Animal Nutrition – BIOL/BIMS 3300  
Department of Biology/Biomedical Sciences  
Spring 2017

A. COURSE INFORMATION

Course number/section: BIOL/BIMS 3300.001  
Class meeting time: Tuesday & Thursday 2:00-3:15 p.m.  
Class location: EN-106  
Course Website: 

B. INSTRUCTOR INFORMATION

Instructor: Dr. Anthony Siccardi  
Office location: Texas A&M AgriLife (4301 Waldron Road)  
Office hours: Monday, Wednesday, Friday 8:00 a.m. - 12:00 p.m. and by appointment  
Telephone: 361-244-3727  
e-mail: Asiccardi@ag.tamu.edu  
Appointments: Appointments can be made after class, by email or phone

C. COURSE DESCRIPTION

Catalog Course Description  
Examines the dietary requirements of both companion animals and livestock. Includes the anatomy, physiology and biochemistry of the gastrointestinal system, nutrient procurement and use, feed additives, growth stimulants, metabolic diseases, and diet therapy.

Extended Course Description
This course examines the dietary requirements of both companion animals and livestock. It includes the anatomy, physiology and biochemistry of the gastrointestinal system, nutrient acquisition and use, feed additives, metabolic diseases and diet therapy. I will take a comparative approach focusing on companion animals and livestock but will also discuss nutrient requirements and health of reptiles (alligators, lizards, turtles) and fish. I will use the human body as an example to discuss the general physiology of the digestive system in mammals. Activities that characterize animal nutrition include: a) molecular mechanisms of nutrient absorption, transport, storage and metabolism and the control of these processes; b) the relationship of diet, animal health and performance; c) means of improving the quality of animal feeds; d) assessment of nutrient status of animals.

D. PREREQUISITES AND COREQUISITES

Prerequisites  
BIOL 1407 and CHEM 3411

Corequisites  
CHEM 3412
E. **REQUIRED TEXTBOOK(S), READINGS AND SUPPLIES**


**Optional Textbook(s) or Other References**

None Required

**Supplies**

None required

F. **STUDENT LEARNING OUTCOMES AND ASSESSMENT**

This course seeks to give students an understanding of comparative animal nutrition focusing on companion animals such as dogs, cats, fish and birds as well as horses, cows and sheep. Although the main emphasis of this course is an understanding of the structure and function of the digestive system, we will also discuss how abnormal conditions serve as natural experiments that help to elucidate normal structure and function. **To do well in the course, students must attend and participate in lectures, read the assigned material and mentally organize information from their instructor and their readings.** By the end of this course, the student should be able to:

- Understand and correctly use scientific terminology.
- Recognize and identify structures in the animal digestive systems.
- Understand and explain how structures and their components interact to perform one or more functions.
- Understand the basic anatomy of digestion as it relates to nutrition.
- Understand molecular mechanisms of nutrient absorption, transport, storage and metabolism and the control of these processes.
- Be able to identify what constitutes a complete diet and why.
- Understand the relationship of diet, animal health and performance.

G. **INSTRUCTIONAL METHODS AND ACTIVITIES**

Class lectures will be delivered through PowerPoint presentations. Presentations will contain embedded videos and pictures (where appropriate) to enhance learning opportunities. Students are expected to participate in class discussions.

H. **MAJOR COURSE REQUIREMENTS AND GRADING**

Your final grade is based on the accumulation of points according to the weights (%) listed in
the table below. Lecture exams will be noncumulative (i.e. each examination covers material from one specific section of the course). The final examination is comprehensive. If your average from the three lecture exams is a B or higher you can skip the final. **You must take the final exam if your average grade from the three lecture exams is a C (79) or lower.** If you earn a higher score on the final exam than on one of your lecture exams it will be doubled to replace the lowest examination grade.

Sample calculations:
(grade exam 1)(0.33) + (grade exam 2)(0.33) + (grade exam 3)(0.34) = class grade. **If <80 you must take the final exam.** If your grade is >80 the final is optional. If you choose to take the final your grade will be calculated as listed below.

If taking the final and your final exam grade is greater than 1 lecture exam grade:
(grade highest exam)(0.25) + (grade next highest exam)(0.25) + (final exam)(0.50) = class grade. In this case the final exam counts twice and replaces the grade from your lowest lecture examination.

If taking the final and you final exam grade is not greater than 1 lecture exam grade:
(grade exam 1)(0.25) + (grade exam 2)(0.25) + (grade exam 3)(0.25) + (final exam)(0.25) = class grade.

Questions for the lecture examinations will come primarily from material covered in the lectures. Examinations will be multiple-choice, T/F, labeling, definition, short answer and/or drawings.

