

Submit original with signatures + 1 copy + electronic copy to UAF Governance.  
 See <http://www.uaf.edu/uafgov/faculty/cd> for a complete description of the rules governing curriculum & course changes.

**TRIAL COURSE OR NEW COURSE PROPOSAL**

**SUBMITTED BY:**

<b>Department</b>	NRM	<b>College/School</b>	SNRAS
<b>Prepared by</b>	Bret Luick	<b>Phone</b>	474-6338
<b>Email Contact</b>	bluick@alaska.edu	<b>Faculty Contact</b>	Bret Luick

**1. ACTION DESIRED (CHECK ONE):**

Trial Course	<input checked="" type="checkbox"/>	New Course	<input type="checkbox"/>
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**2. COURSE IDENTIFICATION:**

Dept	NRM	Course #	394	No. of Credits	3
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Justify upper/lower division status & number of credits:

The course content requires a certain amount of background and commitment

**3. PROPOSED COURSE TITLE:** Applied Animal Nutrition in High Latitude Agriculture

**4. To be CROSS LISTED?** No If yes, Dept:   Course #    
 YES/NO  
 (Requires approval of both departments and deans involved. Add lines at end of form for such signatures.)

**5. To be STACKED?** No If yes, Dept.   Course #    
 YES/NO

**6. FREQUENCY OF OFFERING:** Every Spring  
 Fall, Spring, Summer (Every, or Even-numbered Years, or Odd-numbered Years) – or As Demand Warrants

**7. SEMESTER & YEAR OF FIRST OFFERING** (if approved) Spring 2011

**8. COURSE FORMAT:**

NOTE: Course hours may not be compressed into fewer than three days per credit. Any course compressed into fewer than six weeks must be approved by the college or school's curriculum council. Furthermore, any core course compressed to less than six weeks must be approved by the core review committee.

**COURSE FORMAT:** (check all that apply)  1  2  3  4  5  6 weeks to full semester

OTHER FORMAT (specify)

Mode of delivery (specify lecture, field trips, labs, etc)

**9. CONTACT HOURS PER WEEK:** 3 LECTURE hours/weeks 0 LAB hours /week 0 PRACTICUM hours /week

Note: # of credits are based on contact hours. 800 minutes of lecture=1 credit. 2400 minutes of lab in a science course=1 credit. 1600 minutes in non-science lab=1 credit. 2400-4800 minutes of practicum=1 credit. 2400-8000 minutes of internship=1 credit. This must match with the syllabus. See <http://www.uaf.edu/uafgov/faculty/cd/credits.html> for more information on number of credits.

OTHER HOURS (specify type)  

**10. COMPLETE CATALOG DESCRIPTION** including dept., number, title and credits (50 words or less, if possible):

NRM 394 3+0 Applied Animal Nutrition in High Latitude Agriculture

This course covers the essentials of nutrition theory and practice and contemporary issues in production animals.

11. **COURSE CLASSIFICATIONS:** (undergraduate courses only. Use approved criteria found on Page 10 & 17 of the manual. If justification is needed, attach on separate sheet.)

H = Humanities

S = Social Sciences

Will this course be used to fulfill a requirement for the baccalaureate core? YES  NO

IF YES, check which core requirements it could be used to fulfill:

O = Oral Intensive, Format 6

W = Writing Intensive, Format 7

Natural Science, Format 8

12. **COURSE REPEATABILITY:**

Is this course repeatable for credit? YES  NO

Justification: Indicate why the course can be repeated (for example, the course follows a different theme each time).

How many times may the course be repeated for credit?  TIMES

If the course can be repeated with variable credit, what is the maximum number of credit hours that may be earned for this course?  CREDITS

13. **GRADING SYSTEM:** Specify only one.

LETTER:

PASS/FAIL:

**RESTRICTIONS ON ENROLLMENT (if any)**

14. **PREREQUISITES**

BIOL F115X, BIOL F116X NRM 320

These will be required before the student is allowed to enroll in the course.

**RECOMMENDED**

CHEM F106X

Classes, etc. that student is strongly encouraged to complete prior to this course.

15. **SPECIAL RESTRICTIONS, CONDITIONS**

None

16. **PROPOSED COURSE FEES**

\$ 0

Has a memo been submitted through your dean to the Provost & VCAS for fee approval? Yes/No

No

17. **PREVIOUS HISTORY**

Has the course been offered as special topics or trial course previously? Yes/No

No

If yes, give semester, year, course #, etc.:

18. **ESTIMATED IMPACT**

WHAT IMPACT, IF ANY, WILL THIS HAVE ON BUDGET, FACILITIES/SPACE, FACULTY, ETC.

Minimal impact. Lecture room space.

19. **LIBRARY COLLECTIONS**

Have you contacted the library collection development officer (kljensen@alaska.edu, 474-6695) with regard to the adequacy of library/media collections, equipment, and services available for the proposed course? If so, give date of contact and resolution. If not, explain why not.

No

Yes

texts not currently available at UAF can be provided on hold by the instructor

20. **IMPACTS ON PROGRAMS/DEPTS**

What programs/departments will be affected by this proposed action? Include information on the Programs/Departments contacted (e.g., email, memo)

Since the course is not cross listed at this time, the course is not expected to compete for students in other programs.

