BIOMED 4001

**Topics: Canine and Feline Nutrition**

**COURSE PROFILE**

Course Description An understanding of nutrition is essential for anyone who works with companion animals, especially dogs and cats. This course is primarily intended for veterinary nurses and technicians and may also be useful for undergraduate students in animal sciences, biology, biochemistry, and related fields including pre-veterinary.

Instructors Craig Datz, DVM, MS, DABVP, DACVN

Adjunct Associate Professor

College of Veterinary Medicine

Phone: 636-328-4637

Email: [datzc@missouri.edu](mailto:datzc@missouri.edu)

Allison Wara, DVM, DACVN

Adjunct Assistant Associate Professor

College of Veterinary Medicine

Phone: 613-407-5221

Email: [waraa@missouri.edu](mailto:waraa@missouri.edu)

Major Objectives After completion of the course, you will be able to:

1. List the essential nutrients required by dogs and cats and describe their function, metabolism, and effects of deficiency and excess.

2. Explain energy requirements and calculate appropriate caloric needs of pets in different lifestages and environments.

3. Describe how commercial pet food is formulated, produced and marketed and interpret labels, advertising, and marketing claims.

4. Evaluate pets for obesity and design and implement feeding strategies to treat and prevent this condition.

Prerequisites 1. AAS or equivalent degree in veterinary technology from an American Veterinary Medical Association-accredited program or instructor’s permission

2. College-level (undergraduate) courses (minimum 3 credit hours each) in biology and chemistry

Online course access You may access the course via <http://courses.missouri.edu>. Under course login, select Canvas and enter your PawPrint. If you have difficulty logging in to the course or you do not see the course listed, please contact the Mizzou IT Help Desk at 573-882-5000. You must enable Compatibility View with Internet Explorer 11.

Delivery This course is delivered completely online. You are not required to attend class at regular times; however, it is important that you follow the attendance/participation guidelines and meet due dates and deadlines for readings, assignments, quizzes, and exams. Communications will be through the discussion board, announcements, and email.

Course delivery strategies may include: reading from required textbook(s), reading resources linked to the Internet, use of the discussion board, use of the Internet, and e-mail.

Organization Course materials are located in Canvas under the Modules tab. Weeks are found under Units. Sessions are under Weeks. Further instructions for finding and using course materials are provided in Canvas.

Required Materials Case LP, Daristotle L, Hayek MG, Raasch MF. Canine and feline nutrition (3rd edition). Mosby Elsevier, 2011.

Supplemental Materials Hand MS et al (eds). Small animal clinical nutrition(5th ed). Mark Morris Associates, 2010. There is a free online version available at <http://bookstore.markmorrisinstitute.org/t/digital-books/sacn5-chapters-downloadable>

Datz CA, Wara A. Companion animal nutrition, in Bassert JM, Beal AD, Samples OM (eds). Clinical textbook for veterinary technicians. Elsevier, 2018, pp 274-316.

**EVALUATION OF**

**STUDENT**

**PERFORMANCE**

Satisfactory

Performance There will be 1000 possible points in the course. A portion of the possible points will be achieved each week. More than 600 points are required for a passing grade. A midterm exam and a final exam are worth 525 points total and both must be proctored. The remaining 475 points will be based on weekly quiz scores (375 total points) and a written assignment (100 points). The instructor reserves the right to adjust final grades if no student achieves 100% of possible points in the course. Students with less than 61% at mid-term will receive a warning. Grades will be available in Canvas. To insure confidentiality, they will not be sent by email.

Exams and Quizzes Exams are available only under the supervision of a proctor. A lockdown browser will be used as your proctor allowing you to take your exams in any private room during a 3-day window of opportunities. You may take an exam only once. You must complete the exam once you start it. You may NOT come back to the exam later.

This course uses weekly online quizzes to assess your comprehension of the assigned readings. These quizzes will be available in the Quizzes area of Canvas every Monday at 8 am until Sunday at 11:59 PM (after midnight, quizzes will not be available). Quizzes are timed and you will have 15 minutes to complete 5 multiple-choice questions. You may take the quiz only once. The following are key considerations to successfully completing a quiz:

* Complete all assigned readings prior to accessing the online quiz.
* Force completion is turned ON: you must complete the quiz once you start it – you may not come back to the quiz later. If you are disconnected, send email to your instructors immediately. After contacting your instructors, please send an email to [canvas@missouri.edu](mailto:canvas@missouri.edu), with your name, username, course name, the title of the quiz or assignment, and a description of the problem.
* To ensure Canvas logs every answer, click the Save button at the bottom of the page after each question. You must click Submit in order to have your quiz graded.
* You must enable Compatibility View with Internet Explorer 11. A complete list of supported browsers is available [online](https://courses.missouri.edu/students/blackboard/software.php#softwareneeded).

