# SEMESTER COURSE PLAN

**ANIMAL PHYSIOLOGY COURSE**
**(23I01110303)**

**TEACHING TEAM :**


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BACHELOR PROGRAMME IN ANIMAL HUSBANDRY
FACULTY OF ANIMAL SCIENCE
HASANUDDIN UNIVERSITY
MAKASSAR
2025

**BACHELOR PROGRAMME IN ANIMAL HUSBANDRY**
**FACULTY OF ANIMAL SCIENCE**
**HASANUDDIN UNIVERSITY**

## Vision

Vision of the study program :
Becoming an international standard in livestock education provider based on the Indonesian Maritime Continent

## Vision Strategic

In accordance with the vision, mission, and objectives that have been set, the Animal Husbandry Study Program of the Faculty of Animal Science sets the following objectives to be achieved:

a. Improving the quality of learning implementation that is in line with the needs of industry and society based on research and international standards;
b. Creating networks and partnerships in the development of Animal Husbandry science and technology and its utilization in the implementation of learning;
c. Producing graduates who have character, vision, creativity and innovation in the field of animal husbandry science and technology with an entrepreneurial perspective.

## Mission

The mission carried out in the implementation of the Bachelor of Animal Husbandry Study Program, Faculty of Animal Husbandry, Hasanuddin University is

1) Organizing quality learning to produce independent and globally competitive Animal Husbandry scholars.
2) Developing animal husbandry science for the benefit of the nation.
3) Providing a conducive academic climate for implementing education with an entrepreneurial perspective.

## Graduate Profiles

| No | Profile | Description |
|---|---|---|
| 1 | Manager | Graduates who apply concepts and techniques in managing livestock farming and institutions related to livestock businesses such as financial institutions |
| 2 | Young Researcher | Graduates who able to apply scientific concepts and methods in solving problems in the development of the field of Animal Husbandry |
| 3 | Planners | Graduates who able to prepare potential and problem analysis, as well as formulate plans and strategies for the development of the livestock and related industries |
| 4 | Educators | Graduates who have the ability and skills to transfer science and technology to students in the field of animal husbandry |
| 5 | Entrepreneur | Graduates who able to apply business in the field of Animal Husbandry as their main business, or business development to support livestock business |
| 6 | Bureaucrat | Graduates who are able to organize government duties, especially in the affairs of livestock development |

## Learning Outcomes imposed on the Course

ILO-3 (P2) - Mastering the concept and solving livestock problems based on data, science, and scientific methods (K-02).

ILO-7 (KK1) - Able to apply livestock science and technology that is oriented towards increasing production, efficiency, quality, and sustainability (SS-01).

## Course Learning Outcomes (CLO)

CLO-1: Students are able to express the definition and role of physiology (CLO3)

CLO-2: Students are able to determine the function of livestock body organs: Physiology of blood, cardiovascular, endocrine system, nervous, respiratory, muscular and hormonal (SLO3)

CLO 3: "Students are able to analyze the heat exchange process (thermoregulation), reproduction process, lactation process, nutrient needs of livestock" (SLO7)

## Sub-CLO

Sub-CLO 1: Students are able to express the definition and role of physiological functions in live animals (History of Physiology, the basics of physiology and the role of physiological processes in animals, especially livestock) (CLO 1)

Sub-CLO 2: Students are able to express the physiology of blood and blood circulation (CLO 2)

Sub-CLO 3: Students are able to express cardiovascular system and heart contraction. (CLO-2)

Sub CLO- 4: Students are able to express endocrine glands and their secretions (CLO-2)

Sub-CLO 5: Students are able to express the nervous physiology system (neurons) and its receptors (CLO-2)

Sub-CLO 6: Students are able to suggest the respiratory system (CLO 2)

Sub-CLO 7: Students are able to express muscle physiology (CLO-2)

