Western Technical College

10006134 Animal Nutrition 2

Course Outcome Summary

Course Information

Description	This is an advanced nutrition class which incorporates the latest research and technology into better feeding of our animals. Total mixed ration, bypass protein, fiber, non-protein nitrogen, and feed additives are also discussed. Students will formulate and analyze rations using Excel and the NRC model.
Career Cluster	Agriculture, Food and Natural Resources
Instructional Level	Associate Degree Courses
Total Credits	2.00
Total Hours	72.00

Types of Instruction

Instruction Type	Credits/Hours
Lab	2 CR / 54 HR

Course History

Last Approval Date	12/3/2015

Purpose/Goals

Develop diets for livestock, using the latest ration balancing technology to optimize production.

Pre/Corequisites

Prerequisite 10006121 Animal Nutrition 1

Textbooks

No textbook required.

Learner Supplies

Calculator - $10. **Vendor:** Campus Shop. Required.

Core Abilities

1. Apply mathematical concepts.
Status *Active*

2. Demonstrate ability to think critically.
Status *Active*

3. Make decisions that incorporate the importance of sustainability.
Status *Active*

4. Use effective communication skills.
Status *Active*

5. Use technology effectively.
Status *Active*

Program Outcomes

1. Apply economic and marketing strategies to Agribusiness Industry
Type *TSA* ***Status*** *Active*

Criteria
1.1. learner researches market potential
1.2. learner develops a marketing plan
1.3. learner differentiates the relationship of cash and futures commodity markets
1.4. learner develops a sales presentation
1.5. learner identifies risk management strategies

2. Apply relevant technologies
Type *TSA* ***Status*** *Active*

Criteria
2.1. learner investigates technologies in agribusiness
2.2. learner applies technology effectively
2.3. learner uses technology safely

3. Create a livestock management plan
Type *TSA* ***Status*** *Active*

Criteria
3.1. learner formulates a ration
3.2. learner evaluates a ration
3.3. learner utilizes proper reproductive technology
3.4. learner analyzes livestock facility systems
3.5. learner identifies the compliance components of regulating agencies
3.6. learner creates a herd health protocol
3.7. learner applies animal welfare practices
3.8. learner develops standard operating procedures for livestock

4. Investigate opportunities in Agribusiness
Type *TSA* ***Status*** *Active*

Criteria
4.1. learner correlates personal strengths, weaknesses and personality traits to industry opportunities
4.2. learner interprets the impact of identified trends and topics in agribusiness
4.3. learner completes occupational survey with members of industry
4.4. learner researches career options in agribusiness

5. Interact as a professional in Agribusiness

Type *TSA* ***Status*** *Active*

Criteria

5.1. learner identifies proper attire for career
5.2. learner demonstrates effective oral and written communication
5.3. learner identifies professional organizations in agribusiness
5.4. learner adheres to ethical standards
5.5. learner applies interpersonal communication skills
5.6. learner develops a professional continuous improvement plan
5.7. learner creates an employment portfolio

Course Competencies

1. Explain the functions of the digestive systems of ruminants and non-ruminants.

Domain *Cognitive* ***Level*** *Evaluating* ***Status*** *Active*

Assessment Strategies

1.1. Use of demonstration models, specimens, illustrations, and narratives.
1.2. Written Product

Criteria

Criteria - Performance will be satisfactory when:

1.1. learner identifies the parts of each system.
1.2. learner illustrates how the physical characteristics are related to their function.
1.3. learner illustrates a flow chart of the process of feedstuffs through the digestive system.
1.4. Learner describes the functions of the ruminant digestive system
1.5. learner describes the functions of the non-ruminant digestive system
1.6. learner illustrates the role of digestive enzymes
1.7. learner explains the role of bacterial digestion in the rumen and cecum

Learning Objectives

1.a. Identify parts of digestive system.
1.b. Identify the functions of the digestive system.
1.c. Compare and contrast ruminant and non-ruminant digestive systems.
1.d. Explain feedstuff digestion.
1.e. Explain nutrient digestion.
1.f. Choose appropriate feedstuffs for ruminanats.
1.g. Demonstrate healthy rumen function.
1.h. Describe appropriate feeds for non ruminants.

2. Evaluate the functions of the six basic nutrients.

Domain *Cognitive* ***Level*** *Evaluation* ***Status*** *Active*

Assessment Strategies

2.1. Written Product

Criteria

Criteria - Performance will be satisfactory when:

2.1. learner correctly explains the functions of the nutrients
2.2. learner recognizes the typical symptoms of nutrient deficiencies.
2.3. learner categorizes feedstuffs according to the level of each nutrient.
2.4. learner identifies sources of the nutrients to meet the needs of the animal
2.5. learner calculates the value of the nutrients in a feedstuff

Learning Objectives

2.a. Explain the six basic nutrients.
2.b. Categorize the functions of each nutrient.
2.c. Describe deficiencies of each nutrient.

