Environmental Biology
BI 100 &100L Syllabus
SPRING 2016

Note: 1.This syllabus contains essential information, please read it carefully. When in doubt during this semester, read the syllabus again.
2.You are recommended to discuss and resolve your questions during ***office hours***. More importantly, I very much would like to get to know **you**.
3. Course documents and grades will be posted on **MOODLE**.

Instructor: Xiao, Wei
Office: SC 105
Email: xiaow@triton.uog.edu

Office hour: T, TH, 11-12:30am; W, 1-4pm
Class schedule: T, TH 14:00-15:20 pm (section 2)
T, TH 15:30-17:50 pm (section 3)
Class location: SC200

Catalog course description

Students will gain an understanding of Pacific Island environments and their ecological principles: the diverse ecosystems; the biological, physical, and chemical processes and interactions that regulate these systems; how scientists learn about and describe nature; and the ways in which humans affect and are affected by the natural environment. To meet GE goals, students will develop science literacy and skills, coming to appreciate the values of science and how science affects their everyday life. BI 100 and BI 100L are co-requisite.

Rationale for offering the course

Through environmental biology content BI 100/100L provides grounding in the ways of science and meets the goals of the General Education curriculum in The Sciences. It also counts for credit toward the Biology BA. The GE curriculum includes two science courses because,

> "Science permeates every facet of the human experience through intellectual and technological products. Educated citizens understand and are able to discuss the ways science and technology affect themselves. First hand experience with the practices of science improves understanding of science's strengths and challenges. Individuals who have experience with the scientific practices of observing, identifying, describing, experimenting, and explaining natural phenomena better understand the scientific conceptual framework and its implications for the human experience. They know more about discriminating scientific fact from error, constructing scientific principles, hypotheses testing, and solving problems scientifically."

In addition, knowledge of the natural environment, the processes that shape it, and how scientists study and model it, are important to all citizens in understanding and reacting to environmental issues, which range from local land use decisions to global questions of climate and resource sustainability, from consumer choices to international treaties. This course presents the science relevant to such discussions, and shows how science is one key element in policymaking, assisting students to be informed consumers of scientific information and to form their own conclusions on environmental issues.

The lab component is a co-requisite and an integral part of the learning process, even though students register for it as a separate course worth 1 credit (an administrative process so that students may take any lecture section along with any lab section). As noted by the GE committee,

> "A long history of experience shows that didactic courses augmented with hands on laboratories provides an effective structure for learning science. ... The laboratory should provide students with the opportunity to conduct experiments [or make observations], analyze data, and write reports."

The lab component provides the experiential side of the course both to improve students' skills in observation and analysis; the lab also supports learning in the lecture part of the course, for example by showing real instances of the concepts students are learning. Essentially, the labs enable students to study nature and not just study books.

Intended student learning outcomes

The objectives of the course are based on those set out for GE science curriculum. The details of how each instructor guides students to meet these objectives vary somewhat, but the common intended outcomes are as follows.

Course SLO matrix (Covers both BI100 and BI100L)

Course student learning outcomes	Program LO's	Institutio-nal LO's	Assessment
1. Observe, describe, and compare-and-contrast structure and function of island ecosystems, and human interactions with them, within the context of current biological, ecological, and evolutionary paradigms;	1a	*6*	Test questions
2. Demonstrate a basic grasp of key biological concepts relevant to environmental biology (as listed in the back of the textbook).	1a	*6*	Test questions
3. Demonstrate basic knowledge that will provide the basis for your responsible use of natural resources and technology.	1b	*5*	Test questions
4. Describe the ways in which scientists in various disciplines involved in environmental biology think and work—especially how scientists deal with uncertainty, and how these ways differ from and are useful to public policy making.	1d	*3*	Test questions
5. Demonstrate basic level of skill in answering questions about the data in scientific graphs and tables	3	*2*	Test questions
6. Demonstrate basic skills in problem solving through the process of a scientific study and report write up.	1c	*1*	Lab report
7. Use scientific literature and diagrams as a source of information, properly cite sources and avoid plagiarism, and use computer software to create text and graphics to communicate results effectively through a scientific report.	5	*3*	Lab report

ILO 1: Mastery of Critical Thinking and Problem Solving. Frame a complex scientific, social, technological, economic or aesthetic challenge or problem and propose a "best approach" to the question or challenge using evidence; explain how the methods of inquiry and research can be brought to bear, judge the likelihood that perspectives and methods would contribute to the resolution of a challenge, and justify the importance of the challenge in a social or global context.

ILO 2: Mastery of Quantitative Analysis

ILO 3: Effective Oral and Written Communication. Express ideas and facts to others effectively in a range of settings and in a variety of formats, particularly written, oral, and visual formats.

ILO 4: Understanding and Appreciation of Culturally Diverse People, Ideas and Values in a Democratic Context. Show an understanding of core values of adaptation, tolerance and cultural respect to be able to work effectively with diverse groups in forging harmonious community relations, in developing and administering public policies, and resolving conflicts.

ILO 5: Responsible Use of Knowledge, Natural Resources, and Technology. Evaluate informed and responsible action to address ethical, social, and environmental challenges in global systems and evaluates the local and broader consequences of individual and collective interventions.

ILO 6: An Appreciation of the Arts and Sciences

ILO 7: An Interest in Personal Development and Lifelong Learning. Using skills from information literacy (i.e. constructing a problem statement, locating and gathering sources, evaluating sources) students will articulate perspectives about educational and life experiences which provide foundation for expanded knowledge, growth, and maturity over time.

PLO 1: Disciplinary knowledge and skills:
1a: Graduates have advanced understanding of the nationally-recognized core competencies in biology. Students taking biology for GE will have a basic grasp of some of these concepts, especially those relating to the interface of science and society, and will advance their scientific literacy. Students contribute to the public good by using their knowledge and skills in internships, research and volunteering, and in responsible use of natural resources and technology.

1b: Graduates use their knowledge and skills to solve problems in ecology, genetics, molecular biology, systematics, and evolution. They can apply their knowledge and skills to locally important issues such as island biogeography, conservation, and endangered species problems; they are also prepared to address broader questions such as biomedical research. They apply elements of thought and intellectual standards to problem solving and effectively judge the usefulness and accuracy of external sources of information.

1c: Graduates approach scientific questions using scientific criteria and know how these criteria differ from those in other disciplines and other worldviews.

1d: Graduates and GE students have metaknowledge of the diverse ways in which scientists in various disciplines think and work, and how these ways differ from and are useful to public policy making.

PLO 2: Graduates apply relevant concepts from chemistry and physics to biology problems; they approach problems in terms of interdisciplinary teams, where appropriate, aware of how other branches of biology and other sciences could be used to "come from the question"

PLO 3: Graduates apply numerical methods in collection and analysis of biological data. They formulate testable hypotheses and create effective experimental designs using their knowledge, understanding, and practical experience of scientific instruments and statistics.

PLO 4: Graduates are competent in basic biology procedures and safety in the laboratory and field.

PLO 5: Graduates use scientific literature and diagrams as a source of information, properly cite sources and avoid plagiarism, and use computer software to create text and graphics to communicate results effectively through print and oral presentations. They take initiative in searching for relevant sources in the scientific literature and assess evidence in writing scientific proposals and reports.

PLO 6: Graduates have experience with contributing to and using large databases in bioinformatics, environmental sciences, and biological collections

and have the general knowledge and confidence to mine "big data" sources.

PLO 7: Graduates follow ethical principles involved in science, ranging from integrity and honesty to authorship criteria; ownership of samples and data; appropriate manipulation of data and images; and (where appropriate) ethical issues in human subject and animal research.

Conceptual structure of the course

The course begins with an introduction to the methods of science, particularly hypothesis development and testing through experiment or observation, and explores the reasons for uncertainty in scientific conclusions. Subsequently, students are introduced to island ecosystems and the conceptual frameworks by which biologists make sense of the vast numbers of species—including humans—and their interactions with each other and with their physicochemical environment. Major ecosystems are explored in the classroom and in the field: terrestrial forests and grasslands, freshwater habitats, and the coral reefs. In the third part of the course students learn how populations grow and decline as a basis for understanding issues of pest control and endangered species protection. Finally, students learn about natural resources and their management and mismanagement, including the global atmosphere, in the context of sustainability. I treat the topics in the order in the textbook except for including basic climate information (Ch. 3) at the end as a lead-in to climate change.

Format and activities in the course

The schedule includes three hours of lecture each week and three hours of lab. Assessment activities in the lecture section include periodic in-class quizzes. Students will be guided in lab to develop an environmental question, make observations that address the question, and write up the data in a lab report (this will be not be part of grade calculations for lecture course).

Labs are usually field trips but some are indoor practical or "vicarious field trips" via documentary videos or exercises. While the lab sections vary with instructor, tides and weather, each overall achieves the goals stated above and take account of the variation (particularly in timing) when conducting assessment in the lecture section. Labs will be held rain or shine, unless the weather conditions are severe. *Come prepared.* If you are in doubt whether a trip is on, come to the science building as instructors may make last-minute decisions to hold lab indoors instead of going on a field trip. A cancelled field trip does not mean a cancelled lab period! Active participation in labs is required. Physical requirements will be explained in advance, and information on most of the field trips is posted on the course web site (university.uog.edu/bi-100). Students unable to meet the physical requirements of any or some field trips must discuss the situation with the instructor in advance and make arrangement for alternative support of the intended learning outcomes.

There will be a total of three (non-accumulative) exams during the semester. Exams will be mixed format tests, with short answer, compare and contrast, matching, drawing diagrams, essay, etc. Attendance is taken for every class. There will be student (group) presentations at the end of the semester.

Textbook and readings

The textbook for the course is *Tropical Pacific Island Environments* by C.S. Lobban and M. Schefter. This textbook and the web site (university.uog.edu/bi-100) were developed as resources for the course, to provide information in a local context. This book represents the most comprehensive review of the ecology and environmental challenges of insular (island) environments to date.