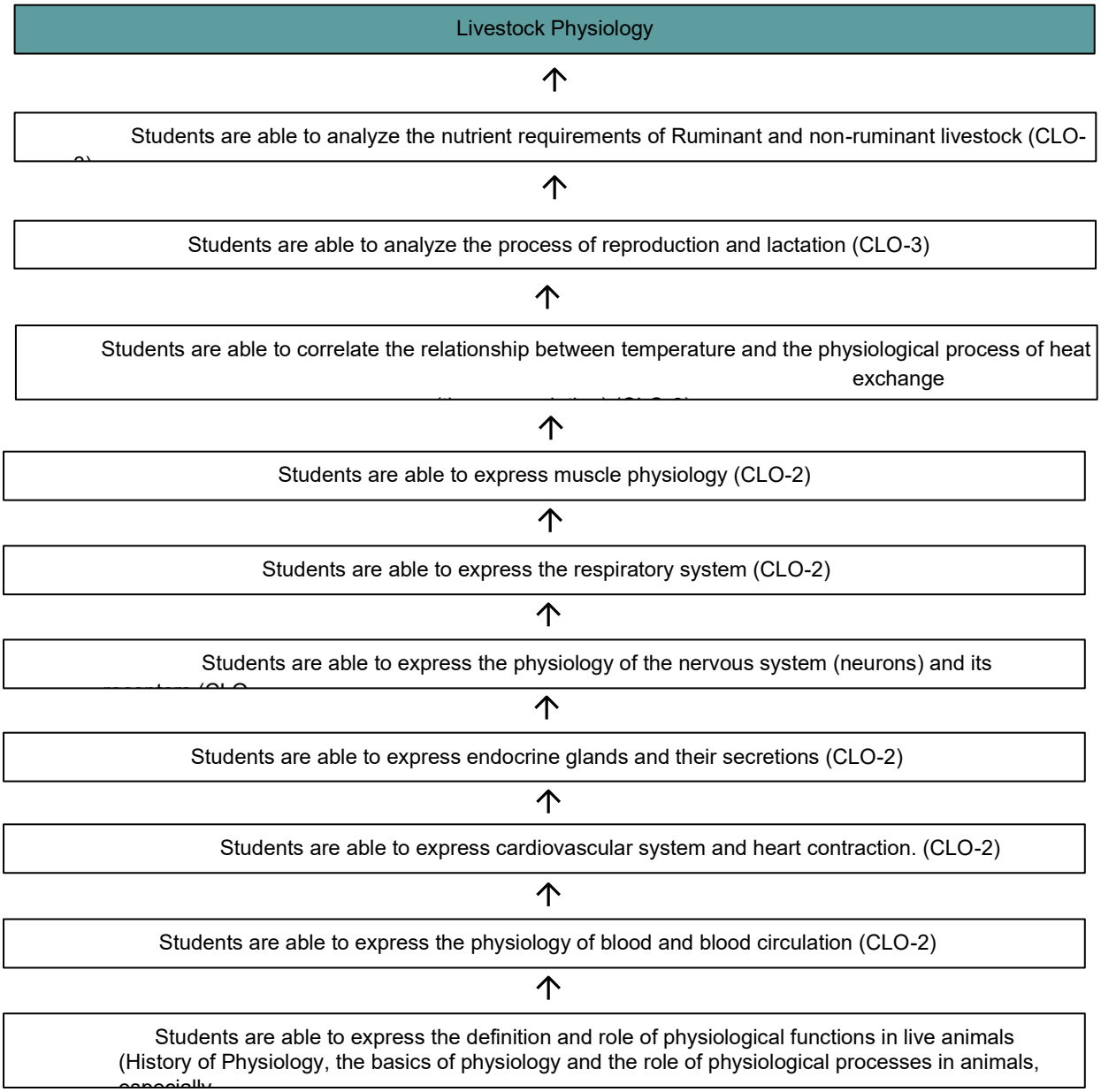
Sub-CLO 8: Students are able to express the physiology of growth, hormonal system and determine the effects of hormones (CLO-2)

Sub-CLO 9: Students are able to correlate the relationship between temperature and the physiological process of heat exchange (thermoregulation) (CLO-3)

Sub-CLO 10: Students are able to analyze the process of reproduction and lactation (CLO-3)

Sub-CLO 11: Students are able to analyze the nutrient requirements of Ruminant and non-ruminant livestock (CLO-3)

