Division: Agriculture Production Systems- Animal Science/ Ag Education
Course Number: ASI 1253
Credit Hours: 3
Instructor: DAVE SMITH, associate professor emeritus
Address: 23642 Busted five Ct., Rapid City, SD
E-MAIL: dsmith4@unl.edu
Phone: 402-219-3738

DIVISION MISSION APS-Animal Science/ Agriculture Education division is dedicated to embracing innovation and respecting tradition for the agriculture industry and related sciences.

ASI 1253- Nutrition meets the following APS Program Outcomes:

1. Students will be able to effectively communicate in oral and written form.
2. Students will be able to gather, assimilate and process information to reach sound logical conclusions.
3. Students will be able to exhibit required knowledge and skills consistent with their chosen field of study.

Learning outcomes specific to Livestock Industry Management Options.
1. Students will be knowledgeable in the areas of modern livestock husbandry and management Practices.

ASI 1253- Nutrition supports the following General Education Outcomes:

1. Information Literacy
2. Quantitative Literacy
3. Problem Solving

Student Learning Outcomes:

1. Students will explain important principles of nutrition and their applications to feeding livestock and the feed industry.
2. Students will explain digestion and absorption of nutrients by ruminant and nonruminant species.
3. Students will list the classification, functions, and sources of water, carbohydrates, protein, lipids, minerals, and vitamins used in livestock diets.
4. Students will define terminology used by the livestock industry to describe and measure nutrients.
5. Students will describe deficiencies, toxicity and interrelationships of nutrients.
6. Student will explain how and why feed should be sampled for analysis.
7. Students will be able to compare feeds based on laboratory analysis.
8. Students will describe energy metabolism and predict gain in ruminant animals based on energy intake.

COURSE DESCRIPTION: A study of water, carbohydrates, fat, protein, vitamins and minerals as they apply to digestion and animal utilization. Feed sampling and testing will also be discussed.

COURSASE PREREQUISITE: None (Dual credit students see the NCTA dual credit guidelines)
TEXTBOOK:

Required:

Kristjan Bregendahl, Josie Coverdale, and Stephanie Hansen

Supplemental:

Basic Animal Nutrition and Feeding, D.C. Church and W.G. Pond

CANVAS LEARNING MANAGEMENT SYSTEM:

Students will receive an ID and password from UNL to access the Canvas Learning Management system available on the NCTA web site.

COURSE TOPIC OUTLINE:

I. Nutrients
   A. Water
   B. Carbohydrates
   C. Lipids
   D. Protein
   E. Minerals
   F. Vitamins

II. Digestive Systems
   A. Monogastric
   B. Ruminant

II. Energy Metabolism
   a. Kreb’s Cycle
   b. Glycolysis

IV. Feed Sampling and Testing

V. Energy in feed

ASSESSMENT:

Academic assessment is the process for ongoing improvement of student learning and success. The assessment program at Nebraska College of Technical Agriculture has four specific interrelated purposes:

1. To improve Student learning
2. To improve teaching strategies
3. To document success and identify opportunities for improvement
4. To provide evidence for institutional effectiveness

This is a self-paced class intended to be completed in a 16 week semester. There is a test over each module, each test has a due date. It is up to the student to prepare for each test. The timed tests are closed book non timed tests are open book. Students should plan to spend two weeks covering the materials for each test taking a test every other week. Test will be made available on Canvas five days prior to the due date and consisting of matching, multiple choice, multiple answer, and true false questions. If the internet is disrupted during the taking of a test contact the instructor and at his discretion the test may be retaken. Dual credit on site instructors have the option of setting the test dates and may be asked to verify internet interruption issues.

There will be 6 tests, a graded exercise, 2 quizzes, discussion questions, and a comprehensive final. Final grades are determined by the total number of points earned divided by the total available points, resulting in a percentage. The grading scale is shown below.
Points available:

| Test #1 water, carbohydrates, and lipids | 96 points closed book timed test |
| Test #2 protein                          | 100 points closed book timed test |
| Test #3 minerals                         | 100 points open book             |
| Test #4 vitamins                         | 90 points open book              |
| Test #5 digestion                        | 94 points closed book timed test |
| Homework assignment                      | 34 points closed book timed test |
| Test #6 sampling, analysis, and energy   | 82 points open book              |
| Water problems                           | 8                                |
| Energy review quiz                       | 10 points open book              |
| Discussion questions                     | 40 points                        |
| Final, comprehensive                     | 170 points closed book timed test |

Total 824 points

The instructor reserves the right to change points as conditions warrant.

Grading Scale:

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<tr>
<th>Letter</th>
<th>Range</th>
<th>Points</th>
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<tr>
<td>A+</td>
<td>100.0 – 100.0</td>
<td>4.00</td>
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<tr>
<td>A</td>
<td>90.0 – 99.9</td>
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<tr>
<td>A-</td>
<td>86.7 – 90.0</td>
<td>3.67</td>
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<tr>
<td>B+</td>
<td>83.3 – 86.7</td>
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<tr>
<td>B</td>
<td>80.0 – 83.3</td>
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<tr>
<td>B-</td>
<td>76.3 – 80.0</td>
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<tr>
<td>C+</td>
<td>73.3 – 76.3</td>
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<td>C</td>
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**Academic Honesty:** Students are expected to conduct themselves in conformity with the highest standards with regard to academic honesty. Violation of college, state, or federal standards with regard to plagiarism (see below), cheating, or falsification of official records will not be tolerated. Students violating such standards will be subject to disciplinary action the first offense will result in a dismissal from class and the second offense a dismissal from the institution.