You are expected to use these learning resources as active learners. Read appropriate sections of the book *in advance* and *again after* the topic is covered in class. I do not teach the textbook – I assist you to understand topics. The book is a convenient resource, but it is not the only one! Videos in class or lab,

field trips, and information in the news and on the Internet are all legitimate resources, though you must judge the reliability and currency of external sources.

Additional materials or equipment

Appropriate clothing, especially hat, footwear for field trips (see field trip policies on the web, http://university.uog.edu/bi-100/Field_trips.htm)

Evaluation and grades

My philosophy in testing is to see that you have gone beyond memorizing facts, and have reached a level of understanding the key concepts. Your understanding will be tested through your skills in:

- *interpreting* - e.g., changing classification diagrams into text or vice versa; reading graphs;
- *exemplifying* - e.g., giving an example of ...
- *classifying* - e.g., being able to classify the trophic level of an animal from a food web diagram
- *summarizing* - e.g., Be able to *summarize* the process by which Darwin arrived at his hypothesis of atoll formation.
- *inferring* - e.g., draw a logical conclusion from presented information
- *comparing* - e.g., determine how similar things are as a criterion for applying analogy;
- *explaining* - e.g., explain the cause of drought during El Nino

In addition to understanding, you will be expected to

- *apply knowledge*, e.g., apply argument by analogy to make strong predictions
- *evaluate*, e.g., establish criteria for judging the effectiveness of a proposed solution to an environmental problem

You will begin with *factual knowledge* (i.e., terminology, specific details), but the goal is for you to end with *conceptual knowledge*, including:

- knowledge of principles and generalizations;
- knowledge of theories.
- knowledge of classifications;

The points breakdown for the lecture section is as follows:

Tests (3)	75%
Attendance	15%
Group Presentation	10%
Total	

Your final grade will be based upon the following percentages:

A 90-100%
B 80-89%
C 70-79%
D 60-69%
F ≤60%

NO! There will NOT be any curve.

YES! There will be extra credit if you take on a project (defined by the instructor)! So Listen UP!

Course policies

You are responsible for your learning. Take full advantage of the resources available, including the textbook, lectures, activities, and office hours.

- Show up to exams on time. **I do not distribute exams to students who come in the door after exams have already been completed by other students.**
- ***No make up tests***–If you miss a test or are tardy for a test (see above) for a valid reason, I will average it out of your score, otherwise your score = 0. You **must** tell me if you have such a valid reason. **If you miss two exams, you will receive an automatic "F" for the course.**
- **Academic dishonesty**: All assignments and tests must be your own work. The term "**plagiarism**" includes, but is not limited, to, the use, by paraphrase or direct quotation, of the published or unpublished work of another person without full and clear acknowledgment. It also includes the unacknowledged use of materials prepared by another person or agency engaged in the selling of term papers or other academic materials. Plagiarizing in your essay or cheating on tests will be punished with a mark of 0. If a plagiarized essay is not replaced with original work I will assign you a grade of F for the course. There will be no make up for tests. If you are not sure what plagiarism is and how to avoid it in using sources for your work, see www.indiana.edu/~wts/pamphlets/plagiarism.shtml – but be careful when paraphrasing not to change the meaning of scientific information. Answers you write on the tests must come only from in your head or the information supplied in the test papers; anything else is cheating. The term "**cheating**" includes, but is not limited to: (1) use of any unauthorized assistance in taking quizzes, tests, or examinations, e.g., looking at other students' answers, using crib notes (including electronic), getting information from another person via any kind of communication; (2) dependence upon the aid of sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems, or carrying out other assignments; or (3) the acquisition, without permission, of tests or other academic material belonging to a member of the University faculty or staff. If you need to use an electronic translator, you must discuss this with me in advance.
- Classroom courtesy: In order to cause the least disruption to your fellow learners, please:
    - Avoid coming late to class or leaving early. If you absolutely must, come in quietly and take the nearest seat! If you need to go to the toilet, please wait until there is a suitable break.
    - Don't talk to each other when I am addressing the class. It is very rude to your fellow students (as well as to me)!

Special needs

Students with special needs must make arrangements through the ADA office. The University makes every attempt to accommodate such requests (see below). Students who cannot meet the requirements of a particular field trip must discuss the problem with me several days in advance.

UOG Disabilities Policy

In accordance with the Americans with Disabilities Act (ADA) of 1990 and the Rehabilitation Act of 1973, the University of Guam does not discriminate against students and applicants on the basis of disability in the administration of its educational and other programs. The University offers reasonable accommodations for a student or applicant who is otherwise qualified, if the accommodation is reasonable, effective and will not alter a fundamental aspect of the University's program nor will otherwise impose an undue hardship on the University, and/or there are not equivalent alternatives. Students are expected to make timely requests for accommodation, using the procedure below*. If appropriate, the University may choose to consult with such individuals, at or outside the University, to provide expertise needed to

evaluate the request for accommodation. Each student bears the responsibility for initiating and then documenting a disability-related request for accommodation in the manner requested in this Policy. [*full text at: www.uog.edu/dynamicdata/EqualEmploymentOffice.aspx?siteid=1&p=66]

UOG Tobacco-Free Policy

Pursuant to Board of Regents Resolution No. 13-24, the University of Guam (UOG) has a total ban on the sales, smoking and the distribution and use of tobacco and tobacco-based products on the UOG Campus, and properties.

The purpose of this policy is to protect the public health and welfare by prohibiting smoking and the use of tobacco products or simulated smoking devices, including but not limited to E-cigarettes, on the UOG campus and properties; to guarantee the right of nonsmokers to breathe smoke-free air, while recognizing that the need to breathe smoke-free air shall have priority over the desire to smoke; and to encourage a healthier, more productive living/learning environment for all members of our University community.

Student work load

Time outside the classroom–You should plan to spend an average of 2 h studying for every hour of **lecture** class time (as with every class), and 1 h/week for the lab. I suggest you structure those 7 h per week as follows. (These times will vary from student to student, and from week to week depending on assignments and tests; the 6 h/wk and the allocation of that time are suggestions that your need to adjust on the basis of your experience in this course.)

2 h pre-reading the textbook (*before* class).

Read the sections that are assigned (not always the whole chapter!)

Make note of new terms/key words, and write out definitions. (Key words are listed on the first page of each chapter, and are printed in boldface when first introduced. The definitions can be found in the Glossary at the back of the book.) *Note that I do not want you to memorize the definitions and will not ask for them on the tests.* You will be expected to know what the terms mean and be able to work with them.

2 h re-reading the textbook and revising your notes after class.

Focus on the specific objectives in the syllabus. These are your study guide and test questions.

2 h doing assignments and testing yourself on the specific objectives.

The specific objectives can easily be converted to test questions. You should write out practice answers to all these questions. This way you will (a) be ready for whatever selection of them appears on the test; (b) become aware of any points which may need clarification in class or during office hours.

When I give you answer keys to assignments, correct your paper in detail and analyze your answers when they are different. This is an important part of your learning process with the news stories, where several possible answers and wordings may be acceptable.

+ Additional time working with other print/Internet sources.

1 h for the lab.

Read the description and read/review pertinent parts of the textbook in advance of a field trip, review concepts afterwards. Allow several hours over 2-3 weeks to write the lab report.

If the textbook does not give clear, complete, or up-to-date information that will allow you to answer the specific objectives, or if you feel that you need different resources to understand the material better, you should spend time on line with the BI 100 web and/or find other environmental science textbooks in the library.

Additional resources

The web site (university.uog.edu/bi-100) has special features such as interactive diagrams showing the changes in the vertebrate fauna of Guam before and after the snake arrived, practice sessions for reading graphs, and 3D maps of several of the field trip sites.

Contact information for classmates

Write the names and contact info for two or three classmates you can contact if you miss a session or want to study together. **I encourage you to form study groups!**

COURSE OUTLINE (subject to change as needed)

Lecture Schedule:		Chapter Covered
Jan.	21	Course Organization
	26	Ch.1
	28	Ch.1
Feb.	2	Ch.2
	4	Ch.2
	9	Ch.3
	11	Ch.3
	16	Ch.4
	18	Ch.4
	23	Review
	25	**EXAM 1**
Mar.	1	No class
	3	Ch.5
	8	Ch.5
	10	Ch.6
	15	Ch.7
	17	Ch.7
	Spring break	No class
	29	Ch.8
	31	Ch.8
Apr.	5	Ch.8
	7	Review
	12	**EXAM 2**
	14	Ch.9
	19	Ch.9
	21	Ch.10
	26	Ch.10
	28	Ch.11
May	3	Ch.12
	5	Presentations
	10	Presentations
	12	Review

FINAL EXAM: Tuesday May 17th 2016, lecture time.

BIOL 100L – ENVIRONMENTAL BIOLOGY LAB (SP 2016)
SYLLABUS
Section X & Y

Instructor: *********
Email: *********
Phone: *********

Office hours: *********
Class schedule: *********

Note
Your MOODLE registration key is *********. Notifications and grades will be posted on **MOODLE**.

Course Texts:
None, other than the Bi 100 textbook.

Course Description:
BI 100L is the laboratory portion of BI 100 and MUST be taken concurrently. The course consists of one three-hour laboratory per week. Corequisite: BI 100

Rationale for offering the course
This course is to provide credits toward the general education requirement in science. It is an important course for island citizens in general, and provides strong links to disciplines such as communication, education and business.

Course content
The focus is on Pacific Island environments and the local and global threats to the environment. Various island ecosystems are described and visited on field trips; e.g., limestone forest, savanna, reefs. Principles of ecosystem structure and function are introduced, such as predator prey relations and the concept of habitat. Part II covers populations: principles of population growth and decline; pests, endangered species, sustainable harvest of renewal resources. Non-living renewable resources are also covered, including Guam's water source and energy alternatives. Part III includes aspects of aspects of population of air, sea, freshwater, and land; solid waste disposal and hazardous waste, and population aspects of resource exploitation (e.g., oil spills). Throughout, solutions are examined, including individual action in recycling and resource conservation, ecotourism, and ethical and philosophical aspects of our relationship with our environment. Environmental issues in the news are analyzed and discussed.