**21. POSITIVE AND NEGATIVE IMPACTS**

Please specify **positive** and **negative** impacts on other courses, programs and departments resulting from the proposed action.

**Negative:** Presumably if the course becomes a regular part of the curriculum and becomes cross listed, then competition for students could occur

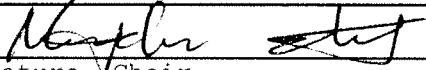
**Positive:** Animal nutrition is a basic course across land grant colleges, sometimes many courses are offered in the subject area: ruminant, non-ruminant, companion animals, digestive physiology, proteins, lipids, carbohydrates, amino acids, energetics and more. This course offers exposure to the wide spectrum of diet related variables important in animal care.

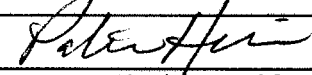
**JUSTIFICATION FOR ACTION REQUESTED**

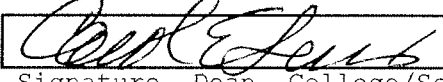
The purpose of the department and campus-wide curriculum committees is to scrutinize course change and new course applications to make sure that the quality of UAF education is not lowered as a result of the proposed change. Please address this in your response. This section needs to be self-explanatory. Use as much space as needed to fully justify the proposed course.

A knowledge of animal nutrition is essential preparation for students pursuing careers in animal and crop production, veterinary medicine as well as fisheries related work. This course is a practical survey of the dietary needs of production animals and the related physiological underpinnings.

**APPROVALS:**

 Date **9/15/2010**  
Signature, Chair,  
Program/Department of:

 Date **9-22-10**  
Signature, Chair, College/School Curriculum  
Council for: **SNRAS.**

 Date **9-22-10**  
Signature, Dean, College/School  
of: **SNRAS**

\_\_\_\_\_  
Signature of Provost (if applicable) Date \_\_\_\_\_

**Offerings above the level of approved programs must be approved in advance by the Provost.**

**ALL SIGNATURES MUST BE OBTAINED PRIOR TO SUBMISSION TO THE GOVERNANCE OFFICE**

\_\_\_\_\_  
Signature, Chair, UAF Faculty Senate Curriculum  
Review Committee Date \_\_\_\_\_

**ADDITIONAL SIGNATURES: (As needed for cross-listing and/or stacking)**

	Date	
Signature, Chair, Program/Department of:		
	Date	
Signature, Chair, College/School Curricula Council for:		
	Date	
Signature, Dean, College/School of:		

**ATTACH COMPLETE SYLLABUS (as part of this application).**

Note: The guidelines are online: <http://www.uaf.edu/uafgov/faculty/cd/syllabus.html>

The department and campus wide curriculum committees will review the syllabus to ensure that each of the items listed below are included. If items are missing or unclear, the proposed course change will be denied.

**SYLLABUS CHECKLIST FOR ALL UAF COURSES**

During the first week of class, instructors will distribute a course syllabus. Although modifications may be made throughout the semester, this document will contain the following information (as applicable to the discipline):

**1. Course information:**

Title,  number,  credits,  prerequisites,  location,  meeting time (make sure that contact hours are in line with credits).

**2. Instructor (and if applicable, Teaching Assistant) information:**

Name,  office location,  office hours,  telephone,  email address.

**3. Course readings/materials:**

Course textbook title,  author,  edition/publisher.  
 Supplementary readings (indicate whether  required or  recommended) and  
 any supplies required.

**4. Course description:**

Content of the course and how it fits into the broader curriculum;  
 Expected proficiencies required to undertake the course, if applicable.  
 Inclusion of catalog description is *strongly* recommended, and  
 Description in syllabus must be consistent with catalog course description.

**5.  Course Goals (general), and (see #6)**

**6.  Student Learning Outcomes (more specific)**

**7. Instructional methods:**

Describe the teaching techniques (eg: lecture, case study, small group discussion, private instruction, studio instruction, values clarification, games, journal writing, use of Blackboard, audio/video conferencing, etc.).

**8. Course calendar:**

A schedule of class topics and assignments must be included. Be specific so that it is clear that the instructor has thought this through and will not be making it up on the fly (e.g. it is not adequate to say "lab". Instead, give each lab a title that describes its content). You may call the outline Tentative or Work in Progress to allow for modifications during the semester.

**9. Course policies:**

Specify course rules, including your policies on attendance, tardiness, class participation, make-up exams, and plagiarism/academic integrity.

**10. Evaluation:**

Specify how students will be evaluated,  what factors will be included,  their relative value, and  
 how they will be tabulated into grades (on a curve, absolute scores, etc.)

**11. Support Services:**

Describe the student support services such as tutoring (local and/or regional) appropriate for the course.

**12. Disabilities Services:**

The Office of Disability Services implements the Americans with Disabilities Act (ADA), and insures that UAF students have equal access to the campus and course materials.

State that you will work with the Office of Disabilities Services (208 WHIT, 474-5655) to provide reasonable accommodation to students with disabilities."