**IDENTITY VERIFICATION:**

Dual credit students will be required to provide the name and contact information for a person within the school system who will be proctoring their test. This can be an Ag. Teacher, Guidance counselor, or other teaching personal. Other online students will be provided with a password for each test when they contact the instructor to open each test.
Schedule AND TEST DUE DATES:

**Week one:**
- Email instructor to verify blackboard access and link to Nutrition class
- Review the syllabus
- Take the pre test
- View lecture 1 “Introduction, definitions, and water” 39 minutes
- View lecture 2 “Carbohydrates” 39 minutes

**Week two:**
- View lecture 3 “Lipids” 24 minutes
- Use the study guide to prepare for test #1
  - Take test #1 Due by September 11

**Week three:**
- Read about protein in the text
- View lecture 4 “Protein” 25 minutes
- Finish lecture 4 “Protein” 30 minutes

**Week four:**
- Use the study guide to help prepare for the test over Protein
  - Take test #2 Due by September 25

**Week five:**
- Read the section on minerals in the text
- View lecture 5 “Minerals” 29 minutes
- Continue lecture 5 “Minerals” 30 minutes
- Finish lecture 5 “Minerals” 24 minutes

**Week six:**
- Use the study guide to prepare for test #3 over minerals
  - Take test #3 Due by October 9

**Week seven:**
- Read the section on vitamins in the text
- View lecture 6 “Vitamins” 25 minutes
- Finish lecture 6 “Vitamins” 38 minutes

**Week eight:**
- Study vitamins using the study guide
  - Take test #4 Due by October 23

**Week nine:**
- Read section on digestion in the text
- View lecture 7 “Digestion” 30 minutes
- Finish lecture 7 “Digestion” 44 minutes

**Week ten:**
- Watch the 3 videos on digestive systems and colic 12 minutes
- View lecture on “Metabolism”
- Watch the two YouTube videos on glycolysis and the Kreb cycle 40 minutes
- Prepare for test #5

**Week eleven:**
- Take test #5 Due by November 6
- Read chapter 2 in the text
- View lecture 9 “Lecture materials” 27 minutes
- Finish lecture 9 “lecture materials” 27 minutes

**Week twelve:**
- Watch two YouTube videos 12 minutes
- Print and study handouts
  - Do the graded home work over feed analysis Due by November 20

**Week thirteen:**
- View lecture 10 “Prussic acid, mold, and nitrates” 34 minutes
- Finish lecture 10 “Prussic acid, mold, and nitrates” 23 minutes
- Print and read the handouts

**Week fourteen:**
- Use the study guide to prepare for test #6
  - Take Test #6 Due by December 4

**Week fifteen:**
- Print and do the water problems work sheet and 8 point quiz
- View lecture “Energy in feed” 25 minutes and 10 point quiz
- Review all study guides and prepare for the comprehensive final

**Week sixteen:**
- Take the comprehensive final Due by December 11
Do the class evaluation

COMMUNICATION: The online instructor is available through e-mail or phone. Canvas can also be used through the discussion questions. Please limit phone calls to normal working hours. Allow 24 hours for responses to e-mails during the week and 48 hours over weekends and holidays. Whenever possible I will respond as soon as I can.

Technical support resources:

**Computer Help Center.** The Information Technology Services Computer Help Center at the University of Nebraska-Lincoln provides NCTA students with 24 hour access to help with issues such as accessing E-mail and Canvas and dealing with computer problems. (Web site: [http://its.unl.edu/helpcenter](http://its.unl.edu/helpcenter), E-mail: [mysupport@unl.edu](mailto:mysupport@unl.edu), Phone: toll-free (866) 472-3970)

**NCTA Computer Technology Assistance.** The NCTA director of instructional technology and telecom is available to assist with hardware, software and peripheral acquisition, set up and troubleshooting. Contact Tyler Faber at 308-367-5210, or email: [tfaber@nebraska.edu](mailto:tfaber@nebraska.edu)

**Student Quick Start Videos For Canvas**
[https://canvas.unl.edu/courses/1/pages/student-quick-start-video-tour](https://canvas.unl.edu/courses/1/pages/student-quick-start-video-tour)

Students with disabilities resources:

**Student Services Center.** NCTA is committed to equal access in education. The Disability Services Center assists online students with questions regarding eligibility and applying for accommodations, testing for learning disabilities, and development of Individualized Education Program (IEP) agreements. Financial aid counseling and assistance is also available online through telephone, email, Skype or Adobe connect. Contact Kevin Martin: 308-367-5217, or email: [Kmartin4@UNL.edu](mailto:Kmartin4@UNL.edu).


Windows 7,8 and 10 resources: [https://www.microsoft.com/en-us/Accessibility/windows](https://www.microsoft.com/en-us/Accessibility/windows)


Canvas resources: [https://community.canvaslms.com/docs/DOC-2061-accessibility-within-canvas](https://community.canvaslms.com/docs/DOC-2061-accessibility-within-canvas)

**TITLE IX:**
Title IX is a Federal civil rights law that prohibits discrimination on the basis of sex or gender in all programs and activities. The Nebraska College of Technical Agriculture will not discriminate on grounds of race, color, sex, national origin, or any other factor prohibited by law in providing any educational or other benefits or services. For more information or to report a Title IX incident, please contact Jennifer McConville, Title IX Coordinator, 308-367-5259, Ag All Room 25.