# Learning Analysis



# HASANUDDIN UNIVERSITY
# FACULTY OF ANIMAL SCIENCE
# BACHELOR PROGRAMME IN ANIMAL HUSBANDRY
# SEMESTER COURSE PLAN

| Course | Code | Course Group | Credits Points | Semester | Date of Preparation |
|---|---|---|---|---|---|
| Animal Physiology | 23I01110303 | Animal Husbandry | 3 | 1 | February 5, 2025 |

| Authority | Developer Lecturer | Course Coordinator | Head of study Program |
|---|---|---|---|
| | Prof. Dr. Ir. Herry Sonjaya, DEA, DES<br>Dr. Hasbi, S.Pt., M.Si,<br>Dr. Sri Gustina Sain, SPt, M.Si,<br>Aulia Uswa Noor Khasanah, S.Pt, M.Pt,<br>Dr. Erni Damayanti, S.Pt. | Prof. Dr. Ir. Herry Sonjaya, DEA.DES | Dr. Agr. Ir. Renny Fatmyah Utamy, S. Pt., M. Agr., IPM |

| Course Learning Outcomes | | |
|---|---|---|
| | **ILOs that are imposed on the course** | |
| | **ILO-3** | Mastering the concept and solving livestock problems based on data, science, and scientific methods (K-02). |
| | **ILO-7** | Able to apply livestock science and technology that is oriented towards increasing production, efficiency, quality, and sustainability (SS-01). |
| | **ILO⇒ Course Learning Outcomes (CLO)** | |
| | After completing this course, it is expected: | |
| | **ILO-3** | **SLO-1:** Students are able to express the definition and role of physiology |
| | | **CLO 2:** Students are able to determine the function of livestock body organs: Physiology of blood, cardiovascular, endocrine, nervous, respiratory, muscular and hormonal systems. |
| | **ILO-7** | **CLO-3 :** "Students are able to analyze the heat exchange process (thermoregulation), reproduction process, lactation process, nutrient needs of livestock" |
| | **CLO⇒ Sub-CLOs** | |
| | **SUBCLO-1** | **SUB-CLO-1:** Able to respond to the history of dairy cattle development in foreign countries and in Indonesia. ILO 8 |
| | **CLO-2** | **Sub-CLO 2:** Students are able to express the physiology of blood and blood circulation |

| | | |
|---|---|---|
| | | **SUB-CLOCK-3:** Students are able to express the cardiovascular system and heart contractions. |
| | | **SUB-CLO 4:** Students are able to suggest endocrine glands and their secretions |
| | | **SUB-CLO 5:** Students are able to express the nervous physiology system (neurons) and their receptors |
| | | **SUB-CLO 6:** Students are able to suggest the respiratory system |
| | | **SUB-CLO 7:** Students are able to express muscle physiology |
| | | **Sub-CLO 8:** Students are able to express the physiology of growth, hormonal systems and determine the effects of hormones |
| | **CLO-3** | **Sub-CLO 9:** Students are able to correlate the relationship between temperature and the physiological process of heat exchange (thermoregulation) |
| | **CLO-3** | **Sub-CLO 10:** Students are able to analyze the process of reproduction and lactation |
| | **CLO-3** | **SUB-CLO 11:** Students are able to analyze the nutrient needs of Ruminant and non-ruminant livestock |

**Correlation between ILOs/CLOs to Sub-CLOs**

| **ILOs that are imposed on the course** | **ILO** | **SUB CLO** | **Form Assessment+** | | | | | | **Weight** | **Value** | **Student Score** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | **Formative** | **Summative** | | | | | | | |
| | | | | **Interactive Studying** | **Individual Paper Assignment** | **Case Study** | **Practicum/Field Practice** | **Quiz** | | | |
| ILO-3 | CLO-1 | SUB-CLO-1 | | 3 | 2 | 0 | 0 | 0 | 5 | | |
| ILO-3 | CLO-2 | SUB-CLO-2 | | 5 | 0 | 10 | 15 | 0 | 30 | | |
| ILO-3 | CLO-2 | SUB-CLO-3 | | 3 | 0 | 0 | 0 | 2 | 5 | | |
| ILO-3 | CLO-2 | SUB-CLO-4 | | 3 | 2 | 0 | 0 | 0 | 5 | | |
| ILO-3 | CLO-2 | SUB-CLO-5 | | 3 | 2 | 0 | 0 | 0 | 5 | | |
| ILO-3 | CLO-2 | SUB-CLO-6 | | 3 | 2 | 0 | 0 | 0 | 5 | | |
| ILO-3 | CLO-2 | SUB-CLO-7 | | 0 | 0 | 10 | 0 | 0 | 10 | | |
| ILO-3 | CLO-2 | SUB-CLO-8 | | 0 | 0 | 10 | 0 | 0 | 10 | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ILO-7 | CLO-3 | SUB-CLO-9 | | 0 | 0 | 5 | 0 | 0 | 5 | | |
| ILO-7 | CLO-3 | SUB-CLO-10 | | 2 | 0 | 8 | 0 | 0 | 10 | | |
| ILO-7 | CLO-3 | SUB-CLO-11 | | 6 | 0 | 4 | 0 | 0 | 10 | | |
| | | | | 28 | 8 | 47 | 15 | 2 | 100 | | |

