

## Department:

Agriculture

## Course Description:

This advanced course will cover various techniques involved in the formulation, preparation, and construction of animal nutrient rations.

## Course Competencies:

Upon completion of the course, the student should be able to:

1. Formulate rations using the Pearson Square method.
2. Formulate rations using simple algebraic equations.
3. Appraise feeds for livestock on criteria of TDN, kcal, proteins, amino acids, minerals, vitamins, etc., on both as-fed basis and nutrient composition figures.
4. Prepare rations on a least-cost basis.
5. Balance rations for beef cattle, dairy cattle, sheep, swine, and horses.
6. Explain the use and meaning of the Uniform State and Federal Feed Bill.
7. Prepare supplement formulations for feed additives to various livestock rations using computer templates for batch and individual ration formulation.

## Course Content:

- A. Proximate Analysis and Understanding a Feed Analysis Report
- B. Basic Ration Balancing Techniques
  1. Pearson Square method
  2.  $X + Y = 100$  method
  3. Ration exercises over parts A and B in text
- C. Advanced Ration Techniques
  1. Balancing rations-mineral considerations
  2. Balancing rations-vitamin considerations
- D. Feed Tag Laws
- E. Feed Additives
- F. Evaluating Livestock Premixes

## Learning Assessments:

Course competencies will be assessed by use of a pre-test, unit tests, assignments, final exam, and a post-test.

## Instructional Materials:

Animal Feeding and Nutrition, Joergsen, 9th Ed., Kendall Hunt, 2007. ISBN: 07872-78394

**Guidelines for Requesting Accommodations Based on  
Documented Disability or Medical Condition**

It is the intention of Highland Community College to work toward full compliance with the Americans with Disabilities Act, to make instructional programs accessible to all people, and to provide reasonable accommodations according to the law.

Students should understand that it is their responsibility to self-identify their need(s) for accommodation and that they must provide current, comprehensive diagnosis of a specific disability or medical condition from a qualified professional in order to receive services. Documentation must include specific recommendations for accommodation(s). Documentation should be provided in a timely manner prior to or early in the semester so that the requested accommodation can be considered and, if warranted, arranged.

In order to begin the process all students **must** complete the “Disabilities Self-Identification Form” at this link:  
<https://highlandcc.edu/pages/disability-services>.

This form can also be accessed at the Highland Community College homepage under Students Services/Student Resources/Disability Service or by contacting the Disabilities Coordinator.