Students with Disabilities:
If you are a student with a disability who will require an accommodation(s) to participate in this course, please contact me or the Institutional Compliance Officer privately to discuss your specific needs. You will need to provide documentation concerning your need for accommodation(s) from the EEO/ADA & TITLE IX Office. If you have not registered with the EEO/ADA & TITLE IX Office, you should do so immediately at 735-2244, (TTY) 735-2243 to coordinate your accommodation request.

Grading Information:
Grading is based on 4 Field Trip Essays, 1 Field Experiment Final Report, & Regular attendance.

Point Breakdown:

Task	Percent
4 Field Trip Essays	30%
Formal Report	40%
Attendance	30%
Total:	**100.0**

Grading Scale:

Percent	Letter Grade
90 – 100	A
80 – 89	B
70 – 79	C
60 – 69	D
00 – 59	F

Course Components:

A. Lab Sessions (30% of your grade)

1. Attendance is important and part of your overall grade. Plan to attend and be on time. If you have a reason to miss a lab section, you must contact your instructor in advance and the other instructor to make arrangements to attend another lab section. *Most of our lab session will involve field trips*, and you must adhere strictly to our rules and policies, for your safety. See below for more information. *You may only attend a different section TWICE in the semester. If you are physically unable to join a field trip lab, discuss with your instructor in advance. Otherwise, you must attend the section you are enrolled in.*

2. Forms. All students MUST complete and sign the *Field Trip Safety Statement of Understanding* in order to participate in field trips at the beginning of the semester. All students MUST complete a field trip waiver for each field trip on the day of the excursion

3. Lab location. It is your responsibility to check MOODLE to find out where the field trip is each week. Not all sections will be scheduled at the same place in a given week because of tides, holidays, or other reasons. **You can always meet** in the Science Building lobby, and if a field trip gets cancelled because of rain, that is where we will meet. **There will always be a lab**; if the weather conditions prevent us from going out, we will do alternative lab exercises indoors. This may not be decided until the start of the lab period.

4. Carpool. We strongly encourage you to carpool not only because it's good for the environment but also because parking can be very tight at many field trip sites.

5. Show up on time. Many field trips will have tight schedules to ensure students are back on campus in time for any classes after their lab sections. That means carpools will need to be promptly formed and depart campus and field sites. If you arrive 20 minutes late to a site or on campus, you will not be given credit for attending that lab!

6. Sign In. You must show up on time for labs and sign the attendance sheet at the meeting site, and provide your mobile phone number. If you do not, you will be considered absent. You must also sign out before leaving field sites.

7. Come prepared. For each field trip, you must follow the instructions for appropriate clothing, footwear, and other materials. This may include rain jacket/poncho, sunscreen, hat, appropriate shoes, bug spray, etc., as necessary. (A change of clothes may be necessary if you have another class after lab.) Students who come unprepared or ill-equipped for field trips (e.g., no proper walking shoes, no drinking water) will not be allowed to participate. Generally, you must bring a quart of water or sports drink and adequate footwear (no zories). Additional instructions will be given for specific locations.

8. Keep up. Field trips are not simply nature walks. They are class time in which you are expected to take an active part in your learning. With 40 students per field trip, you must take responsibility to hear instructors and guest guides. Not everyone can be at the front, so people in the back need to pay attention. We will be happy to repeat any explanation.

9. Safety. **Do not set out on the trail without your instructor.** If you don't see your class and you are late, do not try to follow – if you get lost or something happens to you, we won't know you are there. Check directions to be sure you are at the right site; if you don't see cars parked, you may be in the wrong place. If you are early, wait!

Do not leave the group during a field trip. If you are concerned about the time, others probably are too, and you should speak to the instructor.

Anyone that engages in (or encourages) dangerous behavior will be penalized with an "F" and administrative withdrawal. Such activities include rock-climbing, skin-diving, and disregarding warnings given by instructors. Even if you think you are capable, others who are not so skilled may follow you. Let's be safe and have fun while we are learning!

10. Guests. Guests are not permitted for field trips or lab sessions. This is not negotiable. Don't ask.

11. Physical requirements of field trips will be explained ahead of time. Students unable to meet the physical requirements must discuss the situation with their instructor in advance and make arrangement for alternative support of the intended learning outcomes.

B. Field Trip Essays (30% of your grade)
Each essay should be an expository, persuasive, analytical or argumentative essay on a topic related to the field trips. This means that it has to be focused and contains only relevant material – that is, only content related to the essay topic. *The first 2 of these reports are due Monday, February 22nd, no later than 11:59 pm (submit to Moodle). The remaining 2 reports are due Friday, May 13th no later than 11:59 pm (submit to Moodle).*

For each essay:
Each essay should each be 1 1/2 to 2 pages long (typed double space). The best essays are ones that focus on a topic of interest to you. You must choose 4 of the 13 or so different field trips or lab exercises for your 4 essays. **What we are not looking for** is a trip report ("we went here, we saw this, it was awesome," etc...), **what we are looking for** is a thoughtful reflective essay that leads from something that you observed during the lab exercise. A good model is the "letter to the editor," in which you express praise for or concern about some action, or see a problem and propose a solution.

1. Select a topic based on your observations at that field trip site or on what your instructor has told you about that field trip site, or something interesting that the trip got you thinking about.

   Example: You might have seen an abandoned dog or cat during the Asmafines River field trip and decide to use the problem of pet abandonment as the topic of your essay for that trip.

2. Identify a problem (or perhaps an opportunity for a solution) that relates to the topic you have chosen.

   For the "abandoned pet" topic, you might discuss the negative effects of this practice (ecological damage, animal suffering, danger to hikers, etc...).

3. State how you might solve the problem you have identified.

   Again for the above example, you might suggest that GAIN (a volunteer organization that runs a local pet shelter) be funded to have a phone service where citizens can call and report stray sightings and also arrange for the pick-up of unwanted pets and captured stray animals.

4. Finally, state how you would test whether the solution(s) you propose are actually working to solve the problem.

   For the above example, you might measure the number of sightings of stray pets seen along Guam's roadways and/or a decrease in the number of road kill pets seen along roads.

C. Field Study Formal Report (40% of your grade)
Each semester, BI100L students conduct a class field study over two lab sessions. Students will collect and analyze data, and to answer a specific scientific question. A formal, scientific-style written report of the analysis is required. Information on how to do the analysis and how to write a paper in the proper format will be provided later in the semester. This formal write-up *is due Monday, May 1st by 11:59pm (submit to Moodle).* More details on what we expect from the project write up will be provided later in the semester.

D. *Important*
Know your instructor! Make certain you know WHO your instructor is and that you follow his/her instructions. Note that there are two sections taught concurrently on each day. Generally field trips and classroom sessions will be taught together, and the required assignments are the same. However, you will only be evaluated by your section instructor. Therefore, *only submit your assignments to your assigned instructor* and all questions about your assignments and attendance should be directed to him or her.

Submit your work on time.
Late submission will NOT be accepted; submission will be closed at midnight on MOODLE on the corresponding deadline date. Early submission is strongly recommended to avoid unpredictable technical problems at the last minute.
Mark your calendar with each due date. The instructor will NOT remind you of each deadline.

Course SLO matrix (For both BI100 and BI100L)

Course student learning outcomes	Program LO's	Institutional LO's	Assessment
1. Observe, describe, and compare-and-contrast structure and function of island ecosystems, and human interactions with them, within the context of current biological, ecological, and evolutionary paradigms;	Disciplinary knowledge (1A)	*An appreciation of the (arts and) sciences*	Test questions
2. Demonstrate a basic grasp of key biological concepts relevant to environmental biology (as listed in the back of the textbook).	Disciplinary knowledge (1A)	*An appreciation of the (arts and) sciences*	Test questions
3. Demonstrate basic knowledge that will provide the basis for your responsible use of natural resources and technology.	Disciplinary knowledge (1B)	*Responsible use of knowledge, natural resources, and technology*	Test questions
4. Describe the ways in which scientists in various disciplines involved in environmental biology think and work—especially how scientists deal with uncertainty, and how these ways differ from and are useful to public policy making.	Disciplinary knowledge (1F)	*Understanding and appreciation of culturally diverse people, ideas and values in a democratic context*	Test questions
5. Demonstrate basic level of skill in answering questions about the data in scientific graphs and tables	Quantitative skills (3A)	*Mastery of quantitative analysis*	Test questions
6. Demonstrate basic skills in problem solving through the process of a scientific study and report write up.	Disciplinary knowledge (1C)	*Mastery of critical thinking and problem solving.*	Lab report
7. Use scientific literature and diagrams as a source of information, properly cite sources and avoid plagiarism, and use computer software to create text and graphics to communicate results effectively through a scientific report.	Communication skills (6A)	*Effective use of oral and written communication*	Lab report

Academic dishonesty:

All assignments and tests must be your own work. Answers you write on the tests must come only from in your head or the information supplied in the test papers; anything else is cheating. The term "cheating" includes, but is not limited to: (1) use of any unauthorized assistance in taking quizzes, tests, or examinations, e.g., looking at other students' answers, using crib notes (including electronic), getting information from another person via any kind of communication; (2) dependence upon the aid of sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems, or carrying out other assignments; or (3) the acquisition, without permission, of tests or other academic material belonging to a member of the University faculty or staff. If you need to use an electronic translator, you must discuss this with the instructor in advance. The penalties for cheating in an examination include an **automatic failure** of the class as well as academic **probation or expulsion**.

