ANIMAL NUTRITION

BIOL/BIMS 3300.001
Engineering (EN) 106
TR 2:00-3:15 PM

Instructor: Manuela Gardner, PhD.
Office: EN - 314E
Phone: 361-825-3959
E-mail: Manuela.Gardner@tamucc.edu
Office hours: TBA.

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.

The instructor of this course will provide the students with: (1) information in the form of lectures, films, handouts, assigned readings and supplemental readings; (2) advice, supervision and guidance.

PREREQUISITE: BIOL 1407 and CHEM 3411. Prerequisite or Corequisite: CHEM 3412.

# ANIMAL NUTRITION

## TENTATIVE LECTURE SCHEDULE:

<table>
<thead>
<tr>
<th>Week</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (January 22)</td>
<td>Introduction</td>
</tr>
<tr>
<td>2 (January 27, 29)</td>
<td>Importance of nutrition; Why and how to study nutrition</td>
</tr>
<tr>
<td>3 (February 3, 5)</td>
<td>Comparative digestive Anatomy</td>
</tr>
<tr>
<td>4 (February 10, 12)</td>
<td>Digestion, Absorption and Metabolism of nutrients</td>
</tr>
<tr>
<td>5 (February 17, 19)</td>
<td>Digestion, Absorption and Metabolism of nutrients</td>
</tr>
<tr>
<td>6 (February 24, 26)</td>
<td>Test 1: 2/24; Digestion, Absorption and Metabolism of nutrients</td>
</tr>
<tr>
<td>7 (March 3, 5)</td>
<td>Urinary system and nutrition</td>
</tr>
<tr>
<td>8 (March 10, 12)</td>
<td>Urinary system and nutrition</td>
</tr>
<tr>
<td>8 (March 16-20)</td>
<td>Spring Break</td>
</tr>
<tr>
<td>9 (March 24, 26)</td>
<td>Health and specific nutrition of selected animals;</td>
</tr>
<tr>
<td>11 (March 31, April 2)</td>
<td>Test 2: 3/31; Health and specific nutrition of selected animals</td>
</tr>
<tr>
<td>12 (April 7, 9)</td>
<td>Health and specific nutrition of selected animals; Presentations</td>
</tr>
<tr>
<td>13 (April 14, 16)</td>
<td>Health and specific nutrition of selected animals; Presentations</td>
</tr>
<tr>
<td>14 (April 21, 23)</td>
<td>Health and specific nutrition of selected animals; Presentations</td>
</tr>
<tr>
<td>15 (April 28, 30)</td>
<td>Health and specific nutrition of selected animals; Test 3: 4/30;</td>
</tr>
<tr>
<td>16 (May 5)</td>
<td>review for final</td>
</tr>
</tbody>
</table>

May 13: 1:45 pm to 4:15 pm Final exam (Comprehensive)

## FINAL GRADING:
The final grading scale will also be determined at the end of the semester, but the cut-off for each grade will be no higher than the following:

- A ≥ 90% > B ≥ 80% > C ≥ 70% > D ≥ 60% > F

## LECTURE EXAMINATIONS:
I will give three examinations and one final during the course. I will be taking questions for these tests primarily from material covered in the lectures. Examinations will be multiple-choice, labeling, short answer questions and/or drawings. The three lecture examinations are sequential (i.e., each examination covers material from one specific section of the course). The final examination is comprehensive (i.e., covers material from the entire course).

- If your average grade from the three lecture exams is a B or higher, you can skip the final. The final is redemptive. In other words, if you earn a higher score on the final than on one of your lecture exams, it will be doubled to replace your lowest examination grade: The average of the two highest non-final examinations plus double (2x) the final examination.
ANIMAL NUTRITION

• You must take the final if your average grade from the three lecture exams is a C (79) or lower.

"If you do not take the final (i.e. as stated in the previous sentence), I will count the final as a zero and it will be part of your grade for the course i.e in this case it will NOT be redemptive."

Because of this flexibility, however, no make-up examinations are allowed, except in extreme emergency situations.

