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BIO 140-02, Biology II, Spring 2009

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BIOLOGY II Biology 140 section 2, 2009

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 MF 8:00-9:00, 12:00-1:00
 W 8:00-9:00, 1:00-2:00
 TR 8:00-11:00, 12:15-1:30
 and by appt

<u>DATE</u>	<u>TOPIC (assigned reading)</u> ¹
W Jan 14	Course Introduction; Evolution Introduction (pp. 475-485)
F Jan 16	Evolution Introduction, Definitions, Sources of Evolution [know Hardy-Weinberg as a concept 465-475]
{M Jan 19	<i>Martin Luther King Memorial Day. No Class</i>
W Jan 21	Evolution: Speciation (pp. 487-504), Macroevolution 525-531, 534-535, 507-510)
F Jan 23	Taxonomy and Classification (536-539); Major events in the Evolution of Major Groups: (514-524)
M Jan 26	QUIZ 1 ; Major events in the Evolution of Major Groups: (514-524) Major Groups of Organisms (551-553); The "Radiation of Life". Diversity, Prokaryotes (pp. 98-99, Chapt 27) Diversity, Eukaryotes: Intro: (98-99, fig 28.3 on 578)
W Jan 28	Diversity, Eukaryotes: Protists (575-579) (examples and readings from pp 580-597 as needed by lecture) Diversity, Eukaryotes – Plants (pp 600-605) (examples and readings from Chapt 29, 30 as needed by lecture)
F Jan 30	Diversity of Life – Fungi (Chapt 31), Diversity of Life – Animals (pp. 666-669, fig. 33.2, 648-701) [and examples of invertebrates and vertebrates as needed from lecture the rest of Chap's 33 & 34]
M Feb 2	Plant Anatomy & Physiology (738-754);
Monday, Biology Lecture Feb 2. 4:15pm Refreshments before in the Biology Library "Turning up the heat on Lizards; integrating principles of dispersal and thermoregulation to better understand responses to climate" Mike Sears '93 Associate Professor, Dept. Zoology, Southern Ill. Univ.	
W Feb 4	EXAM I
F Feb 6	Plant Transport (Chapt. 36)
M Feb 9	Angiosperm Reproduction (Ch 38)
W Feb 11	Plant Hormones (pp.821-835);
F Feb 13	Animal Organization, Homeostasis & Tissues (pp. 852-862) Muscle (pp. 1105-1114).
M Feb 16	QUIZ 2 Muscle cont.; Nutrition & Digestive Systems (Ch. 41)

¹ Text: Campbell, N. A. *et al.* 2008. *Biology* 8th ed. Pearson/Benjamin Cummings, San Francisco.

W Feb 18 Nutrition & Digestive Systems cont. (Ch. 41)
 F Feb 20 Digestive Systems cont. (Ch. 41)

M Feb 23 Digestive syst cont, Circulation (pp. 898-915)
 W Feb 25 Circulation cont. (pp. 898-915)
 F Feb 27 Gas Exchange (pp. 915-927)

M Mar 2 Gas Exchange cont. 915-927

Monday.Biology Lecture Mar 2. 4:15pm Refreshments before in the Biology Library
 Serpula lacrymans: A Fungus that Defeated the British Navy"
 Dr. Jonathan Schilling Ph.D. PI
 Bioproducts and Biosystem Engineering, University of Minnesota

W Mar 4 **EXAM II**
 F Mar 6 The Immune System (Chap. 43)

M Mar 9 Immune Con't (Chap. 43)
 W Mar 11 Osmoregulation (Chap. 44)
 F Mar 13 **QUIZ 3**; Osmoregulation (Chap. 44)

{Mar 16, 18, 20 Spring Break, Mar14-22, No Class}

M Mar 23 Nervous Systems, Neurons (Chap 48 & pp. 1078 - 1084)

Monday.Biology Lecture Mar 23. 4:15pm Refreshments before in the Biology Library
 Diving deep into life at hydrothermal vents on mid-ocean ridges
 Dr Breea Govenar Ph.D. Postdoctoral Fellow,
 Woods Hole Oceanographic Institute

W Mar 25 Vertebrate Nervous System (pp. 1065-1077)
 F Mar 27 NS cont. (pp. 1065-1077)

M Mar 30 Hormones, Introduction to action (pp. 975-981)
 W Apr 1 Feedback Regulation and Hormones in vertebrates (pp. 981-994)
 F Apr 3 **EXAM III**

M Apr 6 Reproductive Diversity (pp. 997-1003)
 W Apr 8 Mammalian Reproduction (pp. 1003-1012, 1016-1018)
 {F Apr 10 Easter Break, Apr 9--12, No Class}

M Apr 13 Behavior (Ch 51)
 W Apr 15 **Quiz IV**; Behavior cont
 F Apr 17 Behavior and Ecology (Ch. 52, 53, 54, 55) by topic

