) and Examples and Background Material (vol. 2). Published: Wiley Eastern Limited. ISBN: 3-88085-364-9 and ISBN: 3-88085-405-X. • <u>Buck, A.J. de; Rijn, I. van; Röling, N.G.; Wossink, G.A.A.</u> (2001). Farmers' Reasons for Changing or not Changing to more Sustainable Practices: An Exploratory Study of Arable Farming in the Netherlands. Journal of Agricultural Education and Extension 7 (2001) 3. ISSN: 1389-224X. p. 153-266. • Hajno, L., (2013). Parimet dhe Metodat e Ekstensionit Bujqesor. Botimet FLESH. ISBN: 978-9928-131-20-1. • Jones, J.G.(1993). Agriculture and the Environment. Ellis Horwood Series in Environmental Management, Science and Technology. Chichester. ISBN: 0-13-065863-4. • MBZHRAU (2014). Strategjia Ndersektorale per Zhvillimin Rural dhe Bujqesor 2014-2020. • Norton D.R., (2004). Agricultural Development Policy- concepts and experiences. Published by John Wiley&Sons, Ltd. ISBN: 0-470-85778. • OECD (2006). Coherence of Agricultural and Rural Development Policies. Edited by Dimitris Diakosavvas. Downloadable from: https://www.oecd.org/tad/agricultural-policies/39283883.pdf • Pata, K., (2010). Ekstensionit. Botimet TOENA. Tirane. ISBN: 978-99943-1-596-3. • Rivera, W.M., Qamar, M.K., Crowder, L.V., (2001). Agricultural and rural extension worldwide: options for institutional reform in developing countries. Rome, Food and Agriculture Organization of the United Nations. 49 pp. Downloadable from: ftp://ftp.fao.org/docrep/fao/004/y2709e/y2709e.pdf • Rogers, E., (2003). Diffusion of Innovations, 5th Edition, Free Press. ISBN: 0-7432-5823-1. • Röling, N., (2009). Conceptual and Methodological Developments in Innovation. <u>Communication</u>

		<p><u>Science</u>. CERES. ISBN 9781844076710. - p. 9 - 34.</p> <ul style="list-style-type: none"> • Röling, N., (2004). Communication for Development in Research, Extension and Education. Paper presented at the 9th UN Roundtable on Communication for Development 6 – 9 September 2004, Rome, Italy. p 1-24. • Röling, N., (1984). Agricultural Knowledge: Its Development, Transformation, Promotion and Utilization. Proceedings of the Sixth European Seminar on Extension Education, Lucca, Italy. • Sarkar, J. (1998). Technological Diffusion: Alternative Theories and Historical Evidence. Journal of Economic Surveys 12, 131-176. • Sena, S, (1999). Këshillimi Bujqësor. Botim i AFADA-s. Tirane. • Skreli, E., (2006). Politikat e Bujqësisë dhe te Ushqimit – Aspekte te teorisë dhe praktikës. Tekst. • Swanson, B., (2008). Global Review of Good Agricultural Extension and Advisory Service Practices. FAO. Downloadable from: http://www.fao.org/uploads/media/modernise%20the.pdf • Tarelli, I., (2005). Sfida dhe Perspektiva ne Ekstensionin Bujqësor. ALBGRAF-Tirane. • Van den Ban, A.W, Hawkins, H.S., (1988). Agricultural Extension. Published by Longman Scientific& Technical. UK. ISBN: 0-582-02883-3. • Warner, K. E. (1974). The Need for Some Innovative Concepts of Innovation: an Examination of Research on the Diffusion of Innovations", Policy Sciences 5, 433-451. • Wiggins, S., et al (2013). Agricultural Development Policy: a Contemporary Agenda. • Background Paper for GIZ. Overseas Development Institute. Downloadable from: https://www.giz.de/expertise/downloads/giz2013-en-odi-agricultural-development-policy-contemporary-agenda.pdf
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CATTLE BREEDING AND MANAGEMENT

No.	Designation	Description
1	Title of module	Cattle breeding and management
2	Lecturer, assistant	Prof. Assoc. Dr. Agim Kumaraku
3	Study Programe	Livestock and Animal Products Safety (LAPS)
4	Academic year, Semester	3rnd Year III ; 1st Semester
5	Compulsory//electives	<i>compulsory</i>
6	Preliminary knowledge of students	
7	Ratio, study duration	2:25
8	ECTS	
9	Brief description of program	<ul style="list-style-type: none"> • Cattle and its role in animal production. Biological features. Exterior, conformation, and production profile of dairy, beef and combined breeds. Linear assessment of type traits. • Production of milk. Udder as a milk production organ. Its structure and function. The Composition, synthesis and secretion of milk. Neuro-hormonal regulation of the secretion process. Lactation and accompanying nutritional-physiological changes. Lactation curve. Factors affecting the production and quality of milk. • Beef production. On physiology of growth and beef production in cattle. Performance of the body weight growth, tissue and chemical composition. Intensity of body tissue growth. Proportional changes during growth. Exponential growth equation. Factors affecting the production and quality of beef. The law of regressive reward of feed. Compensatory growth. • Body condition. Body Condition Scoring. Methodology. Dynamics of Body Condition during production cycle. Target values of BC as per production cycle phases. BC impact on the productive and reproductive performance of Dairy Cow. • Feeding of different cattle categories. Feeding dairy cows during different lactation stages. Some basic practical nutritional principles. Optimization of dry matter Intake (DMI) during lactation. Feeding of dairy cows during dry period. Feeding newly born calves and young heifers. Feeding calves for beef production. • Reproduction in cattle. Sexual and economic (physical) maturity. Factors affecting the attainment of sexual maturity. Phases of sexual cycle. The its distinctive characteristics. Reproductive indices in cows and heifers. Fertility and factors affecting its impruvement. Artificial insemination. Motives for introducing artificial insemination. Organization and application on-farm condition. • Genetic basis of cattle selection. The qualitative and

		quantitative traits. Inheritance of quantitative traits. Factors affecting genetic progress through selection. The selection differential, heritability and the generation interval. Correlations and regressions. Selection programs. Their organization at the farm level. Methods of purebred breeding. Crossbreeding. Crossbreeding systems. Keeping and housing systems for different cattle categories. Hygiene and microclimatic parameters.
10	Module Objectives and/or Basic Concepts	The aim of the module “Cattle Breeding” is to provide students with basic knowledge on: Principles of cattle breeding and management for optimizing production of milk and beef. Determination of growth indices, production and reproduction. Nutrition requirements and practices of feeding dairy and beef cattle. Basic knowledge on the most known breeds of cattle. The objectives of the selection at the farm level as well as the principles of breeding programs.
11	Dual In-Farm/business practice	<p>Main topics of practical training of the subject: Cattle breeding management</p> <p>Students describe, analysis and reflects (also in form of proposals for improvement) on following topics:</p> <ul style="list-style-type: none"> • Feeding technologies used for different cattle categories (dairy cows, calf rearing, breeding cattle, heifers, fattening calves, fattening cattle, fattening bulls); • Technologies of husbandry and housing used in the farm for different cattle categories under intensive (stable) cattle production system; • Extensive cattle ruminant production system using grassland and natural pastures; • Breeding methods/techniques used in the dairy farm; • Reproduction techniques applied in the dairy farm; • Milk and meat production, quality and safety: monitoring of growth and meat performance parameters; monitoring of quality and safety of primary milk and meat produced by cattle; • Economic of dairy and meat cattle production; • Evaluation of standards of Animal Care for Dairy and Beef Cattle Farms.
12	Teaching elements	Lectures, seminars, exercises, field work, work in group, intermediate tests
13	Student's obligations	Course attendance 80% of lectures and practices Handling of Course assignments
14	Assessment elements	<p>a. Annual evaluation (40%)</p> <p>-Performance on the seminars, exercises, tests) 20%</p> <p>- Project work/Course assignment/ 20%</p> <p>b. Final Exam (60%)</p>
15	Literature	<ul style="list-style-type: none"> • Ensminger, M.E., (2005) Animal Science Digest, • Geoff Smm., (1998) Genetic Improvement of Cattle and Sheep • Kumaraku A., Leka F., (2005) Reproductive Biotechnologies in Cattle

		<ul style="list-style-type: none"> • Kumaraku A. Lectures on Cattle Breeding and management. • Phillips, C.J.C., (2001) Principles of Cattle Production, • Richard O. Kellems, D.C. Church (1998) Livestock Feeds and Feeding, Fourth Edition
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SHEEP PRODUCTION AND PRODUCT QUALITY