Grading The grading scale will be A to F, including some pluses and minuses but no A+, C+, C-, D+, or D-. Grades will be based on the following scale:

96-100% = A

91-95% = A-

88-90% = B+

84-87% = B

81-83% = B-

71-80% = C

61-70% = D

60% or less = F

Note: A Certificate in Biomedical Technology requires at least a C grade in this course, plus a total of 15 credit hours BIOMED courses with an average GPA in all BIOMED courses of 3.0.

Points used in grading this course:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Unit | Exam | Quiz |  | Total |
| 1 | --- | 50 |  | 50 |
| 2 | --- | 50 |  | 50 |
| 3 | --- | 50 |  | 50 |
| 4  Midterm Exam | ---  225 | 50  --- |  | 50  225 |
| 5 | --- | 50 |  | 50 |
| 6 | --- | 50 |  | 50 |
| 7  8  Assignment | ---  ---  100 | 50  50  --- |  | 50  25  100 |
| Final Exam | 300 |  |  | 300 |
| Total Points | | | | 1,000 |

**COURSE**

**SCHEDULE**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Unit/Session | Reading Assignments | Other Assignments |
|  | 1: Basics of Nutrition I  1: Energy and Water I  2: Energy and Water II  3: Carbohydrates  4: Fats  5: Protein  6: Amino Acids | 1-6  6-12  13-16  17-20  21-25  21-25 | Quizzes |
|  | 2: Basics of Nutrition II  7: Vitamins I  8: Vitamins II  9: Minerals I  10: Minerals II  11: Digestion and Absorption I  12: Digestion and Absorption II | 27-32  32-36  37-40  40-44  45-49  49-53 | Quizzes |
|  | 3: Nutrient Requirements of Dogs and Cats I  13: Energy Balance I  14: Energy Balance II  15: Carbohydrate Metabolism  16: Fat Requirements  17: Protein Requirements I  18: Protein Requirements II | 59-65  66-73  75-79  81-88  89-95  95-106 | Quizzes |
|  | 4: Nutrient Requirements of Dogs and Cats II, Pet Foods  19: Nutritional Idiocyncrasies of the Cat  20: Vitamin and Mineral Requirements I  21: Vitamin and Mineral Requirements II  22: History and Regulation of Pet Foods  23: Pet Food Labels I  24: Pet Food Labels II      PROCTORED EXAM #1 | 57-58  107-111  111-117  121-129  131-137  137-139 | Quizzes  Midterm exam |
|  | 5: Pet Foods I  25: Nutrient Content of Pet Foods I  26: Nutrient Content of Pet Foods II  27: Nutrient Content of Pet Foods III  28: Types of Pet Foods I  29: Types of Pet Foods II  30: Evaluation of Pet Foods | 141-147  147-155  155-162  163-167  167-176  177-187 | Quizzes  Assignment |
|  | 6: Feeding Management Throughout the Life Cycle I  31: Feeding Regimens for Dogs and Cats  32: Pregnancy and Lactation  33: Nutritional Care of Neonatal Puppies and Kittens  34: Growth I  35: Growth II  36: Adult Maintenance | 189-198  199-207  209-219  221-226  226-237  239-242 | Quizzes |
|  | 7: Feeding Management Throughout the Life Cycle II  37: Performance I  38: Performance II  39: Geriatrics I  40: Geriatrics II  41: Common Nutritional Myths and Feeding Practices I  42: Common Nutritional Myths and Feeding Practices II      8. Nutritionally Responsive Disorders  43: Development and Treatment of Obesity I  44: Development and Treatment of Obesity II  45: Development and Treatment of Obesity III  PROCTORED EXAM #2 | 243-250  250-260  261-267  268-275  277-286  286-294  295, 313-321  322-326  326-342 | Quizzes  Final exam |
|  |  |  |  |