Annotation of compulsory educational component «Animal breeding»

Academic discipline	Animal breeding
Tutor	Stavetska Ruslana Volodymyrivna, Dr of agricultural sciences, associate professor, department of genetics, breeding and selection of animals
Courses and semesters, when the discipline is planning to study	2, 3 courses (bachelor's degree) 4, 5 semesters
Faculties whose students are invited to study discipline	Biological-technological faculty
List of competencies and learning-related outcomes that discipline provides	According to the requirements of the educational-professional program "Technology of production and processing of livestock products" applicants must acquire the ability to obtain the following competencies: GC 3 (general competence). Ability to apply knowledge in practical situations. GC 4. Knowledge and understanding of the subject area and understanding of professional activity. GC 7. Ability to evaluate and ensure the quality of work performed. PC 2 (professional competence). The ability to use of modern knowledge about methods of reproduction, patterns of individual development and breeding of animals for effective professional activity in the field of animal husbandry. The result of studying the discipline is the students' acquisition of such knowledge and skills: • to ensure compliance with the parameters and control the technological processes of production and processing of livestock products (to organize and control the zootechnical and pedigree records; to have the skills to plan and organize of breeding in the herd and control the stages of its implementation); • to train employees of modern and new components of technological processes in the area of production and processing of livestock products (be able to make an informed choice about the breeding and selection in a herd; mating schemes; to use methods of purebred selection, various types of cross-breeding and hybridization, inbreeding and outbreeding); • to ensure the quality of work performed (to have the modern skills to plan and organize of breeding); • to search, process and generalize information with the use of modern information technologies (be able to use special computer programs to conduct breeding work in the herd: Orsek, ALPRO i DELPRO, Uniform-Agri, Dairy Plan.); • to apply knowledge of reproduction and breeding of farm animals for effective economic activity of the enterprise (to conduct an effective assessment of animals by origin (pedigrees), assessment by own performance, daughter performance and half-sibs; to determine the breeding value of animals using different methods; find the best genotypes among the phenotypes in herds, lines / families or breed); • to introduce and use in practice scientifically substantiated technologies of production and processing of livestock products (to organize targeted growth of young animals; to use modern breeding methods); • to develop and effectively manage technological processes of processing livestock products (to conduct effective breeding and mating; to create of highly productive herd and economically profitable animals; to conduct effective selection, to make breeding plans);

	• to apply international and national standards and practices in professional activities (to evaluate the exterior of animals using Ukrainian and international methods; to know the features of creating of the main selection indices in Ukraine for different types of farm animals and be able to apply them in practice; to know the current trends of animal breeding and selection in Ukraine and in the world).

Description of the discipline

Preconditions necessary for the study of discipline	Compulsory educational component «Animal breeding» is based on knowledge of such disciplines as «Animal physiology», «Animal morphology», «Biochemistry in animal husbandry», «Genetics with biometrics», «Animal feeding», «Animal hygiene and welfare», «Animal reproduction technology», which were studied in previous semesters.
Maximum number of students who can study simultaneously	55 students
Lesson plans	**Lectures** 1. The definition and meaning of animal breeding and selection, their connection with other disciplines. The main stages of formation and development of the theory and practice of farm animal breeding. 2. Classification of farm animals. Time, place, sequence of taming and domestication of different species of animals. 3. Breed definition and meaning. Breed as a result of evolutionary process and human activities. 4. Ontogeny. 5. Constitution, the definition and meaning. 6. Exterior, the definition and meaning. 7. Interior, the definition and meaning. 8. Productivity of agricultural animals. 9. Assessment of agricultural animals' productivity. 10. Selection of agricultural animals. Theoretical and general selection. Definition and meaning of natural selection. Forms of artificial selection. The organization of animals' selection. 11. Animals mating. Theoretical bases, basic principles and tasks of mating. Forms of mating. 12. Methods of animal breeding. Classification of breeding methods of farm animals. Purebred selection: tasks, main methods; the ways to achieve progress in purebred selection. 13. Crossbreeding. Examples of crossbreeding systems. 14. Interspecies hybridization of animals: purpose, history, genetic meaning. 15. Animal breeding strategies and management. 16. Large-scale breeding in animal husbandry. **Practical classes** 1. Methods of estimation of animals growth and development. 2. Estimation of animals exterior and constitution. Defects of animal exterior. 3. Methods of estimation of exterior parameters; farm animal measurement. 4. Dairy production, registration techniques and evaluation. 5. Meat production, registration techniques and evaluation. 6. Assessment of poultry egg production. 7. Assessment of wool production. 8. Assessment of the reproductive performance of sows. 9. Assessment of working horses productivity. 10. Assessment of reproductive performance of dairy cattle.

	11. Estimation of the breeding value of animals by origin.
	12. Estimation of the breeding value of animals by its own phenotype.
	13. Estimation of the breeding value of different species of animals by the offspring quality. Calculating of the selection effect in the herd.
	14. Creation of animals pedigree.
	16. Methods of animal identification.
	17. Mating schemes.
	18. Calculation of degree of inbreeding (according to Poosh-Shaporuzh), the coefficient of inbreeding (Rait-Kislovsky) and the coefficient of genetic identification (Rait).
	19. Purebred selection. Estimation of the breeding value of animal lines and families.
	20. Crossbreeding. Practical examples of crossbreeding systems. Interspecies hybridization of animals.
Teaching language	Ukrainian, English