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|---|---|
| **Course Description** | This course discusses physiological processes in various systems in livestock, indicators of livestock physiological conditions, and how to measure physiological parameters and changes that can be observed in the process of adaptation to changes in the environment. |
| **Learning Materials / Subject Matter** | The subject matter in this course are:<br>1. Introduction, History and Role of Physiology in living animals. Basic principles of Animal Physiology.<br>2. Blood physiology, blood components, blood clotting. Blood groups. Heart and blood vessels. Exchange of substances in the vascular system<br>3. Heart physiology, Cardio vascular, Circulatory system. O2 and CO2 transport.<br>4. Endocrine system, Feedback Mechanism, Methods of Hormone Study, Differences in the mechanism of action of steroid and protein hormones, Endocrine glands and their secretion, Regulation of hormone secretion Integration of hormonal control of physiological processes.<br>5. Nerve physiology system (neurons) and receptors, Mechanism of impulse distribution, Central nervous system, autonomic nerves and reflexes, Parts of the brain and their functions. Sensory organs and their functions<br>6. Respiratory system, Process of O2 entering the body and CO2, O2 binding respiratory pigment, Dissociation curve of O2 - Hemoglobin<br>7. Muscle physiology: types of muscles, Physiology of cardiac muscle contraction and energy aspects of Muscle Contraction<br>8. Hormonal system and determining the effects of hormones<br>9. Relationship between temperature and physiological processes of heat exchange (thermoregulation)<br>10. Reproduction, Oogenesis, Spermatogenesis, Estrous cycle, pregnancy, and Lactation<br>11. Nutrient characteristics and requirements, Digestion of nutrients in ruminants and non-ruminants, Control of digestive processes, Absorption processes |
| **Reference** | **Key Reference**<br>-<br>**Additional Reference**<br>1. Rensis, F D & R. J Scaramuzzi, 2003. Heat Strees and seasonal effect on reproduction in dairy cow. Theriogenology 60: 1139 – 1151.<br>2. Lawrence T.L.J & V.R. Fowler .2002, Growth of Farm Animals, Second Edition CABI Publishing.<br>3. Adam, M.; T.M. Lubis, B. Abdyad N. Asmilia, Muttaqien & Fakhrurazi, 2015. Jumlah eritrosit dan nilai hematocrit sapi aceh dan sapi Bali di Kecamatan Leumbah Seulawah Kabupaten Ach Besar. J. Medika Veterinaria. 9 (2): 115 -118 4.<br>4. Sonjaya, H. E Abustamn & M. Arifin. 1996. Status hematologis sapi jantan muda yang dipelihara pada kondisi percobaan. Betin Ilmu Peternakan dan Perikanan IV: (11): 35 – 43 5.<br>5. Sonjaya H. 1999. Pertumbuhan dan ukuran tubuh anak kambing sapihan peranakan Etawah (PE) yang diberi suplementasi konsentrat dan mulitinutrisi blok. Betin Ilmu Peternakan dan Perikanan Vol. V (13): 32-47<br>6. Sonjaya H. 1999. Status Hematologis kambing Peranakan Etawah yang diberi level tepung darah berbeda dalam pakan dengan ransum basal jerami padi dan daun lamtoro. Betina Ilmu Peternakan dan Perikanan Vol. V (13): 48-59 |