Tobacco-free/Smoke-free campus: UOG is a tobacco-free campus. Thank you for not using tobacco products on campus, and for helping make UOG a healthy learning and living environment.

Tentative Lab Schedule for BI 100L for Spring, 2016

Week 1 (Jan. 20-23):	Global Warming DVD (SC 112)←]
Week 2 (Jan. 27-30):	Asmafines River (Sella Bay) ←]
*Week 3 (Feb. 03-06):	Sasa Bay Mangroves / Masso Reservoir←]
Week 4 (Feb. 10-13):	Jungle River Cruise (9am)] ←]
*Week 5 (Feb. 17-20):	GNWR (Ritidian) Cave & Forest
Week 6 (Feb. 24-27):	Class Project* Introduction (SC 110/112)←
Week 7 (March. 02-05):	NWS (Tiyan)]
Week 8 (Mar. 09-12):	Class Project* Data Collection←
*Week 9 (Mar. 16-19):	Class Project* Data Analysis and Write Up
Week 10 (Mar. 23-26):	Spring Break: Underwater World Self Guided Tour←
*Week 11 (Mar. 30- Apr. 02):	In Lab/Pagat
Week 12 (April 06-09):	NWS/In Lab/Snake Lab
*Week 13 (April 13-16):	Lost Pond (Tanguisson Beach)←
Week 14 (April 20-23):	Dolphin-Watching Trip***← W, Th, F: 9-11 (Cabras); Sat: 2-5 (Cabras)
Week 15 (April 27-30):	Tibbatt Shark Lecture /
**Week 16 (May 04-07):	CIS (Sci Building)
Week 17 (May 11-14):	Layon Landfill (W,Th)

*** These outings will probably not fall within normal lab times and will involve a set of sign-up sheets posted prior to the week of the actual trips***

Please consider this schedule as tentative as it may change due to consideration of our trip hosts as well as weather concerns. Please note announcements during lectures and informational posts in the lobby of the Science Building. It is **YOUR RESPONSIBILITY** to get informed and act accordingly to attend these activities!

Syllabus for Environmental Biology (BI100) Spring, 2016

Instructor: Dr. Kathy Lofdahl
Office: Sc107
Telephone: 735-2786 (office), 482-7329 (cell)
e-mail: klofdahl@triton.uog.edu

Office Hours: M 9:30-12:30, Tu 16:00-17:00, W 9:30-11:30, or by appointment
Class meets MW 12:30-2 in Sc. 101
Textbook (required): Tropical Pacific Island Environments (2nd Edition) by Lobban, Schefter, Camacho, and Jocson

Lecture Schedule:

Week 1	Chapter 1: Islands, People, and Knowledge
Week 2	Ch. 1 (cont.) & Chapter 2: Physical Environment
Week 3	Ch. 2 (cont.)
Week 4	Chapter 3: Habitats
Week 5	Chapter 4: Diversity of Life
Week 6	**Exam 1: Chapters 1-4**
Week 7	Chapter 5: Island Populations & Communities
Week 8	Chapter 6: Ecosystems
Week 9	Chapter 7: Terrestrial Ecosystems
Week 10	Spring Break:
Week 11	Chapter 8: Freshwater Ecosystems
Week 12	**Exam 2: Chapters 5-8**
Week 13	Chapter 9: Marine Ecosystems
Week 14	Chapter 10: Ecosystem Changes
Week 15	Chapter 11: Climate Change & Chapter 12: Ecosystem Management & Sustainability
Finals Week	**Exam 3: Chapters 9-12**

Attendance: I do not require attendance at lectures, but I strongly recommend it!

Grading Policy: All three exams will count equally in calculating your grade.

Grading Scale:
90-100 = A
80-89 = B
70-79 = C
60-69 = D
<60 = F

UOG Disabilities Policy Statement

The University of Guam (UOG) is committed to achieving equal opportunity and full participation of persons with disabilities by providing for non-discriminatory access to its services and facilities through the ADA Office. The Mission of the ADA Office is to ensure non-discriminatory access to all benefits, privileges, opportunities and obligations to students with disabilities and to ensure a process for full compliance by UOG with the ADA of 1990, as amended, and Section 504 of the Rehabilitation Act of 1973, as amended, taking into account the economic climate and multi-cultural diversity of the institution.

If you are a student with a disability who will require an accommodation(s) to participate in this course, please contact your instructor and the Institutional Compliance Officer privately to discuss your specific needs. You will need to provide your instructor with documentation concerning your need for accommodation(s) from the EEO/ADA & Title IX Office. If you have not registered with the EEO/ADA & Title IX Office, you should do so immediately to coordinate your accommodation request. The ADA Office provides reasonable accommodation for students in accordance with the UOG Policy and Procedure for students and applicants with a disability. The ADA Office can be contacted at telephone number (671) 735-2244 or Telephone Device for the Deaf (TDD) number (671) 735-2243. You must directly request for all ADA services four (4) to eight (8) weeks in advance. The ADA policy can be found on the UOG website.

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BI 100 / L Student Learning Outcomes

Course student learning outcomes	Program LO's	Institutional LO's	Assessment
1. Observe, describe, and compare-and-contrast structure and function of island ecosystems, and human interactions with them, within the context of current biological, ecological, and evolutionary paradigms;	Disciplinary knowledge (1A)	*An appreciation of the (arts and) sciences*	Test questions
2. Demonstrate a basic grasp of key biological concepts relevant to environmental biology (as listed in the back of the textbook).	Disciplinary knowledge (1A)	*An appreciation of the (arts and) sciences*	Test questions
3. Demonstrate basic knowledge that will provide the basis for your responsible use of natural resources and technology.	Disciplinary knowledge (1B)	*Responsible use of knowledge, natural resources, and technology*	Test questions
4. Describe the ways in which scientists in various disciplines involved in environmental biology think and work—especially how scientists deal with uncertainty, and how these ways differ from and are useful to public policy making.	Disciplinary knowledge (1F)	*Understanding and appreciation of culturally diverse people, ideas and values in a democratic context*	Test questions
5. Demonstrate basic level of skill in answering questions about the data in scientific graphs and tables	Quantitative skills (3A)	*Mastery of quantitative analysis*	Test questions
6. Demonstrate basic skills in problem solving through the process of a scientific study and report write up.	Disciplinary knowledge (1C)	*Mastery of critical thinking and problem solving.*	Lab report
7. Use scientific literature and diagrams as a source of information, properly cite sources and avoid plagiarism, and use computer software to create text and graphics to communicate results effectively through a scientific report.	Communication skills (6A)	*Effective use of oral and written communication*	Lab report

In addition to the information related to cheating and plagiarism in the UOG Student Handbook, the following definitions developed by California State University-Long Beach shall apply to this course:

http://web.csulb.edu/divisions/aa/catalog/current/academic_information/cheating_plagiarism.html#plagiarism

Definition of Plagiarism

Plagiarism is defined as the act of using the ideas or work of another person or persons as if they were one's own, without giving credit to the source. Such an act is not plagiarism if it is ascertained that the ideas were arrived at through independent reasoning or logic or where the thought or idea is common knowledge. Acknowledge of an original author or source must be made through appropriate references, i.e., quotation marks, footnotes, or commentary. Examples of plagiarism include, but are not limited to, the following: the submission of a work, either in part or in whole, completed by another; failure to give credit for ideas, statements, facts or conclusions which rightfully belong to another; in written work, failure to use quotation marks when quoting directly from another, whether it be a paragraph, a sentence, or even a part thereof; or close and lengthy paraphrasing of another's writing or programming. A student who is in doubt about the extent of acceptable paraphrasing should consult the instructor. Students are cautioned that, in conducting their research, they should prepare their notes by (a) either quoting material exactly (using quotation marks) at the time they take notes from a source; or (b) departing completely from the language used in the source, putting the material into their own words. In this way, when the material is used in the paper or project, the student can avoid plagiarism resulting from verbatim use of notes. Both quoted and paraphrased materials must be given proper citations.

Definition of Cheating

Cheating is defined as the act of obtaining or attempting to obtain or aiding another to obtain academic credit for work by the use of any dishonest, deceptive or fraudulent means. Examples of cheating during an examination would include, but not be limited to the following: copying, either in part or in whole, from another test or examination; discussion of answers or ideas relating to the answers on an examination or test unless such discussion is specifically authorized by the instructor; giving or receiving copies of an exam without the permission of the instructor; using or displaying notes; "cheat sheets," or other information or devices inappropriate to the prescribed test conditions, as when the test of competence includes a test of unassisted recall of information, skill, or procedure; allowing someone other than the officially enrolled student to represent the same. Also included are plagiarism as defined and altering or interfering with the grading procedures. It is often appropriate for students to study together or to work in teams on projects. However, such students should be careful to avoid use of unauthorized assistance, and to avoid any implication of cheating, by such means as sitting apart from one another in examinations, presenting the work in a manner which clearly indicates the effort of each individual, or such other method as is appropriate to the particular course.

BI 125: Human Anatomy & Physiology II Lecture
Syllabus, Fañomnagan 2016

Lectures

BI 125-01: Tu/Th 11:00–12:20 PM, SC 200 (Dr. Tim Righetti)
BI 125-02: Tu/Th 12:30–1:50 PM, SC 101 (Dr. Tim Righetti)

Instructors

Dr. Tim Righetti—Dr. Righetti is passionately enthusiastic about teaching and thoroughly enjoyed teaching A & P the last 3 years. Dr. Tim talks very fast when he gets excited and almost everything in A & P excites him. He has tried, but cannot change. Therefore, feel free to ask a question to slow him down. He never gets rattled and is always happy to answer questions before, during, and after class. Dr. Tim hopes to be remembered by his students as one of the toughest UOG testers but with the biggest heart. Another academic passion is involving students in undergraduate research opportunities. Drop by Dr. Tim's office if you are interested.

office: SC 301; 735-2797
email: trighetti@uguam.uog.edu

Office hours

Feel free to drop in to my office during office hours. You may also make an appointment for our mutual convenience.

