

Principles of Animal Biology 806-105
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Fall 2009

Welcome to Animal Biology 105! This **syllabus** is your roadmap for the class. In it, you'll find

- [General information on goals of the class and logistics](#),
- [My philosophy](#),
- [My grading policy](#),
- [How to be an effective reader](#),
- [How to get help when you need it](#),
- Information on what [supplies and books](#) you need for the class,
- [Weekly topics and reading assignments](#) (including information about labs),

General Information

Goals of the class: The goal of Animal Biology 105 is for Veterinary Technician and Laboratory Animal Technician students to gain the background in basic biology they need to be knowledgeable and effective technicians. This includes learning to understand and apply critical thinking skills, understanding animal body systems, and interpreting scientific information.

How the class works: We will meet three times a week in a classroom. During a class period we may do group activities, watch videos, take exams, or I may lecture. There will almost always be a reading assignment for each class. ***Do the reading assignment before class!*** I am going to assume you have read the assignment as I prepare for class; if you have not read it, you will probably not understand or remember what we cover (see effective reading section).

Once a week, you will have a lab session. Labs are a chance to gain hands-on experience of what you are learning. They are fun and interesting and great if you are more of a kinesthetic or hands-on learner. Always read the lab instructions for the lab ***before*** you come to lab and do any pre-lab assignments indicated. **If you miss a laboratory session, points will be deducted from your homework assignment for that week.**

My Philosophy

I believe in providing students with a relaxed and comfortable working environment that allows them to succeed in this course. By working together and helping each other, we will all perform

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Fall 2009

at a higher level. To assure a team effort, instead of a competitive one, my grading is **NOT** based on a curve. Instead, the grades are based on standards that I feel you must achieve to understand biological concepts. I feel that everyone is capable of earning an A in this course; likewise, everyone is capable of earning an F in this course. **You earn your grades** — I do not give them to you.

Grading Policy

Final grades for this course will be based on the following:

Lecture Exams (3 exams at 100 points each)	300 pts
Lecture Homework (15 counted at 20 points each)	300 pts
Laboratory Exams (1 midterm and 1 final at 100 points each)	200 pts
Final Exam (on Monday, December 14, 2009)	200 pts
Total points possible	1000 pts

Lecture Exams are given during the normal lecture period. Lecture exam questions will cover material discussed in lecture and enhanced by laboratory exercises.

Lecture Homework will be given throughout the semester for each topic module that we cover. These homework assignments will vary in context, but will always include a definition quiz, study questions, creating your own review sheets, and lab exercises. Occasionally, these assignments will also include a group activity or crossword puzzle. Review sheets will be done from your required reading of the week and lecture notes. **Definition quizzes will be offered only at the beginning of the lecture period on Friday (or alternate day listed in schedule) and are timed.** The lab exercises are purchased through the bookstore and are due at the end of each lab session. The review sheets are notes and questions that you formulate during the week about the topic that was covered. The review sheets will be due the Friday of each topic module and the rest of the homework assignment will **usually** be due the Friday of each topic module. You need to attend lecture to turn in these homework assignments. All parts of the homework need to be completed satisfactorily or the packet will receive a score of zero.

Laboratory Exams will be given during the lab period. Lab exams will cover material discussed in laboratory sessions based on the lab objectives and questions. These exams involve visual identification of anatomical specimens, labeling parts of laboratory models, or performing mathematical calculations.

The **Final Exam** is comprehensive — yes, you need to know it all at the end.

Principles of Animal Biology 806-105

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Fall 2009

Because grades are assigned on a specific standard, you can tabulate how you are doing throughout the course. Please keep track of how you are doing, so that you can meet with me at the earliest point of concern. Letter grades will be assigned using the following scale:

93-100% is an A

88-92.9% is an AB

83-87.9% is a B

78-82.9% is a BC

73-77.9% is a C

63-72.9% is a D

<63% is an F

Helpful Web Sites

It is expected that you will be able to seek out information on your own through a variety of resources. One of these resources is the Internet. You should be able to determine if the site is a good site with correct information versus a site that contains opinion and perhaps incorrect information. Proper use of the Internet will be a valuable tool in your education.

How To Be An Effective Reader

In order to actually *learn* the stuff you are reading you need to be an active reader. That is, you need to do more than just sit down with a highlighter and cruise through the reading material. You need to:

- figure out what you are trying to learn about before you start reading
- read a paragraph or two at a time and do whatever it takes to actually understand those paragraphs (look up new words, get help if concepts are confusing, study diagrams...)
- write, *in your own words*, one or two sentences summarizing the meaning of what you just read or write a question to test yourself about the material
- review sheets can keep you up-to-date on the material presented, point out questions you may have on the topic, and serve as good resources for exams

This may sound time-consuming, but it is actually the most efficient and effective way to read a textbook and review notes. By doing it right the first time you read, you actually learn much more and need to go back and review much less. Plus, by taking good notes, you have an excellent study guide ready when it is time to study for exams.