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|---|---|
| | 7. Sonjaya H. 1996. Respon profil makro mineral darah terhadap suplementasi pada sapi Bali jantan muda yang berasal dari tiga daerah yang berbeda. Buletin Peternakan 20 (2): 116-123 Fapet-UGM 8.<br>8. Sukandi S., D. P. Rahardja, H. Sonjaya, H. Hasbi, S. Baco, S. Gustina, and K. D. D. Adiputra. 2023. Effect of Heat Stress on the Physiological and Hematological Profiles of Horned and Polled Bali Cattle. Adv. Anim. Vet. Sci. 11(6):893-902 |
| **Teaching Team** | Prof. Dr. Ir. Herry Sonjaya, DEA.,<br>Dr. Hasbi, S.Pt., M.Si.,<br>Dr. Sri Gustina Sain, SPt., M.Si.,<br>Aulia Uswa Noor Khasanah, S.Pt., M.Pt,<br>Dr. Erni Damayanti, S.Pt. |
| **Course requirements** | |

| Week | Sub CLO (End ability of each learning stage) | Assesment | | Forms and Methods of Learning [time estimate] | | Content | Weight of Assesment (%) |
|---|---|---|---|---|---|---|---|
| | | Indicator | Technique & Criteria | Offline | Online | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 1 | Students are able to express the definition and role of physiological functions in live animals (History of Physiology, the basics of physiology and the role of physiological processes in animals, especially livestock) (CLO-1) | **Formative:**<br>-<br>**Sumative:**<br>Interactive lecture, SGD and independent assignment. | **Kriteria Formative:**<br>**Kriteria Sumative:**<br>Interactive<br>Lecture (3)<br>Individual Paper Assignment (2) assessed with rubric I011240003<br>**Assessment Technique:**<br>None | **Studying:**<br>Collaborative Learning<br>2x2x50' | | 1. Lecture contract<br>2. History and basic definition of physiology<br>3. Concept of physiology | 5 |

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| 2 | Students are able to express the physiology of blood and blood circulation (CLOCK- 2)) | **Formative:**<br>-<br>**Sumative:**<br>Completeness of explanation of blood function, blood clotting, nutrient exchange between blood vessels and cells.. | **Kriteria Formative:**<br>**Kriteria Sumative:**<br>Interactive Lecture (5)<br>Case Study (10)<br>assessed with rubric I011240003<br>Practicum / Field Practice (15)<br>assessed with rubric I011240002<br>**Assessment Technique:**<br>None | **Studying:**<br>Small group discussion,<br>2 x 2 x 50 | | 1. Overview of blood function<br>2. Definition of physical and chemical properties of blood<br>3. review of blood clotting<br>4. Analysis and correlation of nutrient exchange and blood cells | 30 |
| 3 | Students are able to express cardiovascular system and heart contraction. (CLO-2) | **Formative:**<br>-<br>**Sumative:**<br>Completion of explanation of the cardiovascular system and cardiac contractions. | **Kriteria Formative:**<br>**Kriteria Sumative:**<br>Interactive Lecture (3)<br>Quiz (2)<br>**Assessment Technique:**<br>None | **Studying:**<br>Cooperative learning<br>2 x 2 x 50 | | 1. Anatomical structure of the heart<br>2. Cardiac work cycle<br>3. Control of the heart<br>4. Heart nutrition | 5 |

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| 4 | Students are able to express endocrine glands and their secretions (CLO-2) | **Formative:**<br>-<br>**Sumative:**<br>Completion of suggest endocrine glands and their secretions. | **Kriteria Formative:**<br>**Kriteria Sumative:**<br>Interactive Lecture (3)<br>Individual Paper Assignment (2) assessed with rubric I011240003<br>**Assessment Technique:**<br>None | | | 1. Endocrine gland system<br>2. Definition and mechanism of action of hypothalamus and hypophysis glands<br>3. Mechanism of action of Thyroid gland<br>4. Adrenal gland mechanism<br>5. Gonadal gland mechanism of hormone secretion mechanism Integration of hormonal control on physiological processes | 5 |