Dr. Tim Righetti: Tu/Th 2:00–4:00 PM, We 10:00–noon

Catalog course description [revised from catalog!*]

This is the second part of a 2-semester course in the study of the structure and function of the human body. In this part The class will examine the nervous, endocrine, cardiovascular, lymphatic, immune, respiratory, digestive, urinary, and reproductive systems from the level of cells, to tissues, to organs, to the whole organism. Homeostatic control mechanisms in the healthy human for these systems will be stressed. The course includes 3 hours of lecture each week. The lab (BI 125L) SHOULD be taken concurrently. Prerequisites: BI 124 & BI 124L. Co-requisite: BI 125L.

Rationale for offering the course

An in-depth understanding and knowledge of the structure and function of the human body is crucial to the development of those wishing to enter many health-related and sport-related fields. It is also essential to those who wish to promote better health for themselves and/or their families. Knowledge of basic anatomy and physiology will enable students to be informed health-care consumers and to form their own conclusions about public health issues.

The lab component is a co-requisite and an integral part of the learning process, even though students register for it as a separate course. The lab supports learning in the lecture part of the course; for example, by allowing students to touch and feel the structures that they have heard about in lecture. The lab component provides the experiential side of the course to improve students' skills in observation, interpretation, integration, and analysis.

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* Catalog says:

"This is the second part of a 2-semester course in the study of the structure and functions of the systems of the human body. In this part, aspects of the nervous, circulatory, immune, digestive, reproductive, and excretory systems are investigated. The course consists of 3 hours of lecture weekly. The lab, BI 125L, MUST be taken concurrently. Prerequisite BI 124 & BI 124L. Co-requisite: BI 125L."

Intended student learning goals

The following table lists the Student Learning Outcomes or goals for this course. The second column identifies the Biology Program Learning Outcomes (see 2015 UOG Catalog, pg. 93–94) that are associated with the goals of this course. The third column identifies the UOG Learning Outcomes (see 2015 UOG Catalog, pg. 10) that are associated with this course. Finally, the last column identifies the assessment methods that will be used.

Course SLOs	**Program SLOs (PLOs)**	**University SLOs (ILOs)**	**Assessment Method**
During or by the end of the course students will be able to (as evaluated through written quizzes, tests, and exams):			
1. Identify the components and subcomponents of the endocrine, cardiovascular, lymphatic, immune, respiratory, digestive, urinary, and reproductive systems;		ILO 3 ILO 6 ILO 7	Oral class participation, written quizzes and exams
2. Recognize the functional relationships within and among the sensory, endocrine, cardiovascular, lymphatic, immune, respiratory, digestive, urinary, and reproductive systems in maintaining homeostasis;	PLO 1a PLO 5	ILO 1 ILO 2 ILO 3 ILO 6 ILO 7	Oral class participation, written quizzes and exams
3. Recognize and interpret the relationships between chemistry and physiology as they relate to cellular and sub-cellular processes; such as vision, olfaction, taste, and hearing, hormone action, antigen-antibody reactions, heart function, lung function, nutrition, metabolism and temperature regulation, and fluid, electrolyte and acid-base balance;	PLO 1a PLO 1b PLO 2 PLO 5	ILO 1 ILO 2 ILO 3 ILO 6 ILO 7	Oral class participation, written quizzes and exams
4. Apply basic knowledge of anatomy and physiology to demonstrate the complementarity of structure and function when the body exhibits homeostasis and during pathological deviations from homeostasis;	PLO 1a PLO 1b PLO 2 PLO 5	ILO 1 ILO 3 ILO 6 ILO 7	Oral class participation, written quizzes and exams
5. Apply basic knowledge of metabolic pathways and their links to energy production and storage to the function of the respiratory, digestive, and urinary systems; and	PLO 1a PLO 1b PLO 2	ILO 1 ILO 3 ILO 6 ILO 7	Oral class participation, written quizzes and exams
6. Recognize the detailed roles that the nervous and endocrine systems play in coordinating and integrating the function of the human body.	PLO 1a PLO 1b PLO 2	ILO 1 ILO 3 ILO 6 ILO 7	Oral class participation, written quizzes and exams

Course content

The course begins where BI 124 (Human Anatomy & Physiology I) ended. This session, the class will begin with the special senses. We will then move on to regulation and integration of the body systems by examining the endocrine system. Next we will examine maintenance of the body through the cardiovascular, lymphatic, immune, respiratory, digestive, and urinary systems. Finally we will investigate the continuity of life through an examination of the reproductive system, development, and heredity. Topics are generally covered in the order they are presented in the textbook. *Note that although the lectures will NOT cover all the material in the textbook, you will be expected to learn the **ALL** the material presented in the textbook.*

Format and activities in the course

The schedule includes 3 hours of lecture and 3 hours of lab each week. Assessment activities in the lecture section include 19 in-class quizzes, 6 in-class exams, 1 midterm, and 1 final exam. Your 2 lowest quiz scores and your lowest in-class exam score will be automatically dropped (so 17 quizzes and 5 in-class exams are included in your final grade. Note that you may earn "Mulligans" by answering questions in class, which can be used instead of an answer on quizzes and exams. Participate! It can improve your grade. In addition, attendance will be taken during every class and is worth 5% of the final grade.

Homework assignments, quizzes, and exams

Every week the class will cover a new chapter in the textbook. The class moves forward at a very fast pace. Read and study your textbook. It is also a very good plan to review your notes and text after each class.

There will be 19 quizzes (closed book, ~20-min long). These will be sometime during the class—**don't be late or leave early and miss the quiz!** These multiple choice quizzes cover only the preceding lecture's material. Your 2 lowest quiz scores will be automatically dropped. Quizzes are designed to help you review the material; and, if you keep up with the material and study, they will help to improve your grade. Some of these quizzes may be on-line.

There will be 6 in-class exams (closed book, ~40-min long). Each of these will cover 2 chapters. Exams will usually be completed at the beginning of class—**don't be late and end up with not enough time!** Your lowest exam score will be automatically dropped.

There will be class discussions and questions. Prepare for these by reading the material in your textbook and answering the "Check Your Understanding" questions after each section, as well as the "Critical Thinking and Clinical Application" questions at the end of each chapter. There will also be materials for you to review on "Moodle" before some of the classes. These may include videos or PowerPoint presentations. You will need to know this material, once it is posted, before the next class. Collecting "Mulligans" by participating in class discussions and questions can improve your grade when you use them in place of answers to questions on quizzes or exams.

There will be a midterm exam (closed book, ~1½-hour long) and a final exam (closed book, ~2-hours long). Each of these 2 exams will be comprehensive and cover all the material from the beginning of the course.

All the exams tend to challenge your thinking. Exams may include multiple choice, matching, short answer, graphs and figures to interpret, drawings to label, and sketches. Exams and quizzes do not include true-false questions or essay questions, nor will you be asked to memorize definitions. Questions will be based primarily on the textbook and lectures, and occasionally on lab exercises.

Evaluation and grades

Our philosophy in testing is to see that you have gone beyond memorizing facts, and have reached a level of understanding the key concepts. Your understanding will be tested through your skills in:

- *interpreting*—e.g., *interpreting* graphs & figures;
- *exemplifying*—e.g., giving an *example* of negative feedback in acid-base balance;
- *summarizing*—e.g., be able to *summarize* the process by which an action potential travels along a neuron;
- *inferring*—e.g., *draw a logical conclusion* from presented information on a person's systolic, diastolic, pulse, and mean arterial pressures, and heart rate;
- *comparing & contrasting*—e.g., listing the *similarities* and *differences* between cardiac and smooth muscle;
- *explaining*—e.g., *explain* the cause of myopia (or short sightedness)

In addition to understanding, you will be expected to

- *apply knowledge*—e.g., apply information on the function of the cardiovascular system to make strong predictions about the effects of exercise on the heart, circulation patterns, and blood pressure.

You will begin with *factual knowledge* (i.e., terminology, specific details), but the goal is for you to end with *conceptual knowledge*, including:

- knowledge of principles and generalizations,
- knowledge of structures and functions, and
- knowledge of homeostasis and imbalances.

The grading for the lecture portion is as follows:

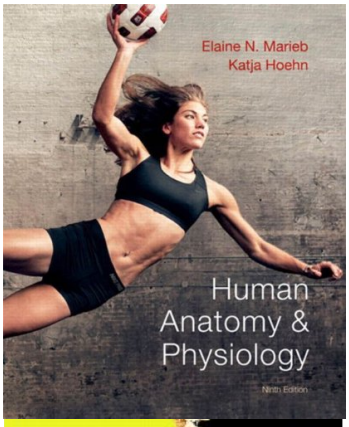
Quizzes (19 of equal value)	20%	(the 2 lowest scores will be dropped)
Exams (6 of equal value)	35%	(the lowest score will be dropped)
Midterm	15%	
Final Exam	25%	
Attendance	5%	
Total	100%	

[Attendance & "Mulligans" may make a difference in your grade if you're borderline. Things you can do to get them: attend all classes & if you must miss a class notify your instructor as soon as possible why you have to miss class, be ready and really participate in class discussions.]

This class uses criterion-referenced marking and generally grades are not placed on a curve. The percentages required for grades are usually: A = 85–100%; B = 75–84%; C = 60–74%; D =45–59%; F = <45%.

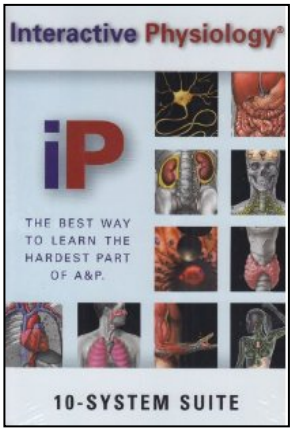
Textbook and readings

Textbooks and lab manuals are the same as last semester. Some textbooks & lab manuals may be available at the Triton Bookstore. Alternatively, you may choose order your books as ebooks, on-line, or at http://www.collegeguam.com, or buy them from a friend, etc.



