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Federal State Autonomous Educational Institution for Higher Education
PEOPLES' FRIENDSHIP UNIVERSITY OF RUSSIA
Agrarian and Technological Institute

WORKING COURSE SYLLABUS

Processing technology for livestock products

Recommended by the Methodological Council for the Education Field:

36.05.01 Veterinary medicine

1. GOALS AND OBJECTIVES OF THE DISCIPLINE

The aim of the mastering the discipline "**Processing technology for livestock products**" is to develop students' theoretical knowledge and practical skills on technologies for processing basic livestock products obtained from meat, milk at enterprises for processing products and raw materials of animal origin and ensuring the release of good-quality products.

2. REQUIREMENTS FOR THE RESULTS OF MASTERING THE DISCIPLINE

The development of the discipline "**Processing technology for livestock products**" is aimed at creating the following competencies (parts of competencies) for students:

Table 2.1. List of competencies formed by students during the development of the discipline (results of the development of the discipline)

| Code | Competence | Indicators of competence accomplishment (within the discipline) |
|-------|---|--|
| GPC-3 | The ability to carry out and improve professional activities in accordance with regulatory legal acts in the field of agro-industrial complex. | GPC-3.1 He knows modern legal norms, both state and international, regulating activities in the field of veterinary medicine, veterinary and sanitary expertise and agro-industrial complex. |
| | | GPC-3.2 He has the skills to update legal information, including in the field of agro-industrial complex. |
| | | GPC-3.3 Carries out activities in accordance with regulatory legal acts in the field of agro-industrial complex, as well as in the field of veterinary medicine and veterinary and sanitary expertise. |
| GPC-4 | Ability to use in professional activity methods of solving problems using modern equipment in the development of new technologies and to use modern professional methodology for conducting experimental research and interpreting their results. | GPC-4.1 Knows the conceptual and methodological apparatus of the basic natural sciences at a level sufficient for full professional activity at the modern level |
| | | GPC-4.2 Knows how to solve problems using modern equipment |
| | | GPC-4.3 Willing to use modern methodology in designing and conducting experimental research |
| | | GPC-4.4 Uses modern professional methodology in interpreting research results |

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|--------|---|---|
| GPC-6 | The ability to analyze, identify and assess the danger of the risk of the occurrence and spread of diseases. | GPC-6.1 Has knowledge in the field of etiology and pathogenesis of animal diseases of different species. |
| | | GPC-6.2 Has the skills to diagnose non-infectious, infectious and invasive diseases, identify pathogens of infectious and invasive diseases in animals. |
| | | GPC-6.3 Knows the patterns of occurrence and spread of diseases in animal populations, factors predisposing to illnesses and causes of possible complications. |
| PC -22 | Ability to organize measures to protect the organization from the introduction of infectious and invasive diseases in accordance with the plan of antiepidemiological measures. | PC -22.1 He is able to assess the epizootic state of an organization (territory), identify risks and possible causes of epizootic foci, as well as factors affecting their spread in specific organizations, territories. |
| | | PC-22.2 Able to choose and apply the most effective measures to protect the organization from the introduction of infectious and invasive diseases. |
| | | PC-22.3 He is able to carry out operational control of the effectiveness of the activities carried out. |

3. COURSE IN HIGHER EDUCATION

The discipline "**Processing technology for livestock products**" refers to the mandatory part of block B1 of the Educational Program of Higher Education.

As part of the Educational Program of Higher Education, students also master other disciplines and /or practices that contribute to achieving the planned results of mastering the discipline "**Processing technology for livestock products**".

Table 3.1. List of Higher Education Program components disciplines that contribute to expected learning outcomes

| Competence code | Competence | Previous Disciplines (Modules) | Subsequent Disciplines (Modules) |
|-----------------|--|--|---|
| GPC-3 | The ability to carry out and improve professional activities in accordance with regulatory legal acts in the field of agro-industrial complex. | Jurisprudence Life safety Economics and organization of agricultural production Breeding with the | Veterinary deontology Laboratory diagnostics of infectious and invasive diseases Organization of state veterinary supervision Veterinary and |