Principles of Animal Biology 806-105
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Fall 2009

When You Need Help

There will be times in the semester when you need some extra help in order to understand material and complete assignments. Here are some of the many resources you can turn to for assistance:

- Other students: I encourage you to work together and help each other as much as possible. Teaching someone else is one of the most effective ways to learn something new and being taught by a peer is another. Study groups are an excellent way to quiz each other as well.
- Me: My office hours are Mondays from 10:30-12:30 and I am happy to set up alternate appointments with you if those times do not work. My expectation though, is that I will help you figure out how to learn what you are struggling with, not just give you the answer.
- Supplemental Instruction: Students who have done well in science classes will be available to students in this class for help. They will attend classes and some labs and you can arrange time with them. They will also have regularly scheduled times to meet with students.
- The Learning Center: The Learning Center located in the Truax library offers one-on-one assistance.
- Blackboard Web Links. These web links may contain multiple choice questions relating to biological topics or explain topics in a different way than in lecture. These can be found in Blackboard, which will be demonstrated in class.

Accommodations

If you need any special accommodations, please provide your documentation to me as soon as possible.

Required and Recommended Materials

Texts

- **Required:** Biology textbook chapters for Principles of Animal Biology by Primis Custom Publishing ISBN 0-390-70188-2. This "book" is specifically made for this course and correlates well with the level of knowledge I expect you to understand. I will

Principles of Animal Biology 806-105

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Fall 2009

supplement this material with lecture notes and Internet searches as well. This is available only through the Truax bookstore.

- **Required:** *An Illustrated Guide to Veterinary Medical Terminology*, 2nd ed., Janet Amundson Romich. This is a required text for the Veterinary Terminology course and gives information on species you will be working with in your profession. It will be available in the Truax bookstore under the Veterinary Terminology course (091-170).
- **Required:** Photocopied *Lab Manual for Animal Biology 105*. This is available only through the Truax bookstore.
- **Required:** *Clinical Anatomy and Physiology Laboratory Manual for Veterinary Technicians* by Colville and Bassert. This laboratory manual has a copyright date of 2009 although it was available and used for Fall Semester 2008. It will also be used for the animal anatomy and physiology courses in the Veterinary Technician/Laboratory Animal Technician programs.
- **Recommended:** *Mammalian Anatomy: The Cat* by Sebastiani and Fishbeck. This textbook was used in the past for the laboratory sections. In addition to dissection technique and good photographs, it contains some good anatomy and physiology material to aid in lecture.

Other Materials

- A loose-leaf notebook for handouts and for storing your review sheets.
- A lab coat or other protective clothing for lab work.
- Access to a computer to work with the Blackboard program - MATC has computers you can utilize.

Some Common Sense Rules:

You are expected to treat your classmates and instructor with respect. You should arrive and be prepared to begin class on time, pay attention to the instructors while they are talking, participate in group work and assignments, do not interrupt class with talking, pagers, cell phone calls, or text messaging. Disruptive students will be asked to leave class.

Tentative Weekly Schedule

8/24: We will start with an overview of the class and some activities to help us get comfortable working in teams. We will focus on the basic principles and theories used by biologists in the study of life. Our lab this week is on **the scientific method**.

Principles of Animal Biology 806-105

Dr. Betsy Krieger/Room 312C - cubicle F/246-6824

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Fall 2009

Assignments for Week 1:

- Read through this syllabus
- Purchase books and supplies (see list on page 5 of this syllabus)
- Read p. 1-21 and create review sheet
- Study PowerPoint presentations given this week
- Read lab instructions for Lab 1 before attending your lab session
- Complete **pre-lab exercises** prior to attending lab and be ready to hand in the entire lab at the end of the lab session. The **review sheet**, **study questions**, and **definition quiz** are due on Friday, August 28, 2009.

8/31: How did we get here and how are we related? We are going to take a quick look at **evolution** this week and follow up on the virtual zoo trip. In other lectures, we will discuss taxonomy - the way living things are classified - and body organization.

Assignments for Week 2:

- Read pages 49-68 and create review sheet
- Read supplemental handout on natural selection and Charles Darwin and create review sheet
- Complete **lab exercises**, **study questions**, **review sheets**, and **definition quiz** by Friday, September 4, 2009.

9/8 (short week): This week we will learn and review some **chemistry basics**.

Assignments for Week 3:

- Read pages 23-46 and complete review sheet
- Read lab instructions for Lab 3 (chemistry study guide)
- Review notes on water video
- Complete **lab exercise**, **study questions**, **review sheet**, and **definition quiz** are due on Friday, September 11, 2009.