No.	Designation	Description
1	Title of module	Sheep production and product quality
2	Lecturer, assistant	Prof. Assoc. Dr. Petrit Dobi
3	Study Programe	Livestock and Animal Products Safety (LAPS)
4	Academic year, Semester	3rnd Year III ; 1st Semester
5	Compulsory//electives	<i>compulsory</i>
6	Preliminary knowledge of students	
7	Ratio, study duration	2:2
8	ECTS	5
9	Brief description of program	<p>The program include:</p> <ul style="list-style-type: none"> • Knowledge on local sheep and goat breeds in Albania, their location and characteristics. Their role in the farm economy. Typical breeds of sheep and goats known internationally. Merino breeds, milk and meat breeds. • Basics of inheritance in small ruminants. • Inheritance of some traits of economic importance in SR. • Selection. Objectives, indicators and selection methods. Selection of sheep at the flock level. Traits and selection Criteria. • Production of wool, its place in the world economy. Wool production and the market. Hair Follicle and its function. Types of fur and wool. Physical and technological qualities of wool. Factors affecting it. • Meat production. Factors affecting. Meat composition. Evaluation of meat production. Evaluation of the meat quality. Carcass and its parts. Classification of carcasses. SEUROP system. • Production of milk. Quality characteristics of sheep and goat milk. Characteristics of the lactation curve. Factors that affect milk production. Milking sheep. • Feeding the sheep, the calculation of the energy protein requirements. compilation of feeding rations. Pastures, classification. Use of pastures.
10	Module Objectives and/or Basic Concepts	<p>Students get knowledge on:</p> <ul style="list-style-type: none"> • Main local breeds of sheep and goats in Albania as well as some of internationally known breeds. • Practical application of genetics in sheep and goat breeding • Selection programs in small ruminants • Reproduction, its specificities and application of artificial insemination • Specifics of production of milk and meat

		<ul style="list-style-type: none"> • Housing and other farm equipment for small ruminants • Production cycle and different production systems. • Basics of feeding. Feeding of different categories of sheep and goats. Pastures and pasturing
11	Dual In-Farm/business practice	<p>Main topics of practical training of the subject: Small Ruminants Farm Management</p> <p>Students describe, analysis and reflects (also in form of proposals for improvement) on following topics:</p> <ul style="list-style-type: none"> • Feeding technologies used for different small ruminants categories (dairy sheep, breeding sheep, fattening lambs, dairy goat, breeding goat, fattening goat lambs); • Technologies of husbandry and housing used in the farm for different small ruminant categories during winter time; • Extensive small ruminant production system using natural pastures; • Breeding methods/techniques used in the small ruminant farm; • Reproduction techniques applied in the small ruminant farm; • Milk and meat production, quality and safety: monitoring of growth and meat performance parameters; monitoring of quality and safety of primary milk and meat produced by small ruminants; • Economic of small ruminant farm; • Evaluation of standards of Animal Care for small ruminant farms.
12	Teaching elements	Lectures, seminars, exercises, field work, work in group, intermediate tests
13	Student's obligations	Course attendance 80% of lectures and practices Handling of Course assignments
14	Assessment elements	<p>a. Annual evaluation (40%)</p> <p>-Performance on the seminars, exercises, tests) 20%</p> <p>- Project work/Course assignment/ 20%</p> <p>b. Final Exam (60%)</p>
15	Literature	<ul style="list-style-type: none"> • P.Dobi "Rritja e dhenve dhe e dhive", cikel leksionesh • P.Dobi etj "Racat autoktone te bagetive te imta" <p>Supplementary literature:</p> <ul style="list-style-type: none"> • Renna M. etc. Alpine grasslands: relation among botanical and chemical variables affecting animal product quality Options mediterraneennes 2016 • B. Medolli+, C. Bernard+, P. Dobi++, A. Garnier+, F. Lerin+, "Launching a Kid Meat Goat Geographical Indication in Albania Territorial Value Chain Issues coming from the Hasi Regional Analysis – Northern Albania Options mediterraneennes 2015 • G. Gandini and P. Giacomelli. What economic value for local livestock breeds "Produire de la viande ovine" 2004

		<ul style="list-style-type: none"> • Roosen J. Fadlaoui, A. Bertaglia M. “Economic evaluation and biodiversity conservation of animal genetic resources” 2003. • Hoda, A Dobi P. Technic report of the project “ECONOGENE” 2002 • Mehmeti H. H. “Profili viziv gjenetik sidhe parametrat dhe korelacionet e treguesve fenotipik sasior dhe cilësor të 75aces Bardhokë”.Disertacion. Tiranë 2000
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POULTRY PRODUCTION AND PRODUCT QUALITY

No.	Designation	Description
1	Title of module	Poultry production and product quality
2	Lecturer, assistant	Prof. Dr. Lumturi Sena
3	Study Programe	Livestock and Animal Products Safety (LAPS)
4	Academic year, Semester	3rnd Year III ; 1st Semester
5	Compulsory//electives	<i>compulsory</i>
6	Preliminary knowledge of students	
7	Ratio, study duration	2:2
8	ECTS	5
9	Brief description of program	<p>Through the program of the module, students will find the necessary information for a number of problems related to:</p> <ul style="list-style-type: none"> • Poultry Production, current development and its perspective. A description of the most important developments in this sector. • Biological peculiarities of poultry. Anatomic & physiologic peculiarities of poultry. • Egg production. The most influencing factors on the egg production. Molting. Forced moulting. Forced moulting programs in the layers. Eggs' weight and eggs' mass. Egg's structure and quality. The most influencing factors on eggs' weight. • Physiological aspects of poultry growth. Muscles', bones' and fat's growth. Growth's models. Growth of the poultry's body parts. Meat production, influencing factors on the meat production. Meat's quality, indicators, methods of quality's evaluation, influencing factors on the meat's quality. Economical aspects of poultry meat production and marketing. • Main exterior characteristics of different poultry species. Classification of poultry breeds. Main poultry breeds. Main breeds of turkeys, ducks' and geese. • Poultry breeding. Basics of poultry heritability. Heritability of some economical important features in poultry. Heritability of the qualitative features. Heritability of quantitative features, related to the production, reproduction and vitality. Selection's pressure and differential. Correlation among the poultry features. • Poultry selection. Selection's objectives and parameters. Selection's methods for certain specific and complex features. Kinds of selection. Hybridization and its economic advantages. Hybridization's schemes. Breeding structure. Mating methods in poultry. • Poultry reproduction. Reproduction tract of poultry

		<p>male and female. Egg formation. Artificial insemination. Incubation. Peculiarities of the embryonic development. Hatching eggs' qualities. Physical regime of the incubation. Biological control. Influencing factors on the hatchability. Sexing.</p> <ul style="list-style-type: none"> • Poultry production systems. Their physiological, economic and ecological evaluation. • Breeders' replacers management. Selection of breeders' replacers. Broiler production technology and management. Layers' growing and management techniques. Poultry housing and production technologies. Peculiarities of turkey, ducks and geese production and management. • Poultry feeding. Poultry nutritional requirements. Main poultry feeds and their use. Poultry feed additives. Mineral & vitamin premixes. • Feeding programs for different poultry categories and species. • Poultry management systems. Poultry farm management. Breeding farms' structure. Breeding farms' organization.
10	Module Objectives and/or Basic Concepts	<p>Through the program of the module "Poultry Science", students will gain necessary information and skills:</p> <ul style="list-style-type: none"> • To know the current situation and the most recent and perspective developments in the Albanian and worldwide poultry industry. • To know and understand anatomic construction and physiological functions of different body systems in poultry. • To know and understand the most influencing factors on the egg production, aiming the efficient maximization of it. To understand the effect of molting on the production and when/how should the forced molting be applied? • To know the most influencing factors on the egg's composition and quality. • To know the main models and structure of poultry production systems. To understand the influence of the whole range of factors on the meat production and its qualities. • To know, distinct and define the main poultry breeds, strains and hybrids. • To know the genetic basics of poultry breeding and hybridization. • To gain and have the basics of poultry reproduction, artificial insemination and incubation. • To have the basic knowledge on the layers' and broilers' management/keeping systems and their breeding farms/systems. Poultry housing and management techniques and technologies. • To know the most recent management techniques of different poultry categories. • To know the basics of poultry nutrition and feeding