BONUS POINTS: No individual extra credit assignments will be available in this class. I may provide opportunities for the entire class to earn additional bonus points (e.g., attendance, video assignments, written reports, library or web exercises, un-announced quizzes, etc.). Such opportunities may be offered or announced only once, so be in class, be on time and stay for the entire period. Extra points are also built into all examinations (as extra questions). Bonus points (from quizzes, exercises, etc.) cannot be made up—period.

Presentations: You can earn extra credit by giving a short presentation about related topics discussed in lecture. Details will be discussed further in lecture.

Miscellaneous: Bring two #2 pencils to each lecture examination (including the final examination); I neither provide nor sell pencils. I will provide Scantron sheets for you. After an examination is returned, you have one (1) week to notify me of clerical, mathematical, and/or other errors. I will rectify any such errors, but I will not change a legitimate grade just because you "need" it. I am available for consultation and extra help, but it is the student’s responsibility to request help.

Spelling and Legibility: Spelling counts. If I can’t identify the word, I won’t give you credit. Also, if I can’t read your answers, I won’t give you credit.

STUDENT LEARNING OUTCOMES: 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 instructors, their readings and their laboratory work. For all components that are examined within each topic in the schedule, the student will be expected to:
ANIMAL NUTRITION

- 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.

Dropping a Class*
I hope that you never find it necessary to drop this or any other class. However, events can sometimes occur that make dropping a course necessary or wise. Please consult with me before you decide to drop to be sure it is the best thing to do. Should dropping the course be the best course of action, you must initiate the process to drop the course by going to the Student Services Center and filling out a course drop form. Just stopping attendance and participation WILL NOT automatically result in your being dropped from the class. (April 10, 2015) is the last day to drop a class with an automatic grade of “W” this term.

Grade Appeals)**
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 (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.

Disabilities Accommodations***
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 or visit Disability Services at (361) 825-5816 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.

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.

*Recommended by university, language provided that mirrors language used in other publications such as the student handbook or rules/procedures.

**Recommended by university, select one from the two items regarding behavior/civility or insert a similar statement based on your class needs.

***Required by SACS or HB2504—language must be included

ATTENDANCE POLICIES: Attendance is the student’s responsibility and students are expected to attend every class.

Lecture exams: If you arrive after a student has left the exam, you can't take the exam and will receive a 0 for that exam.

ABSENCES: You are responsible for the material covered and assignments made in every lecture and laboratory regardless of whether you attend it. "I came in late and didn’t hear about the assignment," is never an acceptable excuse. It is always your responsibility to determine what happened in class or laboratory during your absence. You must obtain class or laboratory notes from other students (i.e., I do not "share" my notes).

Points missed because of an unexcused absence (including tardiness and leaving early) cannot be recovered. An excused absence is emergency allows us to make alternative arrangements if necessary. The documentation required for an absence to be excused must be…

- from an appropriate source (e.g., doctor, dentist, funeral director) who states the nature of the event that caused (or will cause) your absence. Also must state appropriate date(s) and times.
UNACCEPTABLE EXCUSES: Only unavoidable absences are excused, so you should schedule routine personal events (e.g., vacations, weddings, reunions, non-emergency medical or dental visits, parent-teacher conferences, household or auto repairs) to avoid conflicts with your classes. Oversleeping is NEVER an acceptable excuse. Parking is NEVER an acceptable excuse. Employment conflicts are not acceptable excuses for absences, tardiness, or leaving class early. Once enrolled in a class, it is the student’s responsibility to arrange his or her work schedule so that no regularly scheduled class, laboratory, or examination time is missed. Texas waives jury duty for students, so jury duty is not an acceptable excuse.

LATE ASSIGNMENTS: You may always turn in assignments early. Except for excused absences, late assignments will not be accepted. If you know that you will have an excused absence when an assignment is due, you must turn in that assignment before its due date. You should turn in assignments that were missed because of an unexpected, excused absence as soon as possible, and the deadline for accepting this type of late assignment is one (1) week after the original due date. Any situations for which you cannot provide an acceptable excuse as outlined above (e.g., “I have an excuse, but it is too personal to discuss with you”) will be referred Student Affairs.