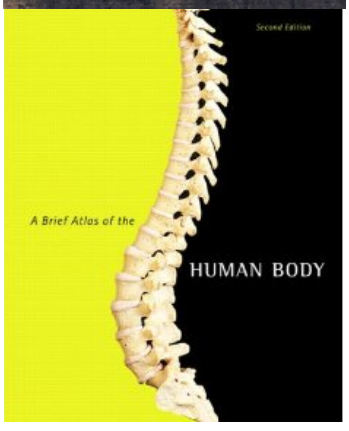
The textbook for the lecture is *Human Anatomy & Physiology* (*9th edition*) by EN Marieb and K Hoehn. (You may choose to use the 8th edition, but the class will be working from the 9th!) ISBN-10: 0-321-74326-1 or ISBN-13: 978-0-321-74326-8

*****This IS a required resource!****

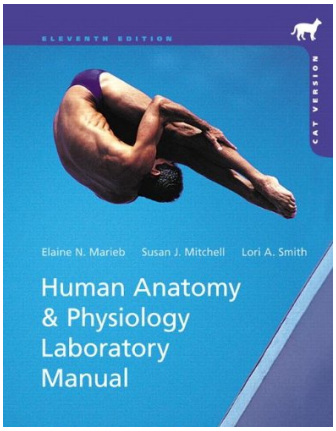


New textbooks often come with a pre-paid subscription to "My A and P" at http://www.myaandp.com which many students find a useful site with quizzes and reviews. If you buy a used copy of the textbook you can still pay for a subscription to "My A and P," if you wish to use this resource. (This is NOT a required resource.)

New textbooks often come with a CD-ROM entitled *Interactive Physiology: 10-system suite.* This can be very useful, particularly as the class works through some of the more difficult physiology. If you are buying used textbooks, make sure that you ask about this CD-ROM. (This is NOT a required resource.)



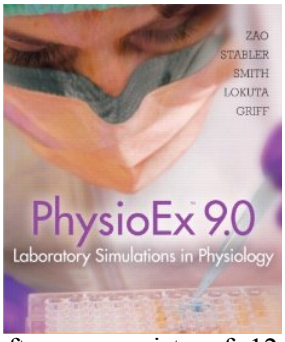
In addition, *A Brief Atlas of the Human Body* (*2nd edition*) by M Hutchinson, J Mallatt, EN Marieb, and PB Wilhelm is often bundled with the text. This atlas has excellent photos of all the bones of the human body, photos of cadavers, and more than 50 histology photomicrographs of tissues and organ systems. This resource can be particularly handy when studying for lab practical exams. If you are buying used textbooks, make sure that you ask about this atlas. (This is NOT a required resource.)



The manual for the lab is *Human Anatomy & Physiology Laboratory Manual*—***Cat Version*** (*11th edition*) by EN Marieb, SJ Mitchell & LA Smith.
ISBN-10: 032182184X; ISBN-13: 978-0321821843

You MUST have this edition of the manual for the lab. Homework assignments will come directly from the lab manual, and it is up to YOU to have the correct assignment.

This IS a required resource!

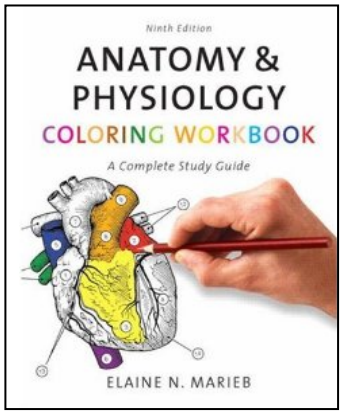


New lab manuals often come with *PhysioEx™ 9.0 or 9.1 Laboratory Simulations in Physiology*. This software consists of 12 exercises that will be required for the lab.

This IS a required resource!

For the lab, each student will need a dissecting kit, beginning next week. This kit MUST have a pair of scissors with 2 fine tips and fine forceps. Dissecting Kits may be purchased at the Triton Bookstore, but you will have to ask the cashier to get you one from inside their enclosure. Dissecting Kits last semester were approximately $30.00. ****This IS a required resource!***

You are expected to use these learning resources as active learners. Read appropriate sections of the book as we get to them in lecture, and again after the topic is covered in class. I will not teach the entire textbook—I assist you to understand topics.



Additional materials or equipment

Other than a notebook and writing implements, no additional materials or equipment are required for the lecture or lab. However, many students find that *The Anatomy & Physiology Coloring Workbook: A complete study guide* (*9th edition*) by EN Marieb is a relatively painless introduction to and study guide for the topics covered in this class.

Course policies

<u>You are responsible for your learning.</u> Take full advantage of the resources available, including the textbook, lab manual, lectures, homework, on-line resources, and office hours.

- I recommend that you attend every lecture period. Most students who attend class only to write the quiz or exam and then leave, fail this class. Chronic absences or other evidence that you have not been doing your best to learn will indicate that you don't deserve attendance and participation points. If something stops you from attending class—contact your instructor as soon as you know that you will have to miss class.
- For the same reason (that goal is to understand concepts not to attend class), if something prevents you from attending class, or if I cannot give a class because of absence, typhoon, etc., you are still responsible to keep up with the reading/study; contact a classmate for copies of new handouts if necessary.
- ***No make-up quizzes or exams***—If you miss a quiz or exam for a valid reason, I will average it out of your score, otherwise your score = 0. You **must** tell us if you have such a valid reason **before** you miss the quiz or exam.
- ***No extra-credit assignments or extra-credit exams of any kind will be given***.
- **Academic dishonesty**: All assignments and exams must be your own work. The term "**plagiarism**" includes, but is not limited to, the use, by paraphrase or direct quotation, of the published or unpublished work of another person without full and clear acknowledgment. It also includes the unacknowledged use of materials prepared by another person or agency engaged in the selling of term papers or other academic materials. If you are not sure what plagiarism is and how to avoid it in using sources for your work, see www.indiana.edu/~wts/pamphlets/plagiarism.shtml—but be careful when paraphrasing not to change the meaning of scientific information. You may quote materials from the textbook or manual for your homework assignments. The answers that you write on the quizzes and exams must come from

only your head or the information supplied in the exam papers; anything else is cheating. The term "**cheating**" includes, but is not limited to: (1) use of any unauthorized assistance in taking quizzes or exams, e.g., looking at other students' answers, using crib notes (including electronic), getting information from another person via any kind of communication; (2) dependence upon the aid of sources beyond those authorized by the instructor in solving problems, or carrying out other assignments; or (3) the acquisition, without permission, of exams or other academic material belonging to a member of the University faculty or staff. If you need to use an electronic translator, you must discuss this with your instructor in advance. Any cell phone or computer that is visible during a quiz or exam will be considered in use as unauthorized assistance during that quiz or exam and therefore cheating. **Cheating on any quiz, or exam will be punished with a final grade of "F" in this class for all students involved, including those who allowed other students to obtain or read their answers.**

- Classroom courtesy: to cause the least disruption to your fellow learners, please
  - avoid coming late to class or leaving early. If you absolutely must, come in quietly! If you need to go to the toilet, please wait until there is a break.
  - don't talk to each other when I am addressing the class. It is very rude to your fellow students (as well as to your instructor)!
  - turn your cell phones off during exams.

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If you are a student with a disability who will require an accommodation(s) to participate in this course, please contact your instructor and the Institutional Compliance Officer privately to discuss your specific needs. You will need to provide your instructor with documentation concerning your need for accommodation(s) from the EEO/ADA & Title IX Office. If you have not registered with the EEO/ADA & Title IX Office, you should do so immediately to coordinate your accommodation request. The ADA Office provides reasonable accommodation for students in accordance with the UOG Policy and Procedure for students and applicants with a disability. The ADA Office can be contacted at telephone number (671) 735-2244 or Telephone Device for the Deaf (TDD) number (671) 735-2243. You must directly request for all ADA services four (4) to eight (8) weeks in advance. The ADA policy can be found on the UOG website.

Tobacco-free/Smoke-free/Vaping-free campus

UOG is a tobacco-free/smoke-free/vaping-free/e-cigarette-free campus. Thank you for not using tobacco products or e-cigarettes on campus, for helping to fight cancer, and for helping to make UOG a healthy learning environment.

Schedule

I will give you the tentative schedule today and update it regularly during class, so you can catch up if you missed.

Drop dates

University policy sets the drop dates. You can withdraw from classes "voluntarily" until 9 March 2016 and as late as 13 May 2016 with Dr. Moots' or Dr. Righetti's signature on a withdrawal form. Monitor your progress! If you fail the 1st exam, find out why and make appropriate changes.

Student workload

Time outside the classroom—You should plan to spend at least 2h studying for every hour of **lecture** class time (as with every class), and 3h/session for the lab. I suggest you structure those 6h per week for lecture as follows. (These times will vary from student to student, and from day to day depending on assignments and

exams; the 6h/week and the allocation of that time are suggestions that you need to adjust on the basis of your experience in this course.)

3h pre-reading the textbook (*before it is due*)

Read the sections that are going to be covered in lecture. Use the SQ4R method. Make note of new terms/key words. (Key words are printed in boldface when first introduced. The definitions can be found in the Glossary at the back of the book.) *Note that I do not want you to memorize the definitions and will not ask for them on the exams.* You will be expected to know what the terms mean and be able to work with them.

2h re-reading the textbook and revising your notes after class

Focus on filling in the details you missed in your initial reading. Remember to check your answers for the quizzes & exams, correct your answers in detail, and analyze your answers when they are different. These can also be used to fill in some of the details from the lectures in your notes. If you still are unclear about the answers, ask questions after class or see your instructor.