		<p>techniques.</p> <ul style="list-style-type: none"> • To be able to prepare feed formulas for different poultry species and categories. • To know the structure, organization and management principles of a poultry farm.
11	Dual In-Farm/bussiness practice	<p>Main topics of practical training of the subject: Poultry Farm Management</p> <p>Students describe, analysis and reflects (also in form of proposals for improvement) on following topics:</p> <ul style="list-style-type: none"> • Feeding technologies used for egg, meat (broiler) production, as well as breeding chicks; • Technologies of husbandry and housing used in the farm for different poultry categories (chicken, chicks and broiler); • Breeding methods/techniques used in the poultry farm; • Reproduction, incubation applied in the poultry farm; • Egg and meat production, quality and safety: monitoring of egg and meat performance parameters; monitoring of quality and safety of primary egg and meat products; • Economic of poultry farm; • Evaluation of standards of Animal Care for poultry farms.
12	Teaching elements	Lectures, seminars, exercises, field work, work in group, intermediate tests
13	Student's obligations	<p>Course attendance 80% of lectures and practices</p> <p>Handling of Course assignments</p>
14	Assessment elements	<p>a. Annual evaluation (40%)</p> <p>-Performance on the seminars, exercises, tests) 20%</p> <p>- Project work/Course assignment/ 20%</p> <p>b. Final Exam (60%)</p>
15	Literature	<ul style="list-style-type: none"> • Hocking Paul. "Biology of breeding poultry". 2009. • J.M.Mc Nab, K N Boorman. Poultry feedstuffs.2002 • Leeson S, Summers J.D "Broiler Breeder Production" 2000 • Leeson S, Summers J.D "Scott's Nutrition of the Chicken" 2001 • Nuhaed Joseph Daghir. Poultry Production in Hot Climates. 2008 • R.I.Richardson, G C Mead. Poultry meat science. 1999 • Reference document on "Best Available Techniques for Intensive Rearing of Poultry and Pigs ». (2015) • Rose S.P, "Principles of Poultry Science". 1998 • Sena L, Stefi G. "Poultry science", 2009 • WilleyA John & Sons, "Handbook of poultry science and technology" 2000 •

MONOGASTRIC'S PRODUCTION & PRODUCT QUALITY

No.	Designation	Description
1	Title of module	Monogastric's production of and product quality
2	Lecturer, assistant	Dr. Alma Llambiri
3	Study Programe	Livestock and Animal Products Safety (LAPS)
4	Academic year, Semester	3rnd Year III ; 1st Semester
5	Compulsory//electives	<i>compulsory</i>
6	Preliminary knowledge of students	
7	Ratio, study duration	2:2
8	ECTS	5
9	Brief description of program	<p>Students will find in this syllabus the necessary information for a series of issues related to:</p> <ul style="list-style-type: none"> • Biological aspects of swine. • Principles of pig selection and breeding programs. • Feeds and feeding regime • Nutritional aspects of weaned piglets feeding. • Sows and boars feeding. • Feeding of growing pigs for meat production • Pig production and reproduction physiology. • Meat quality and test of performance in pig production • Optimal parameters of the microclimate • The basic principles of building a plant for the growth of pigs, in accordance with the norms of the European Community • Protocol implementation of veterinary techniques, behavior with pigs, slaughter and transport techniques
10	Module Objectives and/or Basic Concepts	<p>The module "Growing of monogastric animals" will provide students with the skills and information necessary to:</p> <ul style="list-style-type: none"> • Knowledge acquaintance on swine evolution and the improvement of main economic features. • Knowing main principles of genetic improvement of swine's. • Physiology and intensity of growth • Knowledge acquaintance of swine reproduction and its management. • Learning about swine feeding according to different ages. • Breeding technology of gilts, sows, boars and piglet • Optimal parameters of the microclimate. • Swine housing and rearing systems
11	Dual In-Farm/bussiness practice	<p>Main topics of practical training of the subject: Pig Farm Management 75</p> <p>Students describe, analysis and reflects (also in form of proposals for improvement) on following topics:</p>

		<ul style="list-style-type: none"> • Feeding technologies used for different pig categories (sows, piglets, growing-finishing pigs, breeding pigs, fattening pigs); • Technologies of husbandry and housing used in the farm for different pig categories; • Breeding methods/techniques used in the pig farm; • Reproduction techniques applied in the pig farm; • Meat production, quality and safety: monitoring of growth and meat performance parameters; monitoring of quality and safety of primary meat product; • Economic of pig farm; • Evaluation of standards of Animal Care for pig farms.
12	Teaching elements	Lectures, seminars, exercises, field work, work in group, intermediate tests
13	Student's obligations	Course attendance 80% of lectures and practices Handling of Course assignments
14	Assessment elements	<p>a. Annual evaluation (40%)</p> <p>-Performance on the seminars, exercises, tests) 20%</p> <p>- Project work/Course assignment/ 20%</p> <p>b. Final Exam (60%)</p>
15	Literature	<ul style="list-style-type: none"> • Lecture notes, Alma Llambiri <p>Other teaching literature</p> <ul style="list-style-type: none"> • Alessandro Zumbo; 2010-1011; Strategie nutrizionali per l'ottimizzazione delle performance produttive del suino Nero Siciliano. Effetti del tenore in fibra della dieta sugli indici zootecnici e sulla qualità della carne; UNIVERSITÀ DEGLI STUDI DI SASSARI • Annual Report , Mo AF 2002 and 2003, • Bertacchini Francesco, Compagni Iller, 'Manual di allevamento Suino' volume I-III • Gian Maria Curto, Allevamento del Suino. • Daija A., Hajno L., (2007) Manual i mbarështimt të dërrit • Ensminger M.E and Parker R.O.1984. Swine Science. 569pp, Colin Whittemore 'The science and practice of pig production • English P.R, Smith W.j, MacLean A 1977. The sow, improving her efficiency.Farming Press, Ipswich 311pp • English P.R, Fo Wler V,R, Baxter S, Smith W J 1998. The growing and finishing pig, proving efficiency. Farming Press, Ipswich 555 pp • Raffaello Caselli; Enciclopedia tecnologica della alimentazione animale • F.Bertacchini et al; 2000; Parliamo di svezzamento – calore. R.S N.6 23-26 • G.Martelli; 1998; Alimentation e ambient; R.S n.11 71-72 • B.P. Garry, K.M. Pierce and J.V. O'Doherty† <i>Irish</i>

		<p><i>Journal of Agricultural and Food Research</i> 46: 93–104, 2007</p> <ul style="list-style-type: none"> • Jorgen Peder Christiansen. “The basics of Pig Productions”, 2003. • Kees Scheepens & M.Roozen 2008; Finishing Pigs A Practicall Guide to GrowthHealth and Behaviour • Tonin Shala, Manual per te ushqyerin e derrit ; 1996 • Tonin Shala, Teknikat e mbareshtimit te dosave ne maternitet; 2010 • Fidel Gjurgji; Hyrje ne prodhim shtazor • Doo-Hëan Kim; J.Y.Park;J.H.Woo 2000; Genetics of soë reproduction, including puberty, estrus, pregnancy, furroëing and lactation, Journal of animal science and technology ; Livestock Production Science, volume 66
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PROCESSING TECHNOLOGY AND TRACEABILITY OF LIVESTOCK PRODUCTS

No.	Designation	Description
1	Title of module	Processing technology and traceability of livestock products
2	Lecturer, assistant	Dr. Aida SHkurti
3	Study Programe	Livestock and Animal Products Safety (LAPS)
4	Academic year, Semester	3rnd Year III ; 1st Semester
5	Compulsory//electives	<i>compulsory</i>
6	Preliminary knowledge of students	
7	Ratio, study duration	2:1
8	ECTS	5
9	Brief description of program	<p>Livestock product processing technologies constitute the most important sectors in the processing of food and consumer's basic diets, therefore it is of particular importance to prepare students with scientific knowledge for the processing of livestock products such as milk, meat, eggs, and the creation of safe and high quality products. In this module, scientific knowledge is given on the chemical composition of milk, meat, eggs and their qualities and the importance in technological processing for the creation of food products, the changes that occur in their composition and structure during food processing and storage. Important knowledge is provided related to physical, chemical, microbiological and enzymatic transformations, starter cultures, etc. In this module, knowledge is provided about basic technological schemes for the creation of main products such as milk, cheese, butter, yogurt and the technology of their maturation and storage.</p> <p>The traceability of animals and animal products has become a priority for the governments of developed countries in response to consumer demands for inclusive and integrated food safety policies. The breeding of animals and products of animal origin are closely related and influence each other. There must be a means of linking the identification and traceability of live animals and the traceability of animal products in order to achieve traceability in all animal products and the food chain from farm to fork taking into account the standards set by the world organization of Animal Health (OIE) and the Codex Alimentarius Commission.</p>
10	Module Objectives and/or Basic Concepts	<ul style="list-style-type: none"> • This module aims to give students the basic concepts of animal traceability and products of animal origin. • To provide the students with the results of the risk assessment, the state of animal health and public health, the programs related to the parameters of the animal population, the types of production, the trade of animals and animal products.