EXPECTATIONS: You are adult University students. I will treat you as such, and I will expect you to act as such. You will act with courtesy and respect. I will not tolerate disruptive, disrespectful, or abusive behavior/language directed toward anyone in this class (i.e., student or instructor). Violations range from talking during class to outright insubordination, and will result in penalties that range from the student being asked to stop to the student being “escorted” from the class - permanently.
Cellular phones (including text messaging), pagers, and other “beepers” must be turned off in the classroom. I will remove points from your grade if you do not respect these rules. I will make exceptions for certain “emergency” personnel, but you must see me to obtain this. Children are not allowed in the rooms during lecture or laboratory periods, or when the child’s guardian is working or studying “after hours.”

You may use your computers to take notes but any disruptive behavior (Facebook, U-tube, etc) will result in loss of points.

Food and drinks are not allowed in classrooms, including the laboratory. You may not have any food or drink during exams.

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 (can be in place of classroom/professional behavior)**
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.

LEARNING: Learning is more than just reading, taking notes and memorizing. Reading and taking notes puts information in short-term memory where it is forgotten quickly unless you do something with it. Memorizing, though important, is but the first step in the learning process. As university students, you should be able to link, combine and synthesize the bits of data that you memorize into useful concepts.

Academic Integrity/Plagiarism*
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.

**SCHOLASTIC DISHONESTY WILL NOT BE TOLERATED.** It will be prosecuted to the full extent of University regulations (see the Student Handbook and the Catalog 2014-15: Texas A&M University-Corpus Christi). The following procedures will be enforced:

- You must be prepared to present a photo ID at all examinations.
- Different test forms may be prepared for a single examination. To ensure that the appropriate key will be used to grade your answer sheet, always follow instructions on the test or answer sheet, or given orally by the instructor.
- If you leave an examination room—for any reason—you must hand in your answer sheet and you will not be allowed to resume the examination. Attend to personal matters (e.g., rest room visits) before the examination.
- **Be on time!** Anyone arriving after someone has completed an examination and left the room will not be allowed to take that examination.
- Any form of cheating in lecture will result in an F in the course.

**Academic Advising:** The College of Science and Technology 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. The College’s Academic Advising Center is located in the Center for Instruction (CI), Suite 350, and can be reached at 825-3928.

**SUPPLEMENTAL INSTRUCTION (SI), TUTORING AND OTHER SERVICES:** To be successful in this course, and most others, you must cultivate good note-taking skills, organization skills, study habits, and test-taking strategies from the very beginning. Your lecture and laboratory instructors are always available for help, but don’t wait until it is too late! Students who have done well in this class in the past may have been hired to lead Supplemental Instruction (SI) sessions outside of class meeting times. You will receive a schedule of SI sessions separately from this syllabus. Please take advantage of your SI leader’s expertise. Attend SI sessions on a regular basis; don’t wait until the session before an examination to start attending SI sessions. A great way to prepare for the comprehensive final is to attend the SI session just after an examination. At these sessions, your SI leader can review any questions you had difficulty
ANSWERING CORRECTLY: Asking questions about the questions you did not answer correctly will help you answer other questions about that concept correctly if they appear on the comprehensive final.

The Center for Academic Student Achievement (CASA) (825-5933) provides free tutoring, test-taking strategies, and extra help. Take advantage of this service! The center has copies of the text and CD-ROM and is an invaluable source for help. In addition, tutors may be set up for this class specifically and a schedule with times and location will be placed on the website at the beginning of the semester. Should you have test anxiety, stress problems or need help with study skills, the University Counseling Center (University Center, 825-2703) also provides a free service.

GENERAL DISCLAIMER: We reserve the right to modify the information, schedules, assignments, deadlines, and policies in this syllabus if and when necessary. Whenever possible, we will announce such changes in a timely manner during regularly scheduled lecture or laboratory periods. We will not attempt to contact students who were absent when an announcement was made. Nevertheless, all students are responsible for abiding by all announced changes, and it is a student’s responsibility to obtain this information. In rare cases, some modifications may be implemented without prior warning.