2.d. Compare the chemical composition of each nutrient.
2.e. Discriminate the differences of fiber and non fiber carbohydrate digestion in ruminants.
2.f. Categorize essential and non-essential amino acids.
2.g. Evaluate saturated and unsaturated fats for both ruminants and non ruminants.

3. Apply equivalents of measure for weight, volume, distance, energy, and Metric to English.
Domain *Cognitive* ***Level*** *Applying* ***Status*** *Active*

Assessment Strategies
3.1. Written Product

Criteria

Criteria - Performance will be satisfactory when:

3.1. learner converts metric measures.
3.2. learner converts English measures.
3.3. learner converts English measures to metric and vice versa.
3.4. learner converts parts per million to percentage and vice versa.

Learning Objectives
3.a. Interpret tables giving measurement equivalents.
3.b. Convert bushels to pounds.
3.c. Convert metric measures to English.
3.d. Convert parts per million to percentage.
3.e. Identify energy measurements of different feeds.

4. Interpret the nutrient content of feedstuffs for livestock.
Domain *Cognitive* ***Level*** *Evaluation* ***Status*** *Active*

Assessment Strategies
4.1. Case Study
4.2. Written Product
4.3. Demonstration

Criteria

Criteria - Performance will be satisfactory when:

4.1. learner use proper feed sampling technique.
4.2. learner analyzes feedstuff reports.
4.3. learner evaluates feedstuff reports on the basis of nutrient content.
4.4. learner recommends most suitable feedstuffs for a designated production level.

Learning Objectives
4.a. Demonstrate proper method of taking a feed sample.
4.b. Convert feedstuffs from as fed to dry matter basis.
4.c. Evaluate several feedstuffs that are tested by a Testing Lab.
4.d. Identify differences in feedstuff quality using Feedstuff Composition Tables.
4.e. Estimate energy values of feedstuffs.
4.f. Describe all feedstuff nomenclature found on lab analysis reports.
4.g. Identify factors affecting feed quality.
4.h. Identify feed manufacturing terminology.

5. Determine the nutrient requirements of a dairy cow, horse, beef or swine.
Domain *Cognitive* ***Level*** *Applying* ***Status*** *Active*

Assessment Strategies
5.1. Research Paper
5.2. Case Study

Criteria

Criteria - Performance will be satisfactory when:

5.1. Learner's generated report predicts appropriate dry matter intake and nutrient requirements for specific

cows.

5.2. Learner calculates the nutritional needs of beef cattle based on mature weight and desired rate of gain
5.3. Learner calculates the nutritional needs of dairy cattle based on mature weight, pounds of milk produced and the % of milk fat
5.4. Learner calculates the nutritional needs of swine based on mature weight and desired rate of gain

Learning Objectives

5.a. Assess the nutrient requirements of a lactating cow.
5.b. Determine how dry matter intake affects dairy rations.
5.c. Choose the correct forages based on availability and quality.
5.d. Determine how stage of lactation affects requirements.
5.e. Assess requirements for dry cows.
5.f. Identify how changes in requirements are affected by environmental factors.
5.g. Choose the correct concentrates and by- product feeds for high producing dairy cows.
5.h. Identify factors affecting the dairy cows health in early lactation.
5.i. Generate reports using Dairy Balancing Software.

6. Determine an appropriate rations for a beef, horse, sheep or dairy herd

Domain *Cognitive* ***Level*** *Applying* ***Status*** *Active*

Assessment Strategies

6.1. Written Product
6.2. Case Study

Criteria

Criteria - Performance will be satisfactory when:

6.1. Learner identifies proper feedstuffs used in dairy, beef and swine rations
6.2. Learner calculates the nutritional values of feedstuffs
6.3. Learner develops a balanced ration, using a ration sheet for beef
6.4. Learner develops an Excel spreadsheet to analyze given rations for Dairy

Learning Objectives

6.a. Identify the dairy cow or cows to be balanced for.
6.b. Input the correct data for the ration to be completed.
6.c. Input the correct feedstuffs into the ration.
6.d. Balance the ration correctly for all nutrient requirements.
6.e. Adjust the ration according to requirements.
6.f. Compute a balanced ration for high producing cows.
6.g. Print ration reports.
6.h. Present balanced ration reports.
6.i. Evaluate present dairy rations.
6.j. Generate a ration for a group of cows using a TMR.

Course Learning Plans and Performance Assessment Tasks

Type	Title	Source	Status
LP	Dairy Ration Balancing	Course	Active