		<ul style="list-style-type: none"> • Students get to know and appreciate a sound system of traceability for farm animals that offers trading partners a guarantee for the safety of the products they import. • The objective of the module is to provide scientific knowledge for the preparation of students with technological skills for the processing of livestock products such as milk, meat, eggs, etc., into safe and high quality products. • Students are equipped with scientific knowledge on the chemical composition of milk, meat, eggs and their qualities for technological processing in the creation of food products, the changes that occur in the composition and structure during their processing and storage. • Students are equipped with scientific knowledge on physical, chemical, microbiological and enzymatic transformations, starter cultures, which are used to create livestock products. • In this module, basic technological schemes for some products and the technology of their maturation and storage until the consumer are given
11	Teaching elements	Lectures, seminars, exercises, laboratory, work in group, intermediate tests
12	Student's obligations	Course attendance 80% of lectures and practices Handling of Course assignments
13	Assessment elements	<p>a. Annual evaluation (40%)</p> <p>-Performance on the seminars, exercises, tests) 20%</p> <p>- Project work/Course assignment/ 20%</p> <p>b. Final Exam (60%)</p>
14	Literature	<ul style="list-style-type: none"> • Fejzaj A 2018, Gjurmueshmeria e produkteve me origjineshtazore (cikelleksionesh) • A. Shkurti. "Teknologjia e perpunimit te qumeshtit" (liber) 2016. <p>Other teaching literature:</p> <ul style="list-style-type: none"> • www.efsa.europa.eu, Traceability in food and Agricultural product. • D.Yordanov & G. Angelova 2008, Identification and Traceability of Meat and Meat Products. • International Dairy Foods Association 2013, Traceability for Dairy and Deli.. • Dairy-Science and technology second edition, 2006 Pieter Valstra, Jan T.M. Wouters, Tom J. Geurts. • -Handbook of Food Analysis: Volume 1 and 2, by Leo M. L. Nollet • -Milk and Dairy Product Technology, Edgar Spreer • -Dairy processing. 2. Milk. 3. Dairy products. I. Wouters, Jan T. M. II. GeurtsT(Tom J.) • -Food science and technology Taylor & Francis

METHODS AND APPLICATION OF BIOTECHNOLOGY IN ANIMAL PRODUCTION

No.	Designation	Description
1	Title of module	Methods and application of biotechnology in Animal production
2	Lecturer, assistant	Prof.Dr. Anila Hoda; Dr. Lorena Hysi
3	Study Programe	Livestock and Animal Products Safety (LAPS)
4	Academic year, Semester	3rnd Year III ; 1st Semester
5	Compulsory//electives	<i>compulsory</i>
6	Preliminary knowledge of students	
7	Ratio, study duration	2:2
8	ECTS	5
9	Brief description of program	<p>The purpose of this module is to give students general scientific and technical knowledge on animal biotechnology. Concepts on the possible impact of animal biotechnology on human society, ethical aspects, benefits or biotechnology residences, as well as the impact in the field of agricultural production, are also presented.</p> <p>In this module, students are intended to be able to understand the technical and scientific aspects of animal biotechnology. They will be recognized with the main methods that apply today in the field of farm animal biotechnology, with the aim of improving their genetics. Information will also be provided on ethical aspects of security related to the application of these techniques.</p> <p>The module will start by explaining the basic principles of what biotechnology is, especially to define the broad range of subjects involved, inherent multidisciplinary and the requirement for an understanding of the basics in order to facilitate communication across the different subject boundaries. The course will enable the student to gain an insight into the relationships and interactions of the subjects and how industrial biotechnology based processes are developed and designed.</p> <p>Through the program of the module, students will find the necessary information for a number of problems related to:</p> <ul style="list-style-type: none"> • The basics of cell biology, biochemistry and molecular biology, and basic laboratory techniques. • Biotechnology is a field that encompasses both basic science and engineering. The module introduces both the principles and application of Recombinant DNA technology to animals, plants and microbial organisms. The course describes the use of genetically engineered products. • Description of the steps of the process used to make a recombinant DNA molecule • Description of the steps involved in protein production

		<ul style="list-style-type: none"> Explanation of some of the different applications of recombinant DNA technology
10	Module Objectives and/or Basic Concepts	<p>Through the program of the module, students will gain necessary information and skills to:</p> <ul style="list-style-type: none"> Recognize the foundation of modern biotechnology Define biotechnology and list some basic applications. Develop an appreciation of recombinant DNA technology and explain the principle that form the basis for the technology Describe the common methods and applications of biotechnology with regards to microorganisms, plants and animals Describe the common methods and applications of biotechnology with regards to agriculture Acknowledge both sides of the ethical implications of Biotechnology
11	Teaching elements	Lectures, seminars, exercises, laboratory, work in group, intermediate tests
12	Student's obligations	Course attendance 80% of lectures and practices Handling of Course assignments
13	Assessment elements	<p>a. Annual evaluation (40%)</p> <p>-Performance on the seminars, exercises, tests) 20%</p> <p>- Project work/Course assignment/ 20%</p> <p>b. Final Exam (60%)</p>
14	Literature	<ul style="list-style-type: none"> Hoda, A. Lecture notes Hoda, A. (2019) "Metodat dhe Aplikimet e Bioteknologjisë në kafshë", Cikël i ri leksionesh <p>Other teaching literature:</p> <ul style="list-style-type: none"> Gene Cloning and DNA Analysis (6th Edition) by T.A. Brown. John Willey & Sons Inc, USA, 2010. Lewin's Gene XI (11th Edition) by Krebs JE, Kilpatrick ST and Goldstein ES. Jones and Bartlett Publishers, Inc, 2013. Animal Cell and Tissue Culture (1st Edition) by Shivangi Mathur. Publisher: Agrobios (India), 2009. Animal Biotechnology by Varun Mehta. Publisher: Campus Book International, 2011. Laboratory Manual for Biotechnology (1st Edition) by Ashish S. Verma, Surajit Das, and Anchal Singh. Publisher: S. Chand, New Delhi, 2014. Culture of Animal Cells: A Manual of Basic Technique & Specialized Applications (6th Edition)- R. Ian Freshney. John Willey & Sons Inc, USA, 2010. Molecular Cloning: A Laboratory Manual (4th Edition) by Michael R. Green and Joseph Sambrook. Cold Spring Harbor Laboratory Press, USA, 2012. Animal Cell Culture-A Practical Approach (3rd Edition) by John R. Masters. Publishers: Oxford University Press, 2000.

		<ul style="list-style-type: none"> • Animal Biotechnology-Models in Discovery and Translation (1st Edition), Editors: Ashish S. Verma and Anchal Singh, Elsevier 2014..
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ANIMAL REPRODUCTION & ARTIFICIAL INSEMINATION

No.	Designation	Description
1	Title of module	Animal Reproduction & Artificial insemination
2	Lecturer, assistant	Prof. Dr. Luigj Turmalaj
3	Study Programme	Livestock and Animal Products Safety (LAPS)
4	Academic year, Semester	3rd Year III ; 2nd Semester
5	Compulsory//electives	<i>compulsory</i>
6	Preliminary knowledge of students	
7	Ratio, study duration	2:2
8	ECTS	5
9	Brief description of program	<p>Through this module, the students of the Bachelor study programme "Livestock and Animal Products Safety " will be taught in several directions such as:</p> <ul style="list-style-type: none"> • The importance of the module of "Animal Reproduction" in the " Livestock and Animal Products Safety ". • The relationship between the science of animal reproduction with other sciences in the field of Animal Husbandry and Veterinary Medicine. • The role of the subject of reproduction in the theoretical-practical training of students from Agriculture study programmes. • The physiological bases of a series of important processes in the field of reproduction such as; morpho-function of genital organs in female and male animals, neuro-hormonal control of reproduction processes, biology of the estrous cycle, fertility, parturition, clinical well-being of newborns, etc. • The theoretical data are also focused on reproductive biotechnologies such as; synchronization of birth, birth detection techniques, artificial insemination and embryo transfer, etc. • The theoretical data have as target different pathologies according to the physiological stages of the animal. • Pathologies of the estrous cycle in different species, both in female and male animals (infertility from various causes). • Valuable theoretical information for the pathologies of pregnancy, parturition and maternity. • After receiving theoretical information, the subject of animal reproduction offers a series of practical aspects in order to prevent and reduce various pathologies. • The practical aspects are mainly realized in livestock farms and in the laboratory. For this purpose, near the