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>% of FINAL GRADE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture Exam 1</td>
<td>33</td>
</tr>
<tr>
<td>Lecture Exam 2</td>
<td>33</td>
</tr>
<tr>
<td>Lecture Exam 3</td>
<td>34</td>
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<tr>
<td>Final Exam*</td>
<td>Up to 50</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>100</strong></td>
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</tbody>
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Grading Scale: A = 100-90 points, B = 89-80 points, C = 79-70 points, D = 69-60, F < 60 points

*See explanation above for final exam

I. **COURSE CONTENT/SCHEDULE**

<table>
<thead>
<tr>
<th>DATE</th>
<th>TOPIC</th>
</tr>
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<tbody>
<tr>
<td>Jan. 19</td>
<td>Introduction</td>
</tr>
<tr>
<td>Jan. 24</td>
<td>Life cycle and nutrient requirements</td>
</tr>
<tr>
<td>Date</td>
<td>Topic</td>
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<td>----------------------------------------------------------------------</td>
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<tr>
<td>Jan. 26</td>
<td>Digestive and metabolic systems</td>
</tr>
<tr>
<td>Jan. 31</td>
<td>Digestive and metabolic systems</td>
</tr>
<tr>
<td>Feb. 2</td>
<td>Stomach</td>
</tr>
<tr>
<td>Feb. 7</td>
<td>Small intestine/pancreas</td>
</tr>
<tr>
<td>Feb. 9</td>
<td>Liver/large intestine</td>
</tr>
<tr>
<td>Feb. 14</td>
<td>Basics of metabolism</td>
</tr>
<tr>
<td>Feb. 16</td>
<td>Exam Review</td>
</tr>
<tr>
<td><strong>Feb. 21</strong></td>
<td><strong>First Lecture Exam (Covers all material up to this point)</strong></td>
</tr>
<tr>
<td>Feb. 23</td>
<td>Basics of metabolism</td>
</tr>
<tr>
<td>Feb. 28</td>
<td>Metabolism/digestion ruminants and non ruminants</td>
</tr>
<tr>
<td>Mar. 2</td>
<td>Water</td>
</tr>
<tr>
<td>Mar. 7</td>
<td>Energy</td>
</tr>
<tr>
<td>Mar. 9</td>
<td>Feed Ingredients</td>
</tr>
<tr>
<td><strong>Mar. 14</strong></td>
<td><strong>Spring Break (No Class)</strong></td>
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<tr>
<td><strong>Mar. 16</strong></td>
<td><strong>Spring Break (No Class)</strong></td>
</tr>
<tr>
<td>Mar. 21</td>
<td>Feed formulation and manufacture</td>
</tr>
<tr>
<td>Mar. 23</td>
<td>Exam Review</td>
</tr>
<tr>
<td><strong>Mar. 28</strong></td>
<td><strong>Second Lecture Exam</strong></td>
</tr>
<tr>
<td>Mar. 30</td>
<td>Nutrition of cats</td>
</tr>
<tr>
<td>Apr. 4</td>
<td>Nutrition of dogs</td>
</tr>
<tr>
<td>Apr. 6</td>
<td>Nutrition of horses</td>
</tr>
<tr>
<td>Apr. 11</td>
<td>Nutrition of rabbits</td>
</tr>
<tr>
<td>Apr. 13</td>
<td>Nutrition of rodents</td>
</tr>
<tr>
<td>Apr. 18</td>
<td>Nutrition of reptiles</td>
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<tr>
<td>Apr. 20</td>
<td>Nutrition of pet birds</td>
</tr>
<tr>
<td>Apr. 25</td>
<td>Nutrition of poultry</td>
</tr>
<tr>
<td>Apr. 27</td>
<td>Exam Review</td>
</tr>
<tr>
<td><strong>May 2</strong></td>
<td><strong>Third Lecture Exam</strong></td>
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<tr>
<td><strong>May 9</strong></td>
<td><strong>Final Exam (1:45-4:15)</strong></td>
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Note: Changes in this course schedule may be necessary and will be announced to the class by the Instructor. The assignments and exams shown are directly related to the Student Learning Outcomes described in Section F.

**J. COURSE POLICIES**
Attendance/Tardiness
Attendance is mandatory. Students are expected to attend all classes. Should you miss a lecture, it is your responsibility to find out what you missed, get notes, learn about changes in the syllabus, etc. Failure to attend more than two class lectures without the instructor’s prior consent will constitute a loss of 10 points from the student’s final grade. It is the student’s responsibility to check their own personal schedules to insure class attendance.

Late Work and Make-up Exams
There are no excused absences. A missed grade will result in a score of ‘0’ for that assignment. Students with a university approved scheduled absence (athletics, military duty, etc.) must contact the lecture instructor well in advance of a scheduled absence. Exams may be taken early in those specific cases. Students who do not arrange to take exams ahead of time will not be eligible for this special consideration. A written excuse from the university department involved is required.

Extra Credit
No individual extra credit assignments will be available in class. Extra points are built into all examinations. I may also provide opportunities for the entire class to earn bonus points. Such opportunities may be offered or announced only once so be in class on time and stay for the entire period.

Cell Phone Use
No cell phone use is permitted in class. Please silence your phones prior to the start of class.

Laptop Use
Laptop and tablets may be used to take notes and follow provided PowerPoint presentations.