1h correcting exams and testing yourself

Use this time to correct any mistakes you made on your last exam, try the questions in the textbook, and to go on-line and check that you really do know the material as well as necessary.

+ Additional time working with other print/internet sources

If the textbook does not give clear, complete, or up-to-date information that will allow you to answer the specific objectives, or if you feel that you need different resources to understand the material better, you should spend time on the web and/or find other textbooks.

Additional resources

Note that every chapter ends with a chapter summary, review questions and "At the Clinic" (including related clinical terms and a case study). Answers to some of the questions in the Check Your Understanding, Multiple Choice, Matching Questions, and Case Study are provided in Appendix H (pp. A18–A34) of the textbook. The on-line website "My A & P" and the CD-ROM entitled *Interactive Physiology—10-System Suite* also include study material and quizzes. *The Anatomy & Physiology Coloring Workbook: A complete study guide* (*9th edition*) and *A Brief Atlas of the Human Body* (*2nd edition*) are also helpful resources for many students. There are also thousands of lectures and videos on YouTube, Ted, Khan Academy, and other open access university sites. Don't overlook their utility!

Contact information for classmates

Write down the names and contact info for at least two or three classmates you can contact if you miss a session or want to study together. I strongly encourage you to form study groups!

Name	**Home phone**	**Cell**	**email**

BI 125L: Human Anatomy & Physiology II Lab
Syllabus, Fañomnagan 2016

Labs

BI 124L-01: Tu 8:00–10:50 AM, SC 112 (Mr. Natuel)
BI 124L-02: Tu 2:00–4:50 PM, SC 112 (Mr. Natuel)
BI 124L-03: W 8:00–10:50 AM, SC 112 (Dr. Biggs)
BI 124L-04: W 2:00–4:50 PM, SC 112 (Dr. Biggs)
BI 124L-05: Th 8:00–10:50 AM, SC 112 (Mr. Natuel)
BI 124L-06: Th 2:00–4:50 PM, SC 112 (Mr. Natuel)

Instructors

Dr. Laura Biggs—Dr. Biggs is excited to be teaching what was her favorite course as an undergraduate—A&P. She graduated from Manhattanville College with a BA in Biology and Education and then graduated from the University of Utah with a PhD in Pharmacology and Toxicology. No stranger to UOG, she has worked in the Sea Grant Program for the last six years and is thrilled to pieces to be able to teach in the Biology department! She's originally from New Jersey and enjoys her island home with her husband, two girls, and two dogs. Dr. Biggs is happy to support your growth as a professional and will challenge you to think for yourself and engage in your learning. Don't be afraid to ask her any questions you have and visit her other office in House 4 (EPSCoR) in Deans circle.

office: Room 254, HS 2nd floor walkway (outside); 735-2783
email: biggs.laura@gmail.com

Mr. Michael Natuel—Mr. Natuel is a recent graduate of the University of Guam's Biology undergraduate program and is thrilled to teach the second semester of human anatomy and physiology labs! Although he has limited teaching experience, Mr. Natuel recently aced both the lecture and lab A&P courses at UOG. Because he endured the brutality of the A&P lab practicals, withstood Dr. Righetti's rigorously tough exams, and survived several of Dr. Moots' torturous classes, his past experience as an A&P student will be useful in helping you excel in the lab course. But most importantly, he encourages his students to become active learners by asking questions, participating in class discussions, and dedicating a tremendous amount of time reviewing the material—everyday! If you have any questions or concerns, Mr. Natuel is more than willing to assist you. ☺

office: SC 305
email: manatuel@gmail.com

Dr. Tim Righetti—Dr. Righetti is passionately enthusiastic about teaching and thoroughly enjoyed teaching A & P the last 3 years. Dr. Tim talks very fast when he gets excited and almost everything in A&P excites him. He has tried, but cannot change. Therefore, feel free to ask a question to slow him down. He never gets rattled and is always happy to answer questions before, during, and after class. Dr. Tim hopes to be remembered by his students as one of the toughest UOG testers but with the biggest heart. Another academic passion is involving students in undergraduate research opportunities. Drop by Dr. Tim's office if you are interested.

office: SC 301; 735-2797
email: trighetti@uguam.uog.edu

Office hours

Feel free to drop in to one of our offices during office hours. You may also make an appointment for our mutual convenience.

Dr. Laura Biggs: Tu 9–10 AM & 11–12 noon, We 11–12 noon & 1–2 PM, Th 10–12 noon
Mr. Michael Natuel: Tu/We/Th 11–1 PM
Dr. Tim Righetti: Tu/Th 2–4 PM, We 10–12 noon

Catalog course description [revised from catalog!*]

This is the laboratory portion of BI 125. The lab consists of one 3-hour session per week. The lecture, BI 125 SHOULD be taken concurrently.

Rationale for offering the course

An in-depth understanding and knowledge of the structure and function of the human body is crucial to the development of those wishing to enter many health-related and sport-related fields. It is also essential to those who wish to promote better health for themselves and/or their families. Knowledge of basic anatomy and physiology will enable students to be informed health-care consumers and to form their own conclusions about public health issues.

The lab component is a co-requisite and an integral part of the learning process, even though students register for it as a separate course. The lab supports learning in the lecture part of the course; for example, by allowing students to touch and feel the structures that they have heard about in lecture. The lab component provides the experiential side of the course to improve students' skills in observation, interpretation, integration, and analysis.

Intended student learning outcomes

The following table lists the Student Learning Outcomes or goals for this course. The second column identifies the Biology Program Learning Outcomes (see 2015 UOG Catalog, pg. 93–94) that are associated with the goals of this course. The third column identifies the UOG Learning Outcomes (see 2015 UOG Catalog, pg. 10) that are associated with this course. Finally, the last column identifies the assessment methods that will be used.

Course SLOs	**Program SLOs (PLOs)**	**University SLOs (ILOs)**	**Assessment Method**
1. Record, analyze, and interpret data from computer-simulated laboratory exercises on endocrine system physiology, blood analysis, cardiovascular dynamics, cardiovascular physiology, respiratory system mechanics, chemical and physical processes of digestion, renal system physiology and acid-base balance;	PLO 1 PLO 2 PLO 3 PLO 4 PLO 5	ILO 1 ILO 2 ILO 3 ILO 6 ILO 7	Written lab reports, quizzes, lab practical exams
2. Dissect, differentiate, locate, and identify on a cat components and subcomponents of the endocrine, cardiovascular, lymphatic, respiratory, digestive, urinary, and reproductive systems; and describe the differences between cats and humans in these systems;	PLO 1a PLO 1c PLO 4 PLO 7	ILO 1 ILO 3 ILO 6 ILO 7	Written lab reports, quizzes, dissections, lab practical exams
3. Identify the major organs and their associated structures of the sensory, endocrine, cardiovascular, lymphatic, immune, respiratory, digestive, urinary, and reproductive systems using slides, models, specimens, photomicrographs, and diagrams;	PLO 1a PLO 1c PLO 4 PLO 7	ILO 1 ILO 6 ILO 7	Written lab reports, quizzes, dissections, lab practical exams
4. Describe the pathway of blood through the heart, urine through the kidneys, food through the digestive system, and egg and sperm through the reproductive system (through fertilization); and	PLO 1 PLO 2 PLO 5	ILO 1 ILO 3 ILO 6 ILO 7	Written lab reports, quizzes, dissections, lab practical exams
5. Demonstrate basic dissection techniques and laboratory safety.	PLO 1a PLO 1c PLO 4 PLO 7	ILO 6	Dissections

* Catalog says:

"BI 125L is the laboratory portion of BI 125 and MUST be taken concurrently. The course consists of one three-hour laboratory period per week. Co-requisite BI 125."

Course content

The course begins where BI 124L (Human Anatomy & Physiology I) ended. This session, we will begin with the special senses. We will then move on to regulation and integration of the body systems by examining the endocrine system. Next we will examine maintenance of the body through the cardiovascular, lymphatic, immune, respiratory, digestive, and urinary systems. Finally we will investigate the continuity of life through an examination of the reproductive system, development, and heredity. Topics are generally covered in the order they are presented in the lab manual (and textbook), because the two classes are tightly integrated.

Format and activities in the course

The schedule includes 3 hours of lab and 3 hours of lecture each week. Assessment activities in the lab include 34 homework assignments, 14 quizzes, 3 practical exams (each covering the material since the last practical), a comprehensive final practical exam, and an evaluation of the care and skill of completed dissections. Your 2 lowest homework scores and 2 lowest quiz scores will be automatically dropped, so that 32 homework assignments and 12 quizzes will be included in your final grade.

Homework assignments, quizzes, and lab practical exams

Every week you have a homework assignment and questions to answer based on the lab and your reading. **Your handwritten** (original, not xeroxed) **answers on the forms from the lab manual will be due at the beginning of the next lab period** (see the schedule). The deadlines will be strictly enforced. Failure to meet deadline = sore of 0 (zero) on that assignment. Your answers will be scored according to whether or not you made an honest attempt to answer the questions. (It will be your responsibility to see whether your answers are as complete as possible, by checking the answers.) You should also review your notes and text after each lab. Your 2 lowest homework grades will be automatically dropped. Homework assignments are designed to help you review the material; and, if you complete them all, they will help to improve your grade.

There will be 14 quizzes over the course of the semester. These will be completed sometime during the lab—**don't be late or leave early and miss the quiz!** These quizzes will cover only the material since the last quiz. The quizzes tend to challenge your thinking and are typical of the types of questions we will ask on the practical exams. Quizzes will include identification of structures, short answer, interpretation of data, analysis, and drawings to label, etc. Your 2 lowest quiz scores will be automatically dropped.

There will be 3 practical exams (closed book, 50 questions, 2 questions per station, timed stations, ~1-hr long, **always scheduled on Fridays** [see the schedule]), each based on the material since the last practical exam. The final practical exam will be comprehensive (closed book, 100 questions, 4 questions per station, timed stations, ~2-hr long, **scheduled for Friday 13 May 2016**). These practical exams tend to challenge your thinking. Lab practical exams will include identification of structures, short answer, interpretation of data, analysis, and drawings to label, etc.

