# Course Description Form

1. Course Name:

Animal Nutrition

2. Course Code:

ANUT325

3. Semester / Year:

First semester/ 2023 2024

4. Description Preparation Date:

1/2/2024

5. Available Attendance Forms:

Presence

6. Number of Credit Hours (Total) / Number of Units (Total)

2 theoretical + 3 practical = 5hr / 3.5 units

7. Course administrator's name (mention all, if more than one name)

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8. Course Objectives

| **Theoretical** | Practical |
|---|---|
| Enabling the student to understand a comprehend what is related to anin nutrition<br>Its relationship to animal producti projects and the economic aspect<br>Enabling the student to beco familiar with the components of fo and food compounds<br>Enabling the student to know t metabolic pathways of different foo and their relationship to the producti performance of animals<br>Enabling the student to address t nutritional needs of animals accordi to their production to prevent t occurrence of nutrition-relat diseases | Enabling the student to become familiar with the m important laboratory methods<br>To measure food ingredients and food fraud |

9. Teaching and Learning Strategies

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| **Strategy** | - Interactive lecture<br>-Brainstorming<br>- Dialogue and discussion<br>-Field Training<br>- Practical exercises<br>- Field project<br>-Self-education |

## 10. Course Structure

| Week | Hours | Required Learning Outcomes | Unit or subject name | Learning method | Evaluation method |
|---|---|---|---|---|---|
| 1 | 2 hr. **theoretical**<br>**3 hr. practical** | **theoretical** :<br>The student learns about the relationship of nutrition science to other sciences and the composition of the animal body and its food<br>:Practical<br>The student applies preventive procedures for laboratory safety | **theoretical** :<br>Expansion and development in nutrition science<br>:Practical<br>General instructions and instructions on the use of the laboratory and safety and security conditions | **:theoretical**<br>Methods audio style Writing on Blackboard H style Dialogue Direct<br>**:practical**<br>Assigning tasks And report | short exam<br>Assignment of duty<br>discussions |
| 2 | 2 hr. **theoretical**<br>**3 hr. practical** | **theoretical**<br>The student links the properties of water to the effect of thirst on animals and the need for water and excretion from the body<br>For **my work**<br>The student remembers previous information about preparing chemical solutions in chemistry lessons | **theoretical**<br>The role of water and its needs for the body<br>:Practical<br>Preparing standard solutions | **:Theoretical**<br>Methods audio style Writing on Blackboard H style Dialogue Direct<br>**:practical**<br>Assigning tasks And report | short exam-<br>Assignment of -<br>duty<br>discussions |
| 3 | 2 hr. **theoretical** | **:Theoretical**<br>A2 The student | **Theoretical** : | **:Theoretical**<br>Methods | short exam-<br>Assignment of - |

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| | **3 hr. practical** | remembers the forms of energy and understands the cycle of energy production in the body<br><br>**Practical**<br>B1 The student implements, according to the correct scientific method, the method of taking feed samples for analysis | Energy, its transformations and enzymes<br><br>Practical<br>take samples | audio style Writing on Blackboard H style Dialogue Direct **:practical** Assigning tasks And report | duty discussions |
| 4 | 2 hr. **theoretical 3 hr. practical** | **Theoretical**<br>A3 The student understands the differences in the digestive system between animals and the effect of nutritional level on digestion<br>**Practical**<br>C7 The student discovers modern devices for analyzing food and an overview of how they work | Theoretical<br><br>Digestive processes in agricultural animals<br><br>Practical<br>Types of tests and modern and classic devices for food analysis | **:Theoretical** Methods audio style Writing on Blackboard H style Dialogue Direct **:practical** Assigning tasks And rep | short exam- Assignment of - duty discussions- |
| 5 | 2 hr. **theoretical 3 hr. practical** | **Theoretical**<br>A4 The student lists the types of sugars found in the composition of carbohydrates<br>**Practical**<br>B2 The student practically carries out the estimation of moisture in feed | Theoretical<br><br>Carbohydrates<br><br>Practical<br>Methods for measurin moisture in different fee calculating dry matter | **:Theoretical** Methods audio style Writing on Blackboard H style Dialogue Direct **:practical** Assigning tasks And report | short exam- Assignment of - duty discussions |
| 6 | 2 hr. **theoretical** | **Theoretical**<br>A5 The student | Theoretical | **:Theoretical** | short exam- |