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| 5 | Students are able to express the physiological system of nerves (neurons) and their receptors (CLO-2) | **Formative:**<br>-<br>**Sumative:**<br>Ability articulate the nervous system physiology (neurons) and receptors | **Kriteria Formative:**<br>**Kriteria Sumative:**<br>Interactive Lecture (3)<br>Individual Paper Assignment (2) assessed with rubric I011240003<br>**Assessment Technique:**<br>None | | | 1. Definition of nerve cell, impulse and synapse<br>2. Brain function<br>3. Mechanisms of Somatic and Autonomic nervous system<br>4. Mechanisms of integration of neural and Endocrine control<br>5. Identification of sensor organs and receptor function | 5 |
| 6 | Students are able to express respiratory system (CLO-2) | **Formative:**<br>-<br>**Sumative:**<br>Completeness in articulating the respiratory system. | **Kriteria Formative:**<br>**Kriteria Sumative:**<br>Interactive Lecture (3)<br>Individual Paper Assignment (2) assessed with rubric I011240003<br>**Assessment Technique:**<br>None | **Lecture:**<br>Cooperative learning<br>2 x 2 x 50 | | 1. Endocrine gland system<br>2. Definition and mechanism of action of hypothalamus and hypophysis glands<br>3. Mechanism of action of Thyroid gland<br>4. Mechanism of action of Adrenal gland<br>5. Mechanism of Gonadals Glands | 5 |

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| 7-8 | Students are able to express muscle physiology (CLO-2) | **Formative:**<br>-<br>**Sumative:**<br>Completeness of explanation of muscle physiology mechanisms | **Kriteria Formative:**<br>**Kriteria Sumative:**<br>Case Study (10) assessed with rubric I011240003<br>**Assessment Technique:**<br>None | **Studying:**<br>Cooperative learning<br>2 x 2 x 50 | | 1. Transverse Muscle Fiber Structure<br>2. Structure of Smooth Muscle Fibers and Cardiac Muscle<br>3. Physiology of muscle contraction, motor unit<br>4. Stages of Contraction, Work power and energy<br>5. Energy aspects of muscle contraction | 10 |
| 9-10 | Students are able to express the physiology of growth, hormonal system and determine the effects of hormones (CLO-2) | **Formative:**<br>-<br>**Sumative:**<br>Completeness of xplanation of physiology of growth and hormonal system | **Kriteria Formative:**<br>**Kriteria Sumative:**<br>Case Study (10) assessed with rubric I011240003<br>**Assessment Technique:**<br>None | **Studying:**<br>Cooperative learning<br>2 x 2 x 50” | | 1. Thoroughness of explanation Growth in farm animals, changes in the shape and size of cells, organs, and tissues and growth of the whole body<br>2. Hormonal system<br>3. Hormonal effect | 10 |
| 11 | Students are able to correlate the relationship between temperature and physiological processes of heat exchange (thermoregulation) (CLO-3) | **Formative:**<br>-<br>**Sumative:** | **Kriteria Formative:**<br>**Kriteria Sumative:**<br>Case Study (5) assessed with rubric I011240003 | **Studying:**<br>Cooperative Learning | | 1. Temperature and physiological processes<br>2. Rate of reaction, Temperature effects on | 5 |

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|---|---|---|---|---|---|---|---|
| | | Thoroughness of explanation of thermoregulation. | **Assessment Technique:**<br><br>None | 2 x 2 x 50” | | enzymatic activation, Thermogenesis and thermolysis<br>3. Heat exchange between organisms and their environment: Radition Conduction Convection and Evaporation<br>4. Thermoregulation in endotherm and ectotherm animals. Thermoreceptors and integrations centers | |
| 12-13 | Students are able to analyze the process of reproduction and lactation (CLO- 3) | **Formative:**<br><br>-<br><br>**Sumative:**<br>completeness on the ability to analyze the process of reproduction and lactation | **Kriteria Formative:**<br><br>**Kriteria Sumative:**<br><br>Interactive Lecture (2) Case Study (8) assessed with rubric I011240003<br><br>**Assessment Technique:**<br><br>None | **Studying:**<br><br>Small Group Discussion, Collaborative Learning<br><br>2 x 2 x 50 | | 1. The role of hormones in reproductive processes<br>2. Mechanism of spermatogenesis<br>3. Oogenesis and folliculogenesi<br>4. Reproductive cycle of female cattle in mammals<br>5. Lactation initiation<br>6. Endrinology Pregnancy and lactation | 10 |