		<p>University, we have a didactic farm (economy) which breeds and manages different species and categories of animals.</p> <ul style="list-style-type: none"> Acquisition of knowledge related to the methodologies of gynecological and andrological examination of female and male animals is one of the tasks of this subject.
10	Module Objectives and/or Basic Concepts	<p>BASIC CONCEPTS</p> <ul style="list-style-type: none"> Morpho-function of female and male genital organs in farm animals. Neuro-hormonal control of reproductive processes in farm animals. Biology of estrous cycles in farm animals (cows, sheep, goats, mares and sows). Basics of programmed reproduction in livestock farms. Artificial insemination and natural insemination in animals. Reproductive health of animals during and after calving. Care for newborns. Breast health of female animals and protection against diseases.
11	Dual In-Farm/bussiness practice	<p>Main topics of practical training of the subject: Animal Reproduction & Articial Insemination in Livestock Farm. Students describe, analysis and reflects (also in form of proposals for improvement) on following topics:</p> <ul style="list-style-type: none"> Evaluation of the flock parameters of reproduction in the farm; Parameters of reproduction diseases of the flock in the farm; Management of reproduction and artificial Insemination of the flock in the farm; Biotechnological techniques applied in the livestock farm; Newborn animals - husbandry and growth parameters.
12	Teaching elements	Lectures, seminars, exercises, laboratory, work in group, intermediate tests
13	Student's obligations	Course attendance 80% of lectures and practices Handling of Course assignments
14	Assessment elements	<p>a. Annual evaluation (40%)</p> <p>-Performance on the seminars, exercises, tests) 20%</p> <p>- Project work/Course assignment/ 20%</p> <p>b. Final Exam (60%)</p>
15	Literature	<ul style="list-style-type: none"> Riprodhimi i kafsheve dhe patologjit e tij Endokrinologjia Veterinare Obstetrika Veterinare

		<p>Other teaching literature:</p> <ul style="list-style-type: none"> • Reproduction in farm Animals, 6 and 7th Edition; <i>E.S.E. Hafez</i>. • Rabbit Production; <i>J. I. Mc Nitt , N. M. Patton , Steven D. Lukefahr , Peter R. Cheeke</i>; ISBN: 1780640110 • Comparative Reproductive Biology; <i>Heide Schatten , Gheorghe M. Constantinescu</i>; ISBN: 0813815541 • Animal Andrology : Theories and Applications; <i>Peter J. Chenoworth , Steven Lorton</i>; ISBN:1780643160 • Maternal Effects in Mammals; Professor Dario Maestripieri , <i>Jill M Mateo</i>; ISBN: 0226501205 • Animal Reproduction : New Research Developments; <i>Lucas T. Dahnof</i> ISBN: 1606925954; 31 Oct 2010 • Equine Reproduction & Stud Medicine; <i>Jonathan E. Pycock , A. Barrelet , T. J. Brazil , B. Colenbrander , Chrysann Collatos , P. J. De Vries , D. Dugdale , D. Ellis , G. England , G. Johnston</i>; ISBN10 1874545448: 04 Jun 1997 • Current Therapy in Equine Reproduction; <i>Juan C. Samper , Jonathan E. Pycock , Angus O. McKinnon</i>; ISBN: 0721602525: 23 Nov 2006 • Equine Breeding Management and Artificial Insemination; <i>Juan C. Samper</i>; ISBN: 1416052348: 22 Dec 2008 • Bovine reproduction. - <i>HOPPER, R.M.</i> - Ames: Wiley-Blackwell, 2014,. • Equine reproduction. 2nd edition.- <i>MCKINNON, A.O.; SQUIRES, E.; VAALA, W.E.; VARNER, D.D.</i>- Ames : Wiley-Blackwell, 2011, • Manual of equine reproduction. 3rd ed.- <i>BRINSKO, S.P.; BLANCHARD, T.L.; VARNER, D.D.; SCHUMACHER, J.; LOVE, C.C.; HINRICHS, K.; HARTMAN, D.L.</i>- Maryland Heights : Mosby Elsevier, 2010, • Pathways to pregnancy and parturition. - 3rd ed. - <i>SENGER, P.L.</i> - Redmon: Current Conceptions, 2012, • Small animal pediatrics. The first 12 months of life. - <i>PETERSON, M.E.; KUTZLER, M.A.</i> - Edinburgh: Saunders Elsevier, 2011,. • Veterinary pediatrics: Dogs and cats from birth to six month. 3rd ed.-<i>HOSKINS, J.D.</i> - Philadelphia: W.B. Saunders Company, 2001, • Manuel de reproduction équine.- <i>BLANCHARD, T.L.; VARNER, D.D.; SCHUMACHER, J.; LOVE,</i>
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		<p>C.C.; BRINSKO, S.P.; RIGBY, S.L.; BRUYAS, J.F.- Paris : Maloine, 2005,</p> <ul style="list-style-type: none"> • La reproduction animale et humaine.- SAINT-DIZIER, M.; CHASTANT-MAILLARD, S.- Versailles : Editions Quae, 2014, Ressource à accès restraint • Essentials of domestic animal embryology. - HYTTEL, P.; SINOWATZ, F.; VEJLSTED, M. - Edinburgh: Saunders Elsevier, 2010, • Practical atlas of ruminant and camelid reproductive ultrasonography. - DESCOTEAUX, L.; GNEMMI, G.; COLLOTON, J. - Ames: Wiley-Blackwell, 2010,
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QUALITY CONTROL OF FOOD WITH ANIMAL ORIGIN

No.	Designation	Description
1	Title of module	quality control of food with animal origin
2	Lecturer, assistant	Prof. Dr. Bizena Bijo; Prof. Asoc. Dr. Fatmira Shehu
3	Study Programe	Livestock and Animal Products Safety (LAPS)
4	Academic year, Semester	3rnd Year III ; 2nd Semester
5	Compulsory//electives	<i>compulsory</i>
6	Preliminary knowledge of students	
7	Ratio, study duration	2:1
8	ECTS	4
9	Brief description of program	<p>In this formative discipline, students of third course, informed about the issues of quality assurance and safety parameters of food products of animal origin. A special place takes control of the food chain animal products. Any argument based on the principle of traceability according to European and Albanian legislation. Special importance is given to the traceability of responsibility of each stage of the chain.</p> <p>Following this discipline, the issues addressed by the concrete specifications under each respective product (milk / dairy products, eggs / egg products, meat / meat products, fishery products, honey). By addressing concrete examples, students are given information about and current food safety problems in Albania and the world. This information serves to understand and ensure the correct way of production, processing, trading under the principle of "farm to table".</p> <p>A special attention given to the issue of quality and safety of feed, organically linked to their impact on public health. Various laboratory methods for determining the nutritional, physicochemical and hygienic indicators milk and its derivatives, eggs, meat, honey and fishery products come in the auditor / lab.</p> <p>At the end of this module students have all the theoretical and practical information in support of quality control parameters and safety of animal products.</p>
10	Module Objectives and/or Basic Concepts	<p>Through the program of the module students will gain necessary information and skills:</p> <ul style="list-style-type: none"> • What represents the food chain? • The food chain of products of animal origin. • Traceability of the food chain. Relevant legislation (Directive CE and Albanian) • The classification of products of animal origin in food groupings. • Group of protein foods and dairy products it • The major components of food of animal origin.