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| | **3 hr. practical** | identifies the most important products of carbohydrate fermentation in agricultural animals and explains the reason for the difference between them<br><br>**Practical**<br>B3 The student applies the correct steps to find the ash content of feed | Carbohydrate metabolism<br>Practical<br>Steps to measure ash and detect adulteration in feed | Methods audio style Writing on Blackboard H style Dialogue Direct **:practical** Assigning tasks And report | Assignment of - duty discussions |
| | | | | | |
| 7 | 2 hr. **theoretical 3 hr. practical** | **Theoretical**<br>C2 The student links the types of fats in food and their relationship to fats deposited in the body<br><br>**Practical**<br>B4 The studen applies the corre procedures to find feed content of eth .(fat) extract | Theoretical<br>Fats<br><br>Practical<br>Steps to measure fat in feed | **:Theoretical** Methods audio style Writing on Blackboard H style Dialogue Direct **:practical** Assigning tasks And report | short exam- Assignment of - duty discussions |
| 8 | 2 hr. **theoretical 3 hr. practical** | **Theoretical**<br>A6 The student understands the mechanism of difference between animals in digesting and absorbing fats and recognizes the resulting nutritional diseases associated with them<br><br>**Practical**<br>B5 The student applies the | Theoretical<br>Fat digestion and metabolism<br><br>Practical<br>Steps for determining nitrogen in feed | **:Theoretical** Methods audio style Writing on Blackboard H style Dialogue Direct **:practical** Assigning tasks And report | short exam- Assignment of - duty discussions |

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| | | procedures To estimate nitrogen in feed | | | |
| 9 | 2 hr. **theoretical 3 hr. practical** | **Theoretical** A7 The student learns about the types of proteins, their properties, and the forms of nitrogen excreted from the body<br><br>**Practical** B6 The studen implements the procedures and ste for fiber analysis | Theoretical<br><br>Proteins<br><br>Practical<br>Types of fibers and methods of estimating them | **:Theoretical** Methods audio style Writing on Blackboard H style Dialogue Direct **:practical** Assigning tasks And report | short exam- Assignment of - duty discussions |
| 10 | 2 hr. **theoretical 3 hr. practical** | **Theoretical** C4 The student distinguishes between the products of digestion among animal species and links them to metabolic changes and production<br><br>**Practical** B7 The studen calculates, using special equations, t energy values of fe | Theoretical<br><br>Metabolism of proteins<br><br>Practical<br>Methods of measuring and calculating energy in feed | **:Theoretical** Methods audio style Writing on Blackboard H style Dialogue Direct **:practical** Assigning tasks And rep | short exam- Assignment of - duty discussions |
| 11 | 2 hr. **theoretical 3 hr. practical** | **Theoretical** C5 The student identifies the most important symptoms of deficiency and the effects of the major elements and their relationship to each other<br><br>**Practical** A13 The studen calculates, using special equations, t values of the nitrog | Theoretical<br>Major inorganic elements<br><br>Practical<br>Methods for measuring nitrogen- and starch-free extract | **:Theoretical** Methods audio style Writing on Blackboard H style Dialogue Direct **:practical** Assigning tasks And rep | short exam- Assignment of - duty discussions- |

