

Annotation of the compulsory educational component «Higher Mathematics»

Subjects	Higher Mathematics
Teacher	Drozdenko Vitalii Oleksandrovych, PhD / Candidate of Physical and Mathematical Sciences, Associate Professor of the Department of Higher Mathematics and Physics
Course and semester in which the discipline is planned to be studied	1 st year, 2 nd semester
Faculties whose students are invited to study the discipline	Biological-technological
List of competencies and relevant learning outcomes provided by the discipline	<p>According to the requirements of the educational-professional program "Technologies of production and processing of livestock products" applicants must acquire the ability to obtain the following competencies:</p> <p>GC 3 (general competence). Ability to apply knowledge in practical situations.</p> <p>GC 5. Ability to adopt and act in new situations.</p> <p>GC 6. Ability to work in a team and skill of interpersonal cooperation.</p> <p>GC 7. Ability to evaluate and provide quality of the performed works.</p> <p>GC 9. Ability to search, process and analyze information from different sources.</p> <p>PC 1 (professional competence). Ability to use professional knowledge in the areas of production and processing of animal husbandry products as well as for the effective running of business.</p> <p>PC 4. Ability to form forage rations for different species and groups of farm animals as well as arranging of their normalized feeding taking into account actual financial and resource abilities.</p> <p>PC 12. Ability to analyze productive activity of the farms, to perform primary counting of the material goods, main labor sources as well as payment methods.</p> <p>The result of studying the discipline is the students' acquisition of such knowledge and skills:</p> <ol style="list-style-type: none"> 1. Ability to fulfill functional obligations, regardless of influence of different factors and productive situations. 2. Ability to arrange team work of the hired labors. 3. Ensure quality of the performed works. 4. Ability to perform searching, processing and generalization of the information with the use of modern informational technologies. 5. Ability to choose rational technologies of gathering, production and storage of forage. 6. Ability to create optimal hosting conditions for animals as well as microclimate of premises. 7. Ability to implement and use practically scientifically reasoned production technologies and processing of the animal husbandry products and goods. 8. Ability to develop and manage effectively technological processes for husbandry products and goods.

Description of the discipline	
Prerequisites required for the study of the discipline	The compulsory educational component "Higher Mathematics" is based on the knowledge of such disciplines as "Mathematics" and "Informatics", which were studied in secondary school.
The maximum number of students who can study at the same time	65 students
Topics for the auditorial lessons	<p>Topics of the Lectures:</p> <ol style="list-style-type: none"> 1. Academic Ethics. Matrixes and matrix operations. 2. Determinants, minors, algebraic conjugates. 3. Systems of linear equations. Solving of the professionally oriented problems with the use of the linear algebra techniques. 4. Cartesian coordinates on planes and 3D-spaces. 5. Academic Ethics. Matrixes and matrix operations. 6. Determinants, minors, algebraic conjugates. 7. Systems of linear equations. Solving of the professionally oriented problems with the use of the linear algebra techniques. 8. Cartesian coordinates on planes and 3D-spaces. Straight lines and planes in 3D-spaces. 9. Second order plane curves. 10. Function. Main elementary functions. Limit of a function. Continuous and discontinuous functions. 11. Main integration rules and formulas. Special cases of differentiability. Application of the derivatives to investigation of function properties. 12. Antiderivative and undefined integral. Main integration methods. Integrations of the fractionally rational functions. Integration of some trigonometrical functions. 13. Defined integral. 14. Application of the defined integral. 15. Main theorems of probability theory. 16. Limit theorems of probability theory. 17. Discrete and continuous random variables and their characteristics. 18. Statistical (point and interval) estimation of distribution parameters. Elements of correlation theory <p>.</p> <p>Topics for the Seminar Lessons</p> <ol style="list-style-type: none"> 1. Matrixes and matrix operations. 2. Determinants. Minors. Algebraic conjugates. 3. Systems of linear equations. Solving of the professionally oriented problems with the use of the linear algebra techniques. 4. Cartesian coordinates on planes and 3D-spaces. Straight lines and planes in 3D-spaces. 5. Second order curves on planes. 6. Function. Main elementary functions. Limit of a function. Continuity and discontinuity of a function. 7. Main differentiation rules and formulas. Particular cases of differentiability. Application of the derivative to function analysis. 8. Undefined integral. Main integration rules. Integration of fractionally rational functions. Integration of some trigonometrical functions.

	<ol style="list-style-type: none">9. Defined integral.10. Application of the defined integrals.11. Main theorems of probability theory.12. Limit theorems of probability theory.13. Discrete and continuous random variables and their properties.14. Statistical (ping and interval) estimation of distribution parameters. Elements of correlation theory.
Teaching languages	Ukrainian, English