M Apr 20 Behavior and Ecology
 W Apr 22 zoo project as assigned <On your Own TBA>
 F Apr 24 zoo project as assigned <On your Own TBA>

M Apr 27 Ecology (Ch. 52, 53, 54, 55) by topic
 W Apr 29 Ecology (Ch. 52, 53, 54, 55) by topic
 {F May 1 URCAS - No Class, But go to URCAS!}

Sat.May 9 8:30 AM **EXAM IV & CUMULATIVE EXAM Portion.**
 (If possible there will be an earlier alternative)

COURSE OBJECTIVES

My goal in this course is to provide you with the best possible introduction to the biology of living organisms. Throughout the semester, you will be learning the current knowledge and fundamental principles of the following general topics:

- 1) The process of evolution and the diversity of life.
- 2) Plant biology (comparative anatomy and physiology)
- 3) Animal biology (comparative anatomy and physiology)
- 4) Animal behavior
- 5) Ecology

After successfully completing this course you will have gained a very thorough background in organismal level biology. For those going on in Biology, this background (along with Bio. 130) will prepare you for taking our upper-level courses. But whether or not you take any more biology courses, the critical thinking skills and knowledge you will have gained here are important for you to understand your position as a single, but highly influential, animal in the network of organisms inhabiting earth.

GRADING

You will be given four 20-point quizzes (10 minutes) and four 100-point section exams (50 minutes). Three of these will be during class meetings and one during finals week in our final exam period. A cumulative evaluation will be worth 40 points and may have in-class exam parts taken in the final exam period along with Exam IV and/or take-home parts (TBA). Any take-home final questions will be due the last day of classes.

I will drop the lowest of the four quizzes and the lowest of the four standard exams.

In addition to the exams and quizzes there may be some homework assignments emailed to you as I see fit. These assignments should be done alone. Homework assignments must be turned in before the start of class on the date due. Late papers will not be accepted.

There will be at least three seminars offered by the Biology department during the semester. They are listed in the syllabus. As part of this course you must attend two of them, and submit a typed, one-page double-spaced summary and critique of the seminar. These are due by the start of the next class following the seminar.

To help me to get to know you better and for you to know me, I have assigned that you come in to see me during the first two weeks. I realize that I have not had the fortune to meet all of you previously, that this is a large lecture section, and that I won't be meeting you in lab this term. This meeting will be worth two points.

Attendance is required, see below. Attendance is recorded at the start of class. Unexcused absences will lower your grade. Excused absences must be requested in advance. Emergencies must be explained within 24 hours.

Summary of grading for this course: 422-442 points total.

- 1) Meeting with me in the first two weeks (2 pts)
- 2) 3 (best of 4) exam scores (100 points each)
- 3) Cumulative Final (40 pts)
- 4) 3 (best of four) quizzes (20 pts each)
- 5) 2 summary/critiques of different seminars (10 pts each) ~4-5% of your grade, don't miss these freebies!
- 6) Homework assignments, if assigned. (● 20 points total)
- 7) Attendance. Missing more than two classes, without my permission, will lower your grade ½ letter grade, for each unexcused 2 days of absence.

Exams and **quizzes** will be based on material presented in class plus figures, tables, and terms in the text that are mentioned during lecture. Some assigned readings will be assigned verbally to be known “as if given in lecture” You are expected to attend all lectures. No make-up exams will be given except at my discretion in rare instances of approved medical problems or emergencies. If a problem arises, notify me **before, during or immediately after** the exam.

Grading Scale: promised

90% ≤ A- 80% ≤ B- 70% ≤ C- 60% ≤ D- F < 60%

I do not commit to where minuses and plusses are assigned. This will depend on the final grade distribution. However, in the past 98% of the plusses and minuses fall as below.

90% ≤ A- < 92%	88% ≤ B+ < 90%	78% ≤ C+ < 80%	68% ≤ D+ < 70%
	80% ≤ B- < 82%	70% ≤ C- < 72%	60% ≤ D- < 62%

REQUIREMENTS, ASSUMPTIONS, AND EXPECTATIONS regarding Biology I, 130, 131 lab; and Biology 141 lab

Although this is an introductory class, it is a very demanding one, and the second in the series that makes up our Biology core. Bio. 130 was the first, and it is a prerequisite for taking this class. If you have not received credit for Bio. 130 (passing grade) you should not be in this class, and you should speak to me as soon as possible. Biology II lab, 141 is co-required for this course. Please see me as soon as possible if you are not enrolled in lab.

WHY NOT DAILY QUIZZES?

WHY ANY QUIZZES?

WHY FOUR EXAMS

WHY A FINAL CUMMULATIVE EXAM

WHY SOME <ON YOUR OWN TBA> ASSIGNMENTS?