Principles of Animal Biology 806-105

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Fall 2009

9/14: This week we will investigate **ecology and ecosystems**. We will examine the "big picture" before heading into the "small stuff".

Assignments for Week 4:

- Read pages 71-79 (stop at The Cycling of Materials in Ecosystems), pages 91-102 (stop at Types of Communities), pages 132-148, and create review sheets
- Study PowerPoint presentations given this week
- Read lab instructions for Lab 4 before attending your lab session
- Complete **pre-lab exercises** prior to attending lab and be ready to hand in the entire lab at the end of the lab session. **Study questions, review sheets, and definition quiz** are due on Friday, September 18.

9/21: Now that we have some basics in place, we can begin looking at the structures of cells. In lab, we will see what happens to cells as conditions around them change.

Assignments for Week 5:

- Read pages 151-177 and create review sheet
- Study PowerPoint presentations given this week
- Read lab instructions for Lab 5 before attending your lab session
- Complete **pre-lab exercises** prior to attending lab and be ready to hand in the entire lab at the end of the lab session. **Study questions, review sheet, and definition quiz** are due on Friday, September 25.

Principles of Animal Biology 806-105

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Fall 2009

9/28: How do we get from one-celled creatures like bacteria to many-celled creatures like dogs or humans? This week in class and lab, we will look at the ways cells divide.

Assignments for Week 6:

- Read pages 181-203 (stop at Nondisjunction & Chromosomal Abnormalities) and create review sheet
- Study PowerPoint presentations given this week
- Read lab instructions for Lab 6 before attending your lab session
- Complete **pre-lab exercises** prior to attending lab and be ready to hand in the entire lab at the end of the lab session. **Study questions, review sheet, and definition quiz** are due on **Wednesday, October 1.**
- **Lecture Exam I** (Scientific Method through Mitosis/Meiosis) on **Friday, October 2**

10/5: Now we are talking movement. We start our tour through body systems with the muscular and skeletal systems, looking at how animals move.

Assignments for Week 7:

- Read pages 208-228 and create review sheet
- Study PowerPoint presentations given this week
- Read lab instructions for Lab 7 before attending your lab session (hint: correlate lab assignment to *An Illustrated Guide to Veterinary Medical Terminology*)
- Complete **pre-lab exercises** prior to attending lab and be ready to hand in the entire lab at the end of the lab session. **Study questions, review sheet, and definition quiz** are due on Friday, October 9.

10/12: Slurp! This week in lecture we look at digestion and the GI tract. Lab this week marks the beginning of our dissection component; we will look at the digestive and urinary systems of cats.

Assignments for Week 8:

- Read pages 232-247 (stop at Human Nutrition) and create review sheet

Principles of Animal Biology 806-105

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Fall 2009

- Study PowerPoint presentations given this week
- Read lab instructions for Labs 8 and 9 before attending your lab session (hint: correlate lab assignment to *An Illustrated Guide to Veterinary Medical Terminology*)
- Complete **pre-lab exercises** prior to attending lab and be ready to hand in the entire lab at the end of the lab session. **Study questions, review sheet, and definition quiz** are due on Friday, October 16.

10/19: The urinary system is this week's topic. Lots of physiology associated with fluid balance and electrolytes in this section.

Assignments for Week 9:

- Read pages 254-266 and create review sheet
- Study PowerPoint presentations given this week
- **Lab Exam I** (beginning material through and including GI and urinary) will be given on Tuesday, October 20.
- **Study questions, review sheet, and definition quiz** are due on Friday, October 23.

10/26: Have a heart? We're checking out the cardiovascular system this week in class and in lab. There is **no class on Friday** this week because faculty and staff will be attending convocation sessions.

Assignments for Week 10:

- Read pages 269-285 (stop at The Lymphatic System and Its Components) and create review sheet
- Study PowerPoint presentations given this week
- Read lab instructions for Lab 10 before attending your lab session (hint: correlate lab assignment to *An Illustrated Guide to Veterinary Medical Terminology*)

Principles of Animal Biology 806-105

Dr. Betsy Krieger/Room 312C - cubicle F/246-6824

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Fall 2009

- Complete **pre-lab exercises** prior to attending lab and be ready to hand in the entire lab at the end of the lab session. **Study questions, review sheet, and definition quiz** are due on Wednesday, October 28.

11/2: Now it is time to turn to the lungs. We will also be looking briefly at the lymph system. Lab this week focuses on these systems and includes more dissection.

Assignments for Week 11:

- **Lecture Exam II** (Musculoskeletal through Cardiovascular) on Monday, November 2
- Read pages 285 (start at The Lymphatic System and Its Components) -286 and 289-304 and create review sheets
- Study PowerPoint presentations given this week
- Read lab instructions for Lab 11 before attending your lab session (hint: correlate lab assignment with *An Illustrated Guide to Veterinary Medical Terminology*)
- Complete **pre-lab exercises** prior to attending lab and be ready to hand in the entire lab at the end of the lab session **Study questions, review sheets, and definition quiz** are due on Friday, November 6.