| | | | |
|-------|---|---|---|
| | | basics of private animal husbandry Veterinary pharmacology Toxicology Parasitology and invasive diseases Epizootology and infectious diseases Organization of veterinary affairs General and Veterinary Ecology Veterinary sanitation | industrial laboratories with design basics Career management Basics of social and legal knowledge |
| GPC-4 | Ability to use in professional activity methods of solving problems using modern equipment in the development of new technologies and to use modern professional methodology for conducting experimental research and interpreting their results. | Inorganic and analytical chemistry Organic chemistry Physical and colloidal chemistry Biological chemistry Biological physics Computer science Cytology, Histology and Embryology Veterinary Microbiology and Mycology Virology and biotechnology Physiology and ethology of animals Breeding with the basics of private animal husbandry Pathological physiology Pathological anatomy and forensic veterinary examination Veterinary radiobiology Clinical diagnostics Operative surgery with topographic anatomy Instrumental | Diseases of bees and fish Space technologies at the service of the agro-industrial complex Visual storytelling: from simple ideas to multimedia projects Medicinal and poisonous plants Fodder plants The basics of intellectual work Personality psychology and professional self-determination Clinical laboratory diagnostics Laboratory diagnostics of infectious and invasive diseases Biometrics Horse diseases Diseases of Productive Animals Diseases of small pets Diseases of small pets Ophthalmology Dentistry Animal disease therapy Anesthesiology, resuscitation and intensive care |

| | | | |
|-------|---|---|--|
| | | <p>diagnostic methods Toxicology Obstetrics, gynecology and andrology Internal non-communicable diseases General and private surgery Parasitology and invasive diseases Epizootology and infectious diseases Mathematics Immunology Veterinary sanitation</p> | <p>Reconstructive surgery</p> |
| GPC-6 | <p>The ability to analyze, identify and assess the danger of the risk of the occurrence and spread of diseases.</p> | <p>Biology with the basics of ecology Life safety Veterinary Microbiology and Mycology Virology and biotechnology Hygiene of animals Feeding animals with the basics of forage production Pathological anatomy and forensic veterinary examination Veterinary radiobiology Clinical diagnostics Instrumental diagnostic methods Toxicology Obstetrics, gynecology and andrology Internal non-communicable diseases General and private surgery</p> | <p>Diseases of bees and fish Space technologies at the service of the agro-industrial complex Medicinal and poisonous plants Fodder plants Clinical laboratory diagnostics Laboratory diagnostics of infectious and invasive diseases Organization of state veterinary supervision Horse diseases Diseases of Productive Animals Diseases of small pets Diseases of small pets Ophthalmology Dentistry Anesthesiology, resuscitation and intensive care</p> |

| | | | |
|--------|--|---|---|
| | | Parasitology and invasive diseases Epizootology and infectious diseases Veterinary and sanitary examination Organization of veterinary affairs Forensic veterinary medicine and animal necropsy Introduction to the specialty General and Veterinary Ecology Veterinary sanitation | |
| PC -22 | Ability to organize measures to protect the organization from the introduction of infectious and invasive diseases in accordance with the plan of antiepzootic measures. | Life safety Veterinary Microbiology and Mycology Virology and biotechnology Hygiene of animals Veterinary pharmacology Parasitology and invasive diseases Epizootology and infectious diseases Organization of veterinary affairs General and Veterinary Ecology Veterinary sanitation | Diseases of bees and fish Laboratory diagnostics of infectious and invasive diseases Organization of state veterinary supervision |

4. COURSE WORKLOAD AND TRAINING ACTIVITIES

Course workload of the discipline "**Processing technology for livestock products**" is 3 credits.

Table 4.1. Types of academic activities during the period of the HE program mastering for **full-time** study

| Types of academic activities | HOURS | Semesters | | | |
|------------------------------|-------|-----------|---|---|---|
| | | 7 | - | - | - |
| | | | | | |

| | | | | | | |
|--|---------------|------------|------------|---|---|---|
| Contact academic hours | | 54 | 54 | - | - | - |
| including | | | | | | |
| Lectures | | 18 | 18 | - | - | - |
| Lab work | | 36 | 36 | - | - | - |
| Seminars (workshops/tutorials) | | - | - | - | - | - |
| Self-study | | 46 | 46 | - | - | - |
| Evaluation and assessment (exam/pass/fail grading) | | 8 | 8 | - | - | - |
| Course workload | Academic hour | 108 | 108 | - | - | - |
| | Credit unit | 3 | 3 | - | - | - |