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|---|---|---|---|---|---|---|---|
| | | | | | | 7. Anestrus condition during lactation | |
| 14-16 | Students are able to analyze the nutrient needs of Ruminant and non-ruminant livestock (CLO-3) | **Formative:**<br>-<br>**Summative:**<br>ability to analyze the needs and metablosime nutrient requirements of ruminant and non- ruminant livestock | **Kriteria Formative:**<br>**Kriteria Sumative:**<br>Interactive Lecture (6)<br>Case Study (4)<br>**Assessment Technique:**<br>None | **Studying:**<br>Small group discussion, collaborative learning<br>2 x 2 x 50 | | 1. Classification of nutrients in animal feed<br>2. Digestion in livestock with simple stomach<br>3. Nutrients: Carbohydrate, Protein and Fat<br>4. Hydromineral metabolism, dynamic body solution, homeostasis<br>5. Energy metabolism, Energy transformation, Energy sources and allocation. Carbohydrate, Lipid and Protein Metabolism. | 10 |

**Matrix ILO, CLO, and Assessment Method**

| SLO / CLO | CLO-1 | CLO-2 | CLO-3 |
|---|---|---|---|
| SLO-3 (P2) | Interactive Lecture (Weight 3%)<br>Individual Paper Assignment (Weight 2%) | Interactive Lecture (Weight 5%)<br>Case Study (Weight 10%)<br>Practicum/Field Practice (Weight 15%)<br>Interactive Lecture (Weight 3%)<br>Quiz (Weight 2%)<br>Interactive Lecture (Weight 3%)<br>Individual Paper Assignment (Weight 2%)<br>Interactive Lecture (Weight 3%)<br>Individual Paper Assignment (Weight 2%)<br>Interactive Lecture (Weight 3%)<br>Individual Paper Assignment (Weight 2%)<br>Case Study (Weight 10%)<br>Case Study (Weight 10%) | |
| SLO-7 (KK1) | | | Case Study (Weight 5%)<br>Interactive Lecture (Weight 2%) Case Study (Weight 8%)<br>Interactive Lecture (Weight 6%) Case Study (Weight 4%). |

**Evaluation Type and Assessment Weight**

| Type | Assessment Weight |
|---|---|
| Interactive Lecture | 28 |
| Individual Paper Assignment | 8 |
| Case Study | 47 |
| Practicum/Field Practice | 15 |
| Quiz | 2 |
| Total | 100 |

**Assessment and Evaluation of Student Achievement of CLO**

| ILOs imposed on the Course | CLO | SUB CLO | Form of Assessment* | | | | | | Weight | Value | Student Score |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Formative | Sumative | | | | | | | |
| | | | | Interactive Studying | Individual Paper Assignment | Case Study | Practicum/Field Practice | Quiz | | | |
| ILO-3 | CLO- 1 | SUB-CLO-1 | | 3 | 2 | 0 | 0 | 0 | 5 | | |
| ILO-3 | CLO- 2 | SUB-CLO-2 | | 5 | 0 | 10 | 15 | 0 | 30 | | |
| ILO-3 | CLO- 2 | SUB-CLO-3 | | 3 | 0 | 0 | 0 | 2 | 5 | | |
| ILO-3 | CLO- 2 | SUB-CLO-4 | | 3 | 2 | 0 | 0 | 0 | 5 | | |
| ILO-3 | CLO- 2 | SUB-CLO-5 | | 3 | 2 | 0 | 0 | 0 | 5 | | |
| ILO-3 | CLO- 2 | SUB-CLO-6 | | 3 | 2 | 0 | 0 | 0 | 5 | | |
| ILO-3 | CLO- 2 | SUB-CLO-7 | | 0 | 0 | 10 | 0 | 0 | 10 | | |
| ILO-8 | CLO- 2 | SUB-CLO-8 | | 0 | 0 | 10 | 0 | 0 | 10 | | |
| ILO-7 | CLO- 3 | SUB-CLO-9 | | 0 | 0 | 5 | 0 | 0 | 5 | | |
| ILO-7 | CLO- 3 | SUB-CLO-10 | | 2 | 0 | 8 | 0 | 0 | 10 | | |
| ILO-7 | CLO- 3 | SUB-CLO-11 | | 6 | 0 | 4 | 0 | 0 | 10 | | |
| | | | | 28 | 8 | 47 | 15 | 2 | 100 | | |

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| | **HASANUDDIN UNIVERSITY**<br>**FACULTY OF ANIMAL SCIENCE**<br>**BACHELOR PROGRAMME IN ANIMAL HUSBANDRY** |