11/9: How do cells turn the nutrients and oxygen brought to them by the blood into energy? Metabolism and cellular respiration are this week's topics.

Assignments for Week 12:

- Study cellular respiration PowerPoint and create your review sheet from it
- Use pages 307-323 as a reference only
- Read lab instructions for Lab 12 and complete independent lab assignment.
- **Study questions, review sheet, lab exercise, and definition quiz** are due on Friday, November 13.

11/16: Ah, hormones, hormones, hormones! This week we'll be examining those mysterious little chemicals and their particular impact on reproduction.

Assignments for Week 13:

Principles of Animal Biology 806-105

Dr. Betsy Krieger/Room 312C - cubicle F/246-6824

BKrieger@matcmadison.edu

Fall 2009

- Read pages 326-343 and create review sheet
- Study power point presentations given this week
- Read lab instructions for Lab 13 and complete part I before attending your lab session (hint: correlate lab assignment to *An Illustrated Guide to Veterinary Medical Terminology*)
- Complete **pre-lab exercises** prior to attending lab and be ready to hand in the entire lab at the end of the lab session.
- **Study questions, review sheet, lab exercise, and definition quiz** are due on Friday, November 20.

11/23: This week we will study the reproductive system of various animal species. This is a short week due to the Thanksgiving holiday.

Assignments for Week 14:

- Read pages 346 (start at The Male Reproductive System: Geared for Billions of Sperm) -358 (stop at During Cleavage, Cells Divide Rapidly) and create review sheet. Do not memorize human values.
- Study PowerPoint presentations given this week
- **Study questions, lab exercises (part II), review sheet, and definition quiz** are due on Wednesday, November 25.

11/30: Sights, sounds, smells, and tastes. This week's focus is the nervous system and the senses. We will do some dissection in lab and an activity related to the nervous system.

Assignments for Week 15:

- **Lecture Exam III** (Respiratory through Nervous System) on Friday, December 4
- Read pages 373-385 (stop at Evolutionary Trends in the Nervous System); 387 (start at Vertebrates Have Central and Peripheral Nervous Systems) -397; 401-418 and create review sheets
- Study PowerPoint presentations given this week
- Read lab instructions for Lab 14 before attending your lab session (hint: correlate lab assignment to *An Illustrated Guide to Veterinary Medical Terminology*)

Principles of Animal Biology 806-105

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Fall 2009

- Complete **pre-lab exercises** prior to attending lab and be ready to hand in the entire lab at the end of the lab session. **Study questions, review sheets, and definition quiz** are due **on Wednesday, December 2.**

12/7: Working with animals requires a basic understanding of genetics. This week, we will look at how traits are passed from one generation; in lab, we will take our **final lab exam**.

Assignments for Week 16:

- **Lab Exam II** (Gastrointestinal through Nervous and Sensory) will be given on Tuesday, December 8.
- Read pages 421-442 and create review sheet
- Study genetics worksheet
- **Study questions, review sheet, and definition quiz** are due on Friday, December 11.

12/14: Finals week: no classes. **Comprehensive final exam will be given Monday, December 14, 2008** from 9:30-11:30 am. Room to be determined later.

Tentative Schedule of Events

Week	Dates	Laboratory	Lecture
1	August 24-28	Lab #1	Scientific Method
2	August 31-Sept. 4	Lab #2	Taxonomy/Evolution/Speciation
3	September 8-11	Lab #3	Chemistry
4	September 14-18	Lab #4	Skin & Histology
5	September 21-25	Lab #5	Cell Structure & Tonicity
6	September 28 - October 2	Lab #6	Cell Division (Mitosis & Meiosis) Lecture Exam #1 (10/2/09)
7	October 5-9	Lab #7	Musculoskeletal System
8	October 12-16	Lab #8 and #9	Digestive System

Principles of Animal Biology 806-105

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Fall 2009

9	October 19-23	Lab Exam (10/20/09)	Urinary System
10	October 26-28	Lab #10	Cardiovascular System
11	November 2-6	Lab #11	Respiratory & Lymphatic Systems Lecture Exam #2 (11/2/09)
12	November 9-13	Lab #12	Cellular Respiration
13	November 16-20	Lab #13 and #14	Endocrine & Reproductive Systems
14	November 23-25	Thanksgiving	Endocrine & Reproductive Systems
15	November 30- December 4	Lab #15	Nervous System & Special Senses Lecture Exam #3 (12/4/09)
16	December 7-11	Lab Exam (12/8/09)	Genetics
17	December 14-18	No Lab	Final Lecture Exam (12/14/09)