Table 4.2. Types of academic activities during the period of the HE program mastering for ***part-time*** study

| Types of academic activities | HOURS | Semesters | | | | |
|--|---------------|------------|------------|---|---|---|
| | | 8 | - | - | - | |
| Contact academic hours | 18 | 18 | - | - | - | |
| including | | | | | | |
| Lectures | - | - | - | - | - | |
| Lab work | 18 | 18 | - | - | - | |
| Seminars (workshops/tutorials) | - | - | - | - | - | |
| Self-study | 80 | 80 | - | - | - | |
| Evaluation and assessment (exam/pass/fail grading) | 10 | 10 | - | - | - | |
| Course workload | Academic hour | 108 | 108 | - | - | - |
| | Credit unit | 3 | 3 | - | - | - |

5. CONTENT OF THE DISCIPLINE

Table 5.1 Content of the discipline (module) by type of academic work

| Name of the discipline section | Content of the section (topics) | Types of academic activities |
|---|--|------------------------------|
| Section 1. Meat production in the world and in Russia. History of the meat industry | Topic 1.1 Meat production by animal species and continent. | Lectures, Lab work |
| | Topic 1.2 Development of the meat industry in the 19th and 21st centuries. | Lectures, Lab work |
| Section 2. Types of meat processing plants | Topic 2.1 Sanitary and economic value of animal processing. | Lectures, Lab work |
| | Topic 2.2 Meat processing plants, slaughterhouses, poultry | Lectures, Lab work |

| | | |
|--|---|--------------------|
| | slaughterhouses. | |
| Section 3. Preparing animals for slaughter | Topic 3.1 Delivery of slaughter animals to meat processing plants. | Lectures, Lab work |
| | Topic 3.2 Acceptance and maintenance of livestock, poultry and rabbits at meat industry enterprises. | Lectures, Lab work |
| Section 4. Slaughter of animals | Topic 4.1. Stunning, exsanguination and collection of food blood, skinning, processing of pork carcasses in the skin. | Lectures, Lab work |
| | Topic 4.2. Removing internal organs, sawing carcasses, veterinary and sanitary control. | Lectures, Lab work |
| | Topic 4.3. Processing of poultry and rabbits. | Lectures, Lab work |
| Section 5. Commodity valuation and branding of carcasses | Topic 5.1 Categories of fatness of meat of cattle, small cattle, pigs, horses, etc. | Lectures, Lab work |
| Section 6. By-product processing technology | Topic 6.1 Technology for processing offal: wool, meat and bone, pulp, mucous. | Lectures, Lab work |
| Section 7. Canning meat | Topic 7.1 Principles and methods of preserving meat. | Lectures, Lab work |
| | Topic 7.2 Preserving meat with low and high temperatures, chemical means. | Lectures, Lab work |
| | Topic 7.3 Smoking meat products. | Lectures, Lab work |
| Section 8. Morphological composition of carcasses | Topic 8.1 The essence and indicators of product quality. | Lectures, Lab work |
| | Topic 8.2 Product properties. | Lectures, Lab work |
| | Topic 8.3 Methods for determining the quality of products. | Lectures, Lab work |
| Section 9. Standardization of animal slaughter products | Topic 9.1 The essence of standardization. GOSTs. | Lectures, Lab work |
| | Topic 9.2 Standardization of meat and meat products. | Lectures, Lab work |
| | Topic 9.3 Standardization of milk and dairy products. | Lectures, Lab work |
| | Topic 9.4 Standardization of eggs. | Lectures, Lab work |
| | Topic 9.5 Standardization of honey. | Lectures, Lab work |

6. CLASSROOM INFRASTRUCTURE AND TECHNOLOGY SUPPORT REQUIREMENTS

Table 6.1. Material and technical support of the discipline

| <i>Classroom for Academic Activity Type</i> | <i>Equipping the classroom</i> | Specialized educational/laboratory equipment, software and materials for the development of the discipline (if necessary) |
|---|---|--|
| Lecture | An auditorium for conducting lecture-type classes, equipped with a set of specialized furniture; a board (screen) and technical means of multimedia presentations. | - |
| Laboratory | An auditorium for laboratory work, individual consultations, routine monitoring and interim certification, equipped with a set of specialized furniture and equipment. | - |
| Self-studies | An auditorium for independent work of students (can be used for seminars and consultations), equipped with a set of specialized furniture and computers with access to an electronic information and educational environment. | - |