		<ul style="list-style-type: none"> • The concept of total quality of animal products (nutritional, hygienic and sanitary) • Basic concepts for technologies for the production of dairy products • Mycotoxins present in feed. The impact on public health. • Knowledge of methods to control quality and hygiene of products of animal origin • Promotion of Albanian traditional products of animal origin • Knowledge of supporting legislation that guarantees the correct mode of production, processing and trade, according to the principle of food safety "from farm to table".
11	Dual In-Farm/bussiness practice	<p>Main topics of practical training of the subject: Animal product -quality control and safety.</p> <p>Students describe, analysis and reflects (also in form of proposals for improvement) on following topics:</p> <ul style="list-style-type: none"> • Sampling and sample preparation of primary product in the farm and sending to the labs; • Work with data on chemical physical characteristics and microbiological status of milk produced by the farm; • Work with data on meat quality produced by the farm; • Work with data on egg quality produced by the farm; • Self-evaluation of primary product (egg or meat) safety in the poultry farm.
12	Teaching elements	Lectures, seminars, exercises, laboratory, work in group, intermediate tests
13	Student's obligations	Course attendance 80% of lectures and practices Handling of Course assignments
14	Assessment elements	<p>a. Annual evaluation (40%)</p> <p>-Performance on the seminars, exercises, tests) 20%</p> <p>- Project work/Course assignment/ 20%</p> <p>b. Final Exam (60%)</p>
15	Literature	<ul style="list-style-type: none"> • Teksti Kontrolli i Produkteve me Origjine Shtazore (B.Bijo) (Libraria UBT) <p>Other teaching literature:</p> <ul style="list-style-type: none"> • Te gjitha leksionet pwr temat qe nuk janw nw tekst jane te publikuara sw bashku me gjithe PPT per te gjitha leksionet ne website mshehu.ubt.edu.al dhe bbijo.ubt.edu.al • Ligji Nr.9863, datë 28.1.2008 PËR USHQIMIN . • VENDIM Nr. 760, datë 16.9.2015 PËR KËRKESAT PËR GJURMIN E USHQIMIT DHE USHQIMIT

		<p>PËR KAFSHË PËRGJATË ZINXHIRIT USHQIMOR.</p> <ul style="list-style-type: none"> • UDHËZIM Nr.5, datë 25.3.2011 PËR KËRKESAT SPECIFIKE TË HIGJENËS PËR STABILIMENTET E PRODHIMIT, GRUMBULLIMIT DHE PËRPUNIMIT TË QUMËSHTIT, DHE PRODUKTEVE ME BAZË QUMËSHTI • Legjislacioni i BE ne fushen e kontrollit te ushqimeve • Site të konsultuar në fushën e sigurisë ushqimore (FAO, FDA, EFSA dhe OBSH)
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RABBITS', BEES' AND SILKWORMS' BREEDING AND MANAGEMENT

No.	Designation	Description
1	Title of module	Rabbits', Bees' and Silkworms' Breeding and Management
2	Lecturer, assistant	Prof. Dr. Lunturi Sena
3	Study Programe	Livestock and Animal Products Safety (LAPS)
4	Academic year, Semester	3rnd Year III ; 2nd Semester
5	Compulsory//electives	<i>elective</i>
6	Preliminary knowledge of students	
7	Ratio, study duration	2:1
8	ECTS	4
9	Brief description of program	<p style="text-align: center;">RABBITS</p> <ul style="list-style-type: none"> • Study of the different breeds of rabbits. • Peculiarities of the rabbits' exterior. • Breeding program and rabbit's reproduction. • Selection of the reproducers. • Peculiarities of the reproduction of rabbits. • Techniques of the rabbits' reproduction. • Rabbits' pregnancy and parturition. Intensive use of the females. • Feeds, feeding and treatment of the rabbits. • Physiology of digestion. <p style="text-align: center;">BEES</p> <ul style="list-style-type: none"> • Biologic peculiarities of the Honey bee, <i>Apis mellifera</i> L. • Components of a bees' colony and their role within the colony. Anatomy of the bee. • Copulation of the queen, egg laying, hatching and growing of the working bees. • The organization of a bees' colony during the year. • Honey bee plants. • Care for the bees during the year. • Placing of the beehives in the pasture and the conditions that the pasture should fulfill. • Feeds and feeding of the bee colonies. • Natural and artificial production of the queens. • General information on the main diseases of the bees. • Main pests and enemies of the bees <p style="text-align: center;">SILKWORM</p> <ul style="list-style-type: none"> • Anatomic, physiologic and biologic peculiarities of the silkworm. • Growing techniques of the silkworms.

		<ul style="list-style-type: none"> • Incubation of the cocoon. • Feeds and feeding for the silkworms. • Management methods of the silkworms
10	Module Objectives and/or Basic Concepts	<ul style="list-style-type: none"> • The main breeds, lines and hybrids of rabbits. Their production and reproduction. Biologic peculiarities of the rabbits. Growing systems. Rabbits' management. • Biology of bees' colony. Composition of bees' colony. Anatomy of the bee. Reproduction, growing and activity of bees. Feeds and feeding of bees. Bee management. Diseases of the bees. • The main breeds, lines and hybrids of rabbits. Their production and reproduction. Biologic peculiarities of the rabbits. Growing systems. Rabbits' management. • Biology of bees' colony. Composition of bees' colony. Anatomy of the bee. Reproduction, growing and activity of bees. Feeds and feeding of bees. Bee management. Diseases of the bees.
11	Dual In-Farm/bussiness practice	<p>Main topics of practical training of the subject: <u>Bee & Rabbit Farm Management 89</u></p> <p>Students describe, analysis and reflects (also in form of proposals for improvement) on following topics:</p> <ul style="list-style-type: none"> • Beehive, inventory of the bee park and of beekeepers (beekeepers); • Establishment of a bee farm; • Beebreeding techniques used in the bee farm; • Beefeeding, bee pasture and honey plants; • Techniques for opening and control of the beehive; • Rearing of the queen bee; • Honey quality and safety; • Economic of bee farm; • Technologies of rabbit husbandry and housing systems applied in the rabbit farm; • Rabbit feeding technologies applied in the farm; • Rabbit meat production and quality; • Economy of rabbit farm.
12	Teaching elements	Lectures, seminars, exercises, field work, work in group, intermediate tests
13	Student's obligations	Course attendance 80% of lectures and practices Handling of Course assignments
14	Assessment elements	<p>a. Annual evaluation (40%)</p> <ul style="list-style-type: none"> -Performance on the seminars, exercises, tests) 20% - Project work/Course assignment/ 20%

		b. Final Exam (60%)
15	Literature	<ul style="list-style-type: none"> • Sena.L. Cikël leksionesh: “Mbarështrimi i lepujve”. 2017 • Sena.L. Cikël leksionesh: “Mbarështrimi i Bletëve”. 2017 • Thomo.K, Sena.L, etj Bletaria. 2005 <p>Other teaching literature:</p> <ul style="list-style-type: none"> • Anderson D – Improving queen bee production. 2004 • Clive de Bruyn - Practical Beekeeping, 2003 • Cramp David – A practical manual of beekeeping. 2008 • Delaplane, K.S. 2006. Honey Bees and Beekeeping: A Year in the Life of an Apiary, 3rd Edition. The Georgia Center for Continuing Education, Athens, USA. • Gamberini Angelo. Coniglicoltura 1993 • Ross, C. Natural Beekeeping : Organic Approaches to Modern Apiculture, Ëhite River Junction, London, UK. 2007. • Sammataro D., Avitabile A. 2011. The Beekeeper's Handbook, 4th edition. Cornell University Press, USA. • Sena L – Udhëzues praktik për bletërritësit. 2011 • V. K. Rahmathulla V.K. Management of Climatic Factors for Successful Silkëorm (Bombyx mori L.) Crop and Higher Silk Production: A Revieë Hindaëi Publishing Corporation Psyche. Volume 2012, Article ID 121234, 12 • 4-H Rabbit manual - 2009

PRODUCTS OF THE TERRITORY

No.	Designation	Description
1	Title of module	Products of the territory
2	Lecturer, assistant	Prof. Asoc. Dr. Petrit Dobi
3	Study Programe	Livestock and Animal Products Safety (LAPS)
4	Academic year, Semester	3rnd Year III ; 2nd Semester
5	Compulsory//electives	<i>elective</i>
6	Preliminary knowledge of students	
7	Ratio, study duration	1:1
8	ECTS	3
9	Brief description of program	Students must acquire sufficient knowledge to understand all aspects of the construction cycle of a geographical indication (GI), the registration as well as the structures that manage the geographical indication. At the end of the module, he should be able to understand the qualities of the products and their capacity to develop in GI. He had to understand the difference between a trademark and a GI as well as the differences between GI of different categories. He must understand the mechanisms of building a GI, be able to be involved in the process of building a GI, starting from the identification of the potential product, the actors who can be involved in the construction of a GI. Students must be able to work in the structures that monitor or certify GI after receiving the special training for GI. They must be able to receive tasks in the public or private advisory service by being included in the process of building GI.
10	Module Objectives and/or Basic Concepts	<p><i>BASIC CONCEPTS</i></p> <p>Students must acquire knowledge as well as some practical skills on various aspects of the development and certification cycle and specifically on:</p> <ul style="list-style-type: none"> • What is a geographical indication? Difference between a Geographical Indication and a Trademark? • What are the stages of development in GI? • Product quality and their evidence • How is the territory of GI determined? • How is a GI managed? The management group and its composition • Marketing of GI • GI as a promoter of rural development • GI registration and legal framework
11	Teaching elements	Lectures, seminars, exercises, field work, work in group, intermediate tests
12	Student's obligations	Course attendance 80% of lectures and practices Handling of Course assignments
13	Assessment elements	a. Annual evaluation (40%)