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| | | free extract | | | |
| 12 | 2 hr. **theoretical 3 hr. practical** | **Theoretical** C6 The student identifies the most important symptoms of deficiency and the effects of microelements<br><br>**Practical** B9 The student is proficient in producing good quality hay | Theoretical<br>Minor inorganic elements<br><br>Practical<br>How the threshing machine works and the quality of the threshing machine | **:Theoretical** Methods audio style Writing on Blackboard H style Dialogue Direct **:practical** Assigning tasks And report | short exam- Assignment of - duty discussions |
| 13 | 2 hr. **theoretical 3 hr. practical** | **Theoretical** A8 The student understands the relationship of inorganic elements and the acid-base balance of feeds and dealing with their negative effects<br><br>**Practical** B10 The student proficient in producing good quality silage | Theoretical<br>The role of electrolytes in barrier balance<br><br>Practical<br>How to make silage and the quality of silage | **:Theoretical** Methods audio style Writing on Blackboard H style Dialogue Direct **:practical** Assigning tasks And report | short exam- Assignment of - duty discussions |
| 14 | 2 hr. **theoretical 3 hr. practical** | **Theoretical** A9 The student remembers the most important functions and symptoms of deficiency of water-soluble vitamins<br><br>**Practical** B11 The studen creates mixtures reactions in the rig proportions to for the reactions | Theoretical<br>Vitamins<br><br>Practical<br>Methods of mixing feeds to form diets | **:Theoretical** Methods audio style Writing on Blackboard H style Dialogue Direct **:practical** Assigning tasks And rep | short exam- Assignment of - duty discussions- |
| 15 | 2 hr. **theoretical 3 hr. practical** | **Theoretical** A10 The student learns about the role of antibiotics, how | Theoretical<br>Antibiotics and hormones | **:Theoretical** Methods audio style Writing on | short exam- Assignment of - duty discussions- |

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| | | they work, growth regulators, and their use in animal production<br><br>**Practical**<br>C8 The student calculates the energy and protein content of the diet | Practical<br>Methods and how to calculate energy and protein from diets | Blackboard<br>H<br>style<br>Dialogue<br>Direct<br>**:practical**<br>Assigning tasks<br>And rep | |

## 11. Course Evaluation

| | Calendar methods | Calendar date (week) | Class | Relative weight % |
|---|---|---|---|---|
| 1 | Report 1 | fourth week | 2.5 | 2.5 |
| 2 | Report 2 | The fifth week | 2.5 | 2.5 |
| 3 | Short test (1) Quiz | the sixth week | 2 | 2 |
| 4 | Short test (2) Quiz | The fourteenth week | 2 | 2 |
| 5 | Short test (3) Quiz | The fifteenth week | 1 | 1 |
| 6 | Semester test (1) | the sixth week | 7.5 | 7.5 |
| 7 | Semester test (2) | The eleventh week is difficult | 7.5 | 7.5 |
| 8 | Final theoretical test | Final semester exams | 40 | 40 |
| 9 | Practical field project | The fifteenth week | 5 | 5 |
| 10 | Field evaluation | The third and fifth week | 2 | 2 |
| 11 | Practical short test (1) Quiz | The first week | 1 | 1 |
| 12 | Short practical test (2) Quiz | fourth week | 0.5 | 0.5 |
| 13 | Short practical test (3) Quiz | The fourteenth week | 1 | 1 |
| 14 | Live drawings and homework | Weeks 6, 8, 9, 10, 11, 12 and 13 | 5.5 | 5.5 |
| 15 | Final practical test | | 20 | 20 |
| | total | 100% | 100% | 100% |

## 12. Learning and Teaching Resources

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|---|---|
| Required textbooks (curricular books any) | Animal Nutrition 1967 Leonardo Minro and John Losley |
| Main references (sources) | Animal Nutrition 2021, 8 edition, McDonald, et al |
| Recommended books and references (scientific journals, reports…) | NRC, 2001 and NRC 2007 |
| Electronic References, Websites | Reports and articles |

Theoretical subject teacher

Omar Dheyaa Mohammed

Practical subject teacher

Wissam Jassim Mohammed

Head Of Department

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