7. RECOMMENDED SOURCES FOR COURSE STUDIES

Main reading:

1. Lyubimov A.I. Workshop on the production of livestock products. - 1st ed. - St. Petersburg: Lan', 2014. - 192 c.
2. Kiselev L.Yu. Fundamentals of production technology and primary processing of livestock products. - 1st ed. - St. Petersburg: Lan', 2013. - 448 c.
3. Iskhakov R.S. Scientific and practical substantiation of intensification of beef production with the rational use of genetic potential of cattle : a monograph / R.S. Iskhakov, Kh. - SPb. : Lan Publishing House, 2018. - 284 c. - (Textbooks for universities. Special literature). - ISBN 978-5-8114-2826-7. http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn_FindDoc&id=464880&idb=0

Additional Reading:

1. Mishanin Y.F. Biotechnology rational processing of animal raw materials [Electronic resource] : Tutorial / Y.F. Mishanin. - SPb. Lan' Publisher, 2017. - 720 c. - (Textbooks for universities. Special literature). - ISBN 978-5-8114-2562-4. http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn_FindDoc&id=464925&idb=0

[b=0](#)

2. Kobtsev M.F., Ragimov G.I., Ivanova O.A. Practicum on cattle breeding and technology of production of milk and beef. - 1st ed. - St. Petersburg: Lan', 2016. - 192 c.
3. Standardization, technology of processing and storage of livestock products [Electronic resource] : Tutorial / G.S. Sharafutdinov [et al.] - 3rd ed., stern. - SPb. : Lan Publishing House, 2016. - 624 c. - (Textbooks for universities. Special literature). - ISBN 978-5-8114-1306-5. http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn_FindDoc&id=465081&id
4. Pronin V.V. Technology of primary processing of livestock products [Electronic resource] : Tutorial / V.V. Pronin, S.P. Fisenko, I.A. Mazilkin. - SPb. : Lan' Publisher, 2013. - 176 c. - (Textbooks for Universities. Special literature). - ISBN 978-5-8114-1452-9.

Resources of the Internet information and telecommunication network:

1. Electronic library system of RUDN and third-party Electronic library systems to which university students have access on the basis of concluded contracts:

- Electronic library system of RUDN - ELS RUDN <http://lib.rudn.ru/MegaPro/Web>
- ELS "University Library online" <http://www.biblioclub.ru>
- ELS Yurayt <http://www.biblio-online.ru>
- ELS "Student Consultant" www.studentlibrary.ru
- ELS "Lan" <http://e.lanbook.com/>
- ELS "Trinity Bridge" <http://www.trmost.com/>

2. Databases and search engines:

- electronic fund of legal and regulatory and technical documentation <http://docs.cntd.ru/>
- search engine Yandex <https://www.yandex.ru/>
- search engine Google <https://www.google.ru/>
- abstract database SCOPUS <http://www.elsevierscience.ru/products/scopus/>

Educational and methodological materials for independent work of students during the development of the discipline/ module*:

1. A course of lectures on the discipline "**Processing technology for livestock products**".
2. Laboratory workshop on the discipline "**Processing technology for livestock products**".

* - All educational and methodological materials for independent work of students are placed in accordance with the current procedure on the discipline page in the **Telecommunication educational and Information System!**

8. MID-TERM ASSESSMENT

Evaluation materials and a point-rating system* for assessing the level of competence formation (part of competencies) based on the results of mastering the discipline "**Processing technology for livestock products**" are presented in the Appendix to this Work Program of the discipline.

* - Assessment Materials and a Point Rating System are formed based on the requirements of the relevant local regulatory act of the RUDN.

DEVELOPER:

Associate Professor of the Department of Veterinary
Medicine

Position, Basic curriculum

Signature

Nikitchenko V.E.

Full name.

HEAD OF THE DEPARTMENT:

Department of Veterinary Medicine

Name Basic Curriculum

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HEAD OF THE HIGHER EDUCATION PROGRAM:

Director of the Department of Veterinary Medicine

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