Food in Class
No food and drinks are permitted in class.

Missed Exam
A missed grade will result in a score of ‘0’ for that assignment. Students with a university approved scheduled absence (athletics, military duty, etc.) must contact the lecture instructor well in advance of a scheduled absence. Exams may be taken early in those specific cases. Students who do not arrange to take exams ahead of time will not be eligible for this special consideration. A written excuse from the university department involved is required.

Participation
Class participation is expected during lectures.

Others
None
K. COLLEGE AND UNIVERSITY POLICIES

- **Academic Integrity (University)**
  University students are expected to conduct themselves in accordance with the highest standards of academic honesty. Academic misconduct for which a student is subject to penalty includes all forms of cheating, such as illicit possession of examinations or examination materials, falsification, forgery, complicity or plagiarism. (Plagiarism is the presentation of the work of another as one’s own work.) In this class, academic misconduct or complicity in an act of academic misconduct on an assignment or test will result in a failing grade.

- **Classroom/Professional Behavior**
  Texas A&M University-Corpus Christi, as an academic community, requires that each individual respect the needs of others to study and learn in a peaceful atmosphere. Under Article III of the Student Code of Conduct, classroom behavior that interferes with either (a) the instructor’s ability to conduct the class or (b) the ability of other students to profit from the instructional program may be considered a breach of the peace and is subject to disciplinary sanction outlined in article VII of the Student Code of Conduct. Students engaging in unacceptable behavior may be instructed to leave the classroom. This prohibition applies to all instructional forums, including classrooms, electronic classrooms, labs, discussion groups, field trips, etc.

- **Statement of Civility**
  Texas A&M University-Corpus Christi has a diverse student population that represents the population of the state. Our goal is to provide you with a high quality educational experience that is free from repression. You are responsible for following the rules of the University, city, state and federal government. We expect that you will behave in a manner that is dignified, respectful and courteous to all people, regardless of sex, ethnic/racial origin, religious background, sexual orientation or disability. Behaviors that infringe on the rights of another individual will not be tolerated.

- **Deadline for Dropping a Course with a Grade of W (University)**
  The grade of W will be assigned to any student officially dropping a course. Please consult with the instructor before you decide to drop to be sure it is the best thing to do. Just stopping attendance and participation WILL NOT automatically result in your being dropped from the class. Should dropping the course be the best course of action, visit the Office of the University Registrar for the Course Drop Form that must submitted. No student is eligible to receive a W without completing the official drop process by this deadline. Please consult the Academic Calendar (http://www.tamucc.edu/academics/calendar/) for the last day to drop a course.

- **Grade Appeals (College of Science and Engineering)**
  As stated in University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures, a student who believes that he or she has not been held to appropriate academic standards
as outlined in the class syllabus, equitable evaluation procedures, or appropriate grading, may appeal the final grade given in the course. The burden of proof is upon the student to demonstrate the appropriateness of the appeal. A student with a complaint about a grade is encouraged to first discuss the matter with the instructor. For complete details, including the responsibilities of the parties involved in the process and the number of days allowed for completing the steps in the process, see University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures. These documents are accessible through the University Rules website at http://www.tamucc.edu/provost/university_rules/index.html, and the College of Science and Engineering Grade Appeals webpage at http://sci.tamucc.edu/students/GradeAppeal.html. For assistance and/or guidance in the grade appeal process, students may contact the chair or director of the appropriate department or school, the Office of the College of Science and Engineering Dean, or the Office of the Provost.

- **Disability Services**
  The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please call (361) 825-5816 or visit Disability Services in Corpus Christi Hall 116.

  If you are a returning veteran and are experiencing cognitive and/or physical access issues in the classroom or on campus, please contact the Disability Services office for assistance at (361) 825-5816.

  http://disabilityservices.tamucc.edu/

- **Statement of Academic Continuity**
  In the event of an unforeseen adverse event, such as a major hurricane and classes could not be held on the campus of Texas A&M University–Corpus Christi; this course would continue through the use of Blackboard and/or email. In addition, the syllabus and class activities may be modified to allow continuation of the course. Ideally, University facilities (i.e., emails, web sites, and Blackboard) will be operational within two days of the closing of the physical campus. However, students need to make certain that the course instructor has a primary and a secondary means of contacting each student.

L. **OTHER INFORMATION**

- **Academic Advising**
  The College of Science & Engineering requires that students meet with an Academic Advisor as soon as they are ready to declare a major. The Academic Advisor will set up a degree plan, which must be signed by the student, a faculty mentor, and the
department chair. Meetings are by appointment only; advisors do not take walk-ins. Please call or stop by the Advising Center to check availability and schedule an appointment. The College’s Academic Advising Center is located in Center for Instruction 350 or can be reached at (361) 825-3928.

GENERAL DISCLAIMER
I reserve the right to modify the information, schedule, assignments, deadlines, and course policies in this syllabus if and when necessary. I will announce such changes in a timely manner during regularly scheduled lecture periods.