		-Performance on the seminars, exercises, tests) 20% - Project work/Course assignment/ 20% b. Final Exam (60%)
14	Literature	<ul style="list-style-type: none"> • Dobi, P. Leksionet e lendes “Produktet e territorit/Treguesit Gjeografike” 2019 • Other teaching literature: • Dobi, P. Bardhi, R.”Manual per zhvillimin e treguesve gjeografike” Tirane 2016

AGRIBUSINESS MANAGEMENT

No.	Designation	Description
1	Title of module	Agribusiness management
2	Lecturer, assistant	Prof. Assoc. Dr. Ilir Kapaj
3	Study Programe	Livestock and Animal Products Safety (LAPS)
4	Academic year, Semester	3rnd Year III ; 2nd Semester
5	Compulsory//electives	<i>elective</i>
6	Preliminary knowledge of students	
7	Ratio, study duration	1:1
8	ECTS	3
9	Brief description of program	<ul style="list-style-type: none"> Principles of management and of decision-making in agribusiness firms; a) Analysis of the functions of management; b) Their relations and interactions. Procedures of forecasting in agribusiness firms, developing a marketing plan and the role of consumer demand. Elements of the neoclassical theory of production; organizing production using economic principles. Procedures using the break-even analyses and cost controls in making decisions. Analyses of risky operations in agribusiness firms. The basic financial statements for business control; capital budgeting decisions the basic principles and application. The supervision and motivation of employees; staffing the organization.
10	Module Objectives and/or Basic Concepts	<ul style="list-style-type: none"> The students will get knowledge about the agribusiness system, how is it organized and how does it function, and especially: a) what is agribusiness; b). Role of agribusiness in the national economy; c) Role of agribusiness in the agricultural development; d) Main forms of agribusiness organization.
11	Teaching elements	Lectures, seminars, exercises, field work, work in group, intermediate tests
12	Student's obligations	Course attendance 80% of lectures and practices Handling of Course assignments
13	Assessment elements	<p>a. Annual evaluation (40%)</p> <p>-Performance on the seminars, exercises, tests) 20%</p> <p>- Project work/Course assignment/ 20%</p> <p>b. Final Exam (60%)</p>
14	Literature	<ul style="list-style-type: none"> MUSABELLIU.B, KAPAJ.I Drejtım Agrobiznesi, Botimet 'Dita 2000', 2009

		<p>Other teaching literature:</p> <ul style="list-style-type: none"> • “Agribusiness Management”. Steven P. Erikson, Jay T. Akridge, Freddie L. Barnard, W. David Downey, Third Edition, 2002 • “Agribusiness Management”. W. David Downey & Steven P. Erikson, Second Edition, 1987 • “Principles of Agribusiness Management”. James G. Beierlein, Kenneth C. Schneeberger, and Donald D. Osborn, 1995. • “Agribusiness Marketing. The Management Perspective”. James G. Beierlein, Michael W. Woolverton, 5 1991. • “Managerial Economics”. James Mc Guigon, R. Charles Mayer, Frederick H. deb. Harris, Seventh Edition, 1996 • “Agricultural Economics and Agribusiness”. Gail L. Cramer, Clarence W. Jensen, Six Edition
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EQUINE MANAGEMENT

No.	Designation	Description
1	Title of module	Equine Management
2	Lecturer, assistant	Dr. Alma Llambiri
3	Study Programme	Livestock and Animal Products Safety (LAPS)
4	Academic year, Semester	3rd Year III ; 2nd Semester
5	Compulsory//electives	<i>elective</i>
6	Preliminary knowledge of students	
7	Ratio, study duration	1:1
8	ECTS	4
9	Brief description of program	<p>This course is intended to give students basic knowledge for:</p> <ul style="list-style-type: none"> • a) reproductive physiology, training and equine management. • b) to help students develop concepts for managing reproduction of horses, genetic progress, and training of horses, mules and donkey.
10	Module Objectives and/or Basic Concepts	<p>At the end of the semester, students will have knowledge about the following issues:</p> <ul style="list-style-type: none"> • Breeds of horses; popularity of breeds • Horse care and health programs • Gaits of horses • Training horses • Digestive physiology and nutrient requirements of the horse/mule/donkey • Housing and equipment • Nutrition and feeding • The principles and practice of feed rationing for horses/mule/donkeys • Reproduction; breeding horses and care for new-born
11	Dual In-Farm/bussiness practice	<p>Main topics of practical training of the subject: <u>Horse Farm Management</u></p> <p>Students describe, analysis and reflects (also in form of proposals for improvement) on following topics:</p> <ul style="list-style-type: none"> • Feeding and grazing technologies / system used for different horse categories (mares, foals, breeding horses, growing horses, riding horses, working horses); • Technologies of husbandry and housing used in the farm for horse categories; • Breeding methods/techniques used in horse farm; • Reproduction techniques applied in the horse farm; • Monitoring of growth performance parameters oh foals and growing horses; • Training of riding and race horses; • Economic of horse farm;

		<ul style="list-style-type: none"> Evaluation of standards of Animal Care for horse farms.
12	Teaching elements	Lectures, seminars, exercises, field work, work in group, intermediate tests
13	Student's obligations	Course attendance 80% of lectures and practices Handling of Course assignments
14	Assessment elements	<p>a. Annual evaluation (40%)</p> <p>-Performance on the seminars, exercises, tests) 20%</p> <p>- Project work/Course assignment/ 20%</p> <p>b. Final Exam (60%)</p>
15	Literature	Lecture notes, Alma Llambiri

PASTURES AND FORAGE PRODUCTION

No.	Designation	Description
1	Title of module	Pastures and forage production
2	Lecturer, assistant	Prof. Dr. Foto Kashta
3	Study Programe	Livestock and Animal Products Safety (LAPS)
4	Academic year, Semester	3rnd Year III ; 2nd Semester
5	Compulsory//electives	<i>elective</i>
6	Preliminary knowledge of students	
7	Ratio, study duration	2:1
8	ECTS	4
9	Brief description of program	<p>Through the module program, students will find the necessary information on a number of issues related to:</p> <ul style="list-style-type: none"> • General considerations for Fodder Plants, Meadows and Pastures, their grouping. how their growth rates and productivity are affected by environmental and cultivation factors • Economic importance, origin and spread, botanical characteristics and biological features (plant cycle and developmental stages) • Suitability and requirements to environmental conditions (temperature, humidity, light, soil, nutrients) • Cultivation technology according to the production destination, (place in agricultural circulations, conventional preparation of land and planting bed and current trends, fertilizing, selection of cultivars and hybrids, planting services during vegetation (leaving, rolling, irrigation, crop fertilizing, etc.) • Main diseases and pests, preventive measures and their fight • Utilization of fodder production (grazing, mowing, silage, dry grass and other methods of preparation and storage) • At the end of the module "Pastures and fodder production"), students will acquire the skills to • Identification of different fodder plants, through morphological differences of plant organs, knowledge of their botanical and biological characteristics and their requirements for growth factors (climate, soil, agrotechnical) • The connection of the above characteristics with the technology of cultivation, with the aim of maximum compliance of biological requirements with this technology. • Knowledge of production limiting factors (biotic and abiotic stresses) and measures to mitigate them to