## SNRAS High Latitude Agriculture

**NRM 394** A trial course in **Applied Animal Nutrition**.

### Syllabus

**Course Title:** NRM 394: Applied Animal Nutrition in High Latitude Agriculture.  
3 (3+0) credits. Trial Course

**Instructor:** Bret Luick, AHRB, UAF 907-474-6338, Office hours 2-4p and by appointment, as well as directly after class each week.

Email: [bluick@alaska.edu](mailto:bluick@alaska.edu)

**Meeting time:** Spring semester 2-5p Tuesdays

**Text:** No textbook is specified for this course, although several classic, standard and contemporary texts may be useful which students may choose to purchase independently. Several references will be on hold, including: Fire of Life, Max Kleiber, Applied Animal Nutrition, Contemporary Issues in Animal Agriculture and Comparative Animal Nutrition and Metabolism, all by Peter Cheeke; Animal Nutrition, Loosli et al.

**Course description:** Introduction to ruminant and non-ruminant nutrition, including energetics, macro- and micro-nutrients, digestion, growth, feed efficiency and lactation. Animal nutrition will be discussed in the context of societal issues each week, including feeds in competition with human food, feed additives, grazing and rangeland issues, industrialization and food safety and quality, bioethics, biotechnology and sustainable resource utilization and animal production systems.

**Course goals:** In general, students will be aware of the fundamental principles of animal nutrition. More specifically, students will be conversant on energetics, macro- and micro-nutrients, animal digestion and nutritional needs on a species basis. Secondly, students will be aware of the societal issues associated with animal production.

**Instructional technique:** Class meets once per week for 3 hours. Lecture, with case studies and discussion. Instructor notes and power point presentations will be available to students prior to lecture.

**Prerequisites:** BIOL F115X, BIOL F116X, NRM 320.

**Course policies:** Students are expected to attend lecture, participate in discussions and follow UAF academic policies regarding personal conduct and

academic integrity. Make-up exams will be allowed on a needs basis.

Mid term exam I	100 points
Mid term exam II	100
Mid term exam III	100
Mid term exam IV	100
Final exam	150
Subtotal	<u>550</u>
Term Project assignment	
Paper Selection	20
Written Paper	<u>60</u>
Sub total	<u>80</u>
Total	630 points

Final course grades will be assigned on the following basis:

> 97%	= A+
92 - 96.9%	= A
90 - 91.9%	= A- (567)
87 - 89.9%	= B+
82 - 86.9%	= B
80 - 81.9%	= B- (504)
77 - 79.9%	= C+
72 - 76.9%	= C
70 - 71.1%	= C- (441)
Etc.	

An additional 60 points may be added at the instructor's discretion for contribution to class discussion. Examinations will include 4 midterms, each worth 100 points. A comprehensive final will be offered, worth 150 points, and which substitutes for the lowest mid-term score, provided it improves the student's total points.

Office hours are offered to help students get the most from the course. This may include discussion of lecture materials, resolving examination answers, and so forth, according to the needs of students.

Under the requirements of the UAF Disabilities Services, reasonable accommodations will be provided to students with disabilities.

**Course calendar:**

Spring Semester 2011

First day of instruction      Thursday, Jan. 20

Spring break (no classes)      Monday - Friday, March 14 - 18  
University holiday      Friday      March 18  
UAF SpringFest (no classes)      Friday, April 29  
Last day of instruction      Friday, May 6  
Final examinations      May 9 - 12

## Session

1. Science of Nutrition
  1. Oxygen, Energy, Vitamins, Minerals
  2. World, US & Alaska livestock production
  3. Starvation
2. Body composition and water
  1. Tritiated water dilution
  2. Compartments
  3. Water gain & loss
  4. Kjeldahl analysis
  5. Organ systems
3. Digestion
  1. Markers & compartmental analysis
  2. Anatomy
  3. Animal feedstuffs
4. Exam I & Animals & human welfare
5. Energetics
  1. Calorimetry
  2. Energy balance
  3. Locomotion
  4. Scaling
6. Macronutrients;
  1. Protein & nitrogen balance
  2. Lipids
  3. Carbohydrates
7. Micronutrients;
  1. Feeding experiments
8. Exam II & Environmental impact of animal production
9. Growth & Lactation
  1. Heat increment of feeding
  2. Body composition in development
  3. Compensatory growth
  4. Feed efficiency & mass balance
10. Anti- & pro-nutritional factors
  1. Natural toxicants
  2. Imbalances



3. Protein quality
4. Probiotics
5. Resiliency: health & disease challenges
11. Laboratory animals
  1. dietary formulation
  2. diets for experimental animals
    1. Rat, mouse, gerbil, guinea pig, hamster, vole, fish
12. Exam III & Human & animal competition, biotechnology
13. Non-ruminants livestock & pets
  1. Swine
  2. Horse
  3. Avians
  4. Rabbits
  5. Dogs
  6. Cats
  7. Fur bearers
  8. Wild & exotics
14. Ruminants
  1. Microbial digestion
  2. Anatomy
  3. Feeding considerations
  4. Wild & exotics
15. Exam IV & Livestock integration & sustainability
16. Comprehensive Final Exam