My philosophy about the timing of quizzes and the <On your Own TBA> assignments is that Bio 140 should be a transitional experience on the way to upper level biology courses. I expect everyone to fill in holes, rewrite notes, and to cover material and study on a 24-48 hour cycle at least. More regular quizzes would force you to keep on top of your work. However, this is not the way that most upper level courses are

managed. For most of you during your first year it is the only time that you will have to work your own scheduling responsibly and to do what it takes to manage your time and course preparation. Although most of the course work is summarized with needed terms and concepts in lecture, I wanted you to get a few of these from your readings only. These TBA subjects have been chosen because of the simplicity and clarity of the coverage by your text. You will want to be able to read for yourself, to understand this courses content and in other topics. PowerPoints and on-line reviews, will not give the complete explanations that texts are designed to do. Although some students find it hard to read and summarize from texts, it is still a skill that will help you excel, even in our digital age. Our text is one of the best out there. Anyone interested in using a single text for a review of biology at a later time, for example for the MCAT or DAT, will want to keep their book and review it regularly.

HONOR SYSTEM

I support the honor system in all matters.

SPECIFIC EXPECTATIONS FOR YOUR WORK, UNDERSTANDING, AND SUCCESS:

Read assigned readings before class, not to memorize or understand all concepts.
 Take notes of all that is said and discussed. Don't just have copies of ppts
 If you print out ppt's, do so with multiple slides/ page. Take notes too. Try to reuse paper
 Redo your notes daily to fill in holes and formulate questions
 Read all assignments carefully following a lecture, now for detail and understanding on the topics and vocabulary presented in the lecture (not new terms or topics unless assigned "to know as if lectured")
 Meet with other class members to complete notes and answer questions
 Practice formulating exam questions and answers, see above (use peers)
 Meet with me ASAP to answer questions within 24-48 hours after they arise.
 Know all vocabulary, processes, and course content within 14-48 hours of lecture
 Study beyond filling in holes and reading so that you fully understand the material and can explain it to others in your own words (not just memorized)
 Be involved with the material
 Find connections between different sections in this course, other courses, and your life
 Recognize the process that you are using to learn and to try new techniques.

Short study hints (But see and read my long "everything I've ever learned about things students did to improve their understanding in biology course and improve their grade." I'll send this exhaustive document along via an email attachment.)

Whether you struggled last semester in Bio. 130, or made terrific grades, you now have a pretty good idea of what is asked of you in a biology course. Hopefully, one thing that you learned is that you must take an active role in the class to do well. One thing this means is that you should study your lecture notes frequently, not just a day or two before an exam. You will be exposed to a multitude of ideas and terms that you cannot hope to understand and learn if you study them all at once just before a test. As you study, make sure that you understand the concepts, then learn the details and terminology to explain them as fully as possible. Sometimes, people do poorly on exams even though they have studied very hard. This can happen because they have spent hours memorizing all the facts, but they really don't understand the fundamental concepts. As a result,

they don't know which details are the important ones to use when answering the question. Trying to state the details without understanding the concept is like trying to list the scrambled letters in a word - it takes a lot more effort to memorize and remember the letters "nradduenst," than it does to know the letters in the word "understand." It also means that students waste time on exams writing down every fact they know, instead of focusing on the details needed for that specific question. Finally, once you think you have mastered the concepts and details, practice explaining them using the appropriate terminology. It is best to practice explaining to other people, who can point out if you've missed something or if your explanation of something's significance is off the mark. Remember, if you don't know the details, then the big picture you construct will be faulty. If you don't master the terminology, your discussion of concepts will be superficial.

To do your best you should read (but don't memorize) the assigned pages before lecture and do all the homework assignments. Look up unfamiliar words. Take careful and extensive notes in class (use a voice recorder if you can't write and listen at the same time). Be sure to ask questions if you don't understand something. Then, as soon as possible after class, you should go over your notes and fill in any details from the book, PowerPoint, and from your memory of the lecture. Again, look up any unfamiliar words used in lecture. Make note of questions so that you can ask me ASAP. Then learn your notes backwards and forwards, making sure that you can explain each concept completely, including all of the details and using correct terminology. Read my longer document that will be emailed to you. It will give you many hints that past students swear by and told me about. Above all, keep in mind that I am here to help you. I expect you to come to me whenever you have a question, whether it is about a specific bit of material from lecture, a broader question about biology in general, or your plans and goals for your years at Rhodes and after Rhodes.

Seminar Summaries: 1-2 page max. Typed double spaced. Due the start of the next lecture following the seminar. Must include two paragraphs minimum. One broadly summarizing the seminar and stating the most interesting thing that you learned. The second should discuss the seminar mechanics and public speaking itself. What was good and effective and what was less than useful or appreciated. This will give you things to think about when you prepare your own public presentations. Like writing papers, public presentation can be evaluated on an infinite scale and we can all work to move up on that scale throughout life.