## STUDENT STRUCTURED ASSIGNMENT PLAN

| | | | | | |
|---|---|---|---|---|---|
| **Course** | Animal Physiology | | | | |
| **Code** | 23I01110303 | **Credits Points** | 3 | **Semester** | 1 (one) |
| **Developer Lecturer** | Prof. Dr. Ir. Herry Sonjaya, DEA., DES | | | | |

| **Task Form** | **Task Time** |
|---|---|
| Documents/Magazines | 2 Weeks |

**Task Title**

Definition and physiological functions in livestock (History of Physiology, fundamentals of physiology, and the role of physiological processes in animals, especially livestock)

**Course Learning Outcomes**

SUB-CLO-1: Able to explain the definition and physiological functions in livestock (History of Physiology, fundamentals of physiology, and the role of physiological processes in animals, especially livestock) (ILO-1)

**Task Description**

The student's assignment is a group task to make a Paper Assignment " Physiological processes in animals, especially ruminants and non-ruminants" by choosing 1 of the sub-topics. The preparation of the paper follows the following procedure:

1) Each group chooses 1 of the sub-topics for 1 group.
2) Discuss among the group members to identify the process stages for each of the selected sub-topics. Information related to the selected sub-topic can be obtained from textbooks and journals.
3) Create a paper with the following systematics:
   I. Introduction
   II. Discussion
   III. Conclusion
   IV. Literature
4) Group presentation

**Assignment Method**

1. Conducted in groups using the Small Group Discussion (SGD) learning method.

**Form and Format of Output**

a. Object of Cultivation: Physiological processes in live livestock
b. Form of Output: Paper

**Indicators, Criteria and Assessment Weight**

**Indicators:**

1. Systematics: 10%
2. Accuracy of analysis: 25%
3. Depth of material: 30%
4. Novelty and reputation of library materials: 10%
5. Team cohesiveness: 10%
6. Mastery of the material: 15%

**Implementation Schedule**

| | |
|---|---|
| 2 weeks | |

| Other |
|---|
| - |
| **Reference List** |
| 1. Lawrence T.L.J dan V.R. Fowler .2002, Growth of Farm Animals, Second Edition CABI Publishing.<br>2. Adam, M.; T.M. Lubis, B. Abdyad N. Asmilia, Muttaqien & Fakhrurazi, 2015. Jumlah eritrosit dan nilai hematocrit sapi aceh dan sapi Bali di Kecamatan Leumbah Seulawah Kabupaten Ach Besar. J. Medika Veterinaria. 9 (2): 115 -118<br>3. Sonjaya, H. E Abustamn dan M. Arifin. 1996. Status hematologis sapi jantan muda yang dipelihara pada kondisi percobaan. Betin Ilmu Peternakan dan Perikanan IV: (11): 35 – 43. |

| DEFINITION OF 1 CREDIT IN THE FORM OF LEARNING | | | | Time |
|---|---|---|---|---|
| A | Lecture, Reception, Tutorial | | | |
| | Face to Face | Structured Assignment | Independent Learning | |
| | 50 minutes/week/semester | 60 minutes/week/semester | 60 minutes/week/semester | 2,83 |
| B | Seminars or other similar forms of learning | | | |
| | Face to face | | Self-study | |
| | 100 minutes/week/semester | | 70 minutes/week/semester | 2,83 |
| C | Practicum, studio practice, workshop practice, field practice, research, community service, and/or other equivalent forms of learning | | | |
| | 170 minutes/week/semester | | | 2,83 |

| No | Metode Pembelajaran Mahasiswa | Kode |
|---|---|---|
| 1 | Small Group Discussion | SGD |
| 2 | Role-Play & Simulation | RPS |
| 3 | Discovery Learning | DL |
| 4 | Self-Directed Learning | SDL |
| 5 | Cooperative Learning | CoL |
| 6 | Collaborative Learning | CbL |
| 7 | Contextual Learning | CtL |
| 8 | Project Based Learning | PjBL |
| 9 | Problem Based Learning & Inquiry | PBL |
| 10 | Atau metode pembelajaran lain, yang dapat secara efektif memfasilitasi pemenuhan capaian pembelajaran lulusan. | |