		<p>ensure high fodder production and good food quality</p> <ul style="list-style-type: none"> • Knowledge of the basic principles of cultivation technology and the ability to adapt the cultivation technology of fodder plants, meadows and pastures to the concrete conditions of the basic areas of their cultivation in our country.
10	Module Objectives and/or Basic Concepts	The mission of the program is to expand knowledge on the management of fodder plants and the use of scientific knowledge to disseminate information to students, to increase the efficiency of fodder production and improve the quality of this production, through the impact of agrotechnical measures.
11	Teaching elements	Lectures, seminars, exercises, field work, work in group, intermediate tests
12	Student's obligations	Course attendance 80% of lectures and practices Handling of Course assignments
13	Assessment elements	<p>a. Annual evaluation (40%)</p> <p>-Performance on the seminars, exercises, tests) 20%</p> <p>- Project work/Course assignment/ 20%</p> <p>b. Final Exam (60%)</p>
14	Literature	<ul style="list-style-type: none"> • Cikli i leksioneve te printuara (F. Kashta 2015) • • Leksione te pergatitura ne Powerpoint (F. Kashta 2015) <p>Other teaching literature:</p> <ul style="list-style-type: none"> • • Fitoteknia Grup autorësh Tiranë 1987 • • Nesturi D, Shundi A. Bimët foragjere, pjesa e parë dhe e dytë Tiranë 1989 • • Nesturi D. Jonxha dhe tërfilet shumëvjeçare Tiranë 1995 • • Rroco E. Kullotat dhe bimesia e tyre Tirane 2009 • • Rroco E. Sorgumi Monografi 2004

LEGISLATION AND STANDARDS IN ANIMAL HUSBANDRY

N o.	Designation	Description
1	Title of module	Legislation and Standards in Animal Husbandry
2	Lecturer, assistant	Prof. Dr. Ylli Bicoku
3	Study Programe	Livestock and Animal Products Safety (LAPS)
4	Academic year, Semester	3rnd Year III ; 2nd Semester
5	Compulsory//electives	<i>elective</i>
6	Preliminary knowledge of students	
7	Ratio, study duration	1:1
8	ECTS	3
9	Brief description of program	This course is focused on advancing knowledge about legislation in agriculture and mainly in animal husbandry, how laws and bylaws in animal husbandry are drafted. Who initiates the preparation of laws and bylaws? What are the stages from drafting to approval of laws and bylaws in Albania? What are animal production standards in general, and National Minimum Standards the field of livestock? National Minimum Standards in accordance with EU policies.
10	Module Objectives and/or Basic Concepts	<p>Its purpose is to enable students to distinguish between laws and bylaws, ethical standards and rules.</p> <p>The objective of this module is that at the end of it, the student will be able to understand how laws, by-laws, standardized acts are drafted and the importance of their implementation.</p> <p>BASIC CONCEPTS</p> <ul style="list-style-type: none"> • History of law and constitution. • Laws in Albania and the EU. • Why Laws are needed. • Functions of laws. • Types of laws and their preparation • Legislation in Animal Husbandry • National Minimum Standards in the field of livestock • EU standards in the field of animal husbandry
11	Teaching elements	Lectures, seminars, exercises, work in group, intermediate tests
12	Student's obligations	Course attendance 80% of lectures and practices Handling of Course assignments
13	Assessment elements	<p>a. Annual evaluation (40%)</p> <p>-Performance on the seminars, exercises, tests) 20%</p> <p>- Project work/Course assignment/ 20%</p> <p>b. Final Exam (60%)</p>

14	Literature	<ul style="list-style-type: none"> • Cikel leksionesh “legjislacioni, Standarded dhe Bioetika në Blegtori”, Ylli Biçoku <p>Other teaching literature:</p> <ul style="list-style-type: none"> • Lolas, Fernando (2008). "Bioethics and animal research: A personal perspective and a note on the contribution of Fritz Jahr". Biological Research (Santiago). 41(1): 119– 23. doi:10.4067/S0716-97602008000100013. Archived from the original on 1 November 2013. Retrieved 15 January 2010. • Leo Pessini (2013): At the origins of bioethics: from Potter's bioethical creed to Fritz Jahr's bioethical imperative. http://revistabioetica.cfm.org.br/index.php/revista_bioetica/article/viewFile/784/873 • Ivana Zagorac (2011): Fritz Jahr's Bioethical Imperative. Preliminary communication UDK 17.023:608.1(091)Jahr, F. Received March 28th, 2011. https://hrcak.srce.hr/file/107905. • George Khushf (2004): Handbook of Bioethics -Taking Stock of the Field From a Philosophical Perspective. KLUWER ACADEMIC PUBLISHERS-NEW YORK, BOSTON, DORDRECHT, LONDON, MOSCOW, 2004 • Torsten J. Selck (2006): Preferences and Procedures-European Union Legislative Decision Making. SPRINGER • Ligji nr. 9817/2007 “Për bujqësinë dhe zhvillimin rural”, Fletorja Zyrtare nr. 147/2007; • Ligji nr. 10465/2011, “Për shërbimin veterinar në Republikën e Shqipërisë”, Fletorja Zyrtare nr. 143/2011, (ndryshuar me Ligjin nr. 70/2013); • Ligji nr. 9426/2005 “Për mbarështimin e blegtorisë”, Fletorja Zyrtare nr. 78/2005 (ndryshuar me Ligjin nr. 9864/2008; Ligji nr. 10137/2009; Ligji nr. 72/2013); • Ligji nr. 7802/2002 “Për identifikimin dhe regjistrimin e kafshëve në ferma”, Fletorja Zyrtare nr. 47/2000,(ndryshuar me Ligjin n.. 66/2013); • VKM nr. 320/2008 “Për sistemin e identifikimit të kafshëve dhe regjistrimin e fermave”, Fletorja Zyrtare nr. 49/2008,(ndryshuar me VKM nr. 198/2009 dhe VKM nr. 381/2009); • VKM nr. 1132/2008 “Për miratimin e rregullave të grumbullimit të qumështit të papërpunuar”, Fletorja Zyrtare nr. 134/2008; • Rregullore “Për prodhimin, përpunimin, shpërndarjen dhe importin e produkteve me origjinë shtazore për konsum njerëzor” • Rregullore nr. 3/2006 “Për higjienën e produkteve ushqimore”, Aneksi 1 “Prodhimi Primar Pjesa A: Kushtet e përgjithshme të higjienës në subjektet e prodhimit primar”;
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LEGISLATION, ANALYTICS AND FEED SAFETY

No.	Designation	Description
1	Title of module	LEGISLATION, ANALYTICS AND FEED SAFETY
2	Lecturer, assistant	Prof. Enkelejda Emiri-Sallaku, Prof. Etleva Deila
3	Study Programe	Livestock and Animal Products Safety (LAPS)
4	Academic year, Semester	2nd Year II ; 2nd semester
5	Compulsory//electives	<i>elective</i>
6	Preliminary knowledge of students	Feed processing, quality and safety
7	Ratio, study duration	1:1
8	ECTS	3
9	Brief description of program	<p>Students will find in this syllabus the necessary information for a series of issues related to:</p> <ol style="list-style-type: none"> 1. Basic Knowledge of national and international legislation as well as institutional organization on the safety and quality of feed and livestock farm. 2. Basic knowledge of analytics and basic evaluation methods of animal and fish feed. 3. Weende and Van Soest classical analytical chemistry methods 4. Near-infrared reflectance spectroscopy (NIRS) method for feed 5. Physical and microbiological methods for feed safety evaluation.
10	Module Objectives and/or Basic Concepts	<p>The aim of the module: Students should acquire the skills and necessary sustainable knowledge, especially practical skills, very important for the farmer and assistant specialist, about the safety of feeds and feeding.</p> <p>Objectives:</p> <ul style="list-style-type: none"> ✓ .Students acquire knowledge about national and international legislation on feed safety for livestock and aquaculture. ✓ Students aquire practical skills in monitoring feed quality and safety in livestock and aquaculture farms. ✓ Students acquire practical and theoretical skills in taking samples for different types of feed, their initial manipulation and transportation to the laboratory and sample preparation for analysis. ✓ Students acquire skills in the application of basic methods of sensory, chemical and nutritional evaluations of feeds in livestock and aquaculture farms.
12	Teaching elements	Lectures, laboratory, work in group
13	Student's obligations	Course attendance 80% of lectures and practices Handling of Course assignments
14	Assessment elements	<p>g. Annual evaluation (40%)</p> <ul style="list-style-type: none"> -Performance on the seminars, exercises, tests) 10% - Project work/Course assignment/ 30%

		h. Final Exam (60%)
15	Literature	<ul style="list-style-type: none"> • Sallaku, E., Delia, E: Cikël leksionesh për modulin • AOAC 2012 Official Methods of Analysis. • Ensinger, et. al. (1991): Feeds & Nutrition. • Jeroch, H., Flachowsky, G., Weissbach, F. (1993) Futtermittelkunde. • Luning, P.A., Devlieghere, F. & Verhé, R. (2006): Safety in the agri-food chain