Evaluation and grades

See BI 125 Syllabus, Spring 2016

The grading for the lab section is as follows:

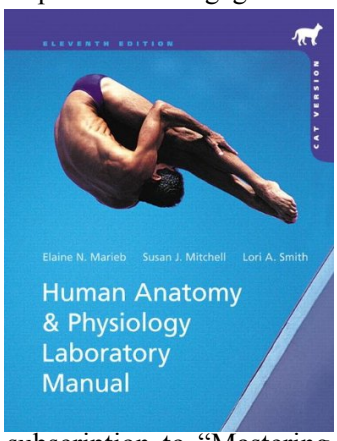
quizzes (14)	17%	(lowest 2 grades dropped)
homework (34)	13%	(lowest 2 grades dropped)
study guides (weekly)	5%	
practical exams (3)	35%	
final practical exam	20%	
dissection	10%	
Total	100%	

[Dissection points will make a difference in your grade. Things you can do to get them: **bring YOUR OWN dissection set to EVERY lab we dissect specimens!**, respect the animals we dissect by learning the proper techniques of dissection, knowing what you are dissecting for in each lab, being careful and complete in your dissections, and never abusing the specimens in any way.]

We use criterion-referenced marking and generally do not grade on a curve. The percentages required for grades are usually: A = 85–100%; B = 75–84%; C = 60–74%; D =45–59%; F = <45%.

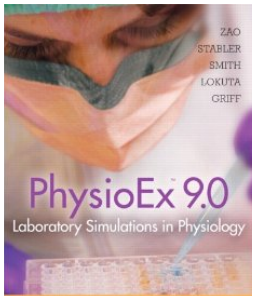
Textbook and readings

Textbooks and lab manuals are the same as last semester. Some textbooks & lab manuals may be available at the Triton Bookstore. Alternatively, you may choose order your books as ebooks, on-line, or at http://www.collegeguam.com, or buy them from a friend, etc.



The manual for the lab is *Human Anatomy & Physiology Laboratory Manual—**Cat Version*** (*11th edition*) by EN Marieb, SJ Mitchell & LA Smith.
ISBN-10: 032182184X; ISBN-13: 978-0321821843

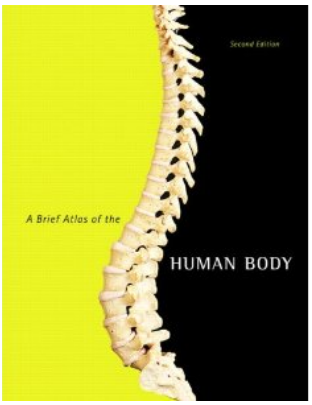
You MUST have this edition of the manual for the lab. Homework assignments will come directly from the lab manual, and it is up to YOU to have the correct assignment. ****This IS a required resource!***



New lab manuals often come with *PhysioEx™ 9.0 or 9.1 Laboratory Simulations in Physiology*. This software consists of 12 exercises that will be required for the lab. You MUST have this edition of the software for the lab. ****This IS a required resource!

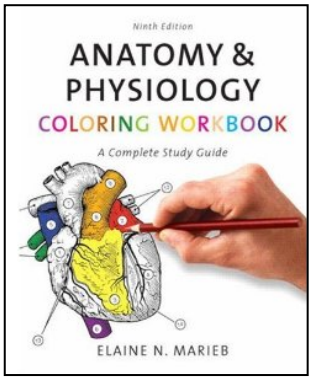
New lab manuals often come with a pre-paid subscription to "Mastering A and P" at http://www.masteringaandp.com which many students find a useful site with quizzes and reviews. If you buy a used copy of the manual you can still pay for a subscription to "Mastering A and P," if you wish to use this resource. (This is NOT a required resource.)

For the lab, each student will need a dissecting kit, beginning on 26 January 2015. (This week!) **Each student must bring their dissecting kit to every lab to receive dissecting kit credit.** This kit MUST have a pair of scissors with 2 fine tips and fine forceps. Dissecting Kits may be purchased at the UOG Bookstore, but you will have to ask the cashier to get you one from inside their enclosure. Dissecting Kits last year were approximately $30.00. ****This IS a required resource!****

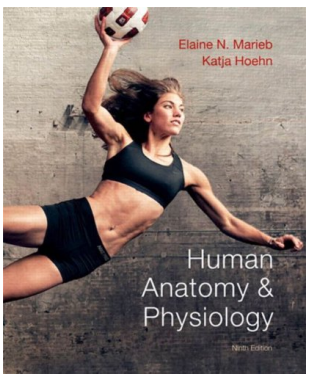


A Brief Atlas of the Human Body (*2nd edition*) by M Hutchinson, J Mallatt, EN Marieb, and PB Wilhelm is often bundled with the textbook. This atlas has excellent photos of all the bones of the human body, photos of cadavers, and more than 50 histology photomicrographs of tissues and organ systems. This resource can be particularly handy when studying for lab practical exams. If you are buying used textbooks, make sure that you ask about this atlas. (This is NOT a required resource.)

You are expected to use these learning resources as active learners. Read appropriate sections of the manual as noted in the schedule (which is updated regularly in lab), and again after lab. The lab is your opportunity to explore the anatomy and physiology for yourself at your own pace; we only assist you to understand the topics.

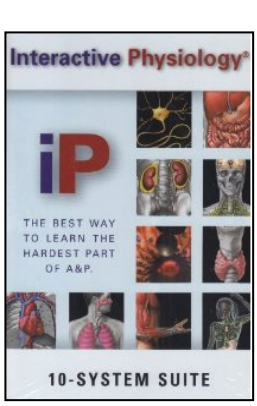


Many students find that *The Anatomy & Physiology Coloring Workbook: A complete study guide* (*9th edition*) by EN Marieb is a relatively painless introduction to and study guide for the topics we cover in this lab.



The textbook for the lecture is *Human Anatomy & Physiology* (*9th edition*) by EN Marieb and K Hoehn. (You may choose to use the 8th edition, but we will be working from the 9th!) ISBN-10: 0-321-74326-1 ISBN-13: 978-0-321-74326-8 *****This IS a required resource!****

The textbook will be a very important reference both during labs and when completing your homework.



New textbooks often come with a CD-ROM entitled *Interactive Physiology: 10-system suite.* This can be very useful, particularly as we work through some of the more difficult physiology. If you are buying used textbooks, make sure that you ask about this CD-ROM. (This is NOT a required resource.)

Additional materials or equipment

It is a good idea to protect your clothes in the lab. Wearing an old (and slightly large) shirt that will cover your clothes is the easiest and cheapest solution. Lab coats may be available for sale at Tools of the Trade, near the airport.

Course policies

You are responsible for your learning. Take full advantage of the resources available, including the lab manual, textbook, lectures, homework, on-line resources, and office hours.

- We recommend you attend every lab period. Most students who attend lab only to write the quiz and then leave, fail this lab. If something stops you from attending class—contact your instructor as soon as you know that you will have to miss class and to determine the possibility of attending another section. **Do not just show up in another lab section. Students attending alternate sections without notifying the instructor may be asked to leave, or may not be able to take the quiz.**
- For the same reason (that goal is to understand concepts not to attend lab), if something prevents you from attending lab, or if we cannot give a lab because of absence, typhoon, etc., you are still responsible to keep up with the reading/study; contact a classmate for copies of new handouts if necessary.
- ***No make-up quizzes or exams***—If you miss a quiz or exam for a valid reason, we will average it out of your score, otherwise your score = 0. You **must** tell your instructor if you have such a valid reason **before** you miss the quiz or exam.
- ***No extra-credit assignments or extra-credit exams of any kind will be given***.
- **Academic dishonesty**: All assignments and exams must be your own work. The term "**plagiarism**" includes, but is not limited to, the use, by paraphrase or direct quotation, of the published or unpublished work of another person without full and clear acknowledgment. **This includes copying another student's answers!** You may however, quote materials from the textbook or manual for your homework assignments, without citation. Plagiarism also includes the unacknowledged use of materials prepared by another person or agency engaged in the selling of term papers or other academic materials. If you are not sure what plagiarism is and how to avoid it in using sources for your work, see www.indiana.edu/~wts/pamphlets/plagiarism.shtml—but be careful when paraphrasing not to change the meaning of scientific information. The answers that you write on quizzes, tests, and exams must come from only your head or the information supplied in the exam papers; anything else is cheating. **Cheating on exams will be punished with a mark of 0 and a final grade of "F."** The term "**cheating**" includes, but is not limited to: (1) use of any unauthorized assistance in taking quizzes or exams, e.g., looking at other students' answers, using crib notes (including electronic), getting information from another person via any kind of communication; (2) dependence upon the aid of sources beyond those authorized by the instructor in solving problems, or carrying out other assignments; or (3) the acquisition, without permission, of exams or other academic material belonging to a member of the University faculty or staff. If you need to use an electronic translator, you must discuss this with your instructor in advance. **Note that obvious examples of students copying each other's homework will result in both students receiving a score of 0 (zero). Second instances of student's copying each other's homework will result in a final grade of "F."** If a cell phone is visible during a test or quiz—it will be considered electronic cheating. **Cheating on any quiz or exam will be punished with a final grade of "F" in this lab for all students involved, including those who allowed other students to obtain or read their answers.**

- Lab courtesy: to cause the least disruption to your fellow learners, please
  - avoid coming late to lab or leaving early. If you absolutely must, come in quietly! If you need to go to the toilet, please wait until there is a break.
  - don't talk to each other when we are addressing the class. It is very rude to your fellow students (as well as to your instructor)!
  - turn your cell phones off during exams.

UOG Disabilities Policy Statement

The University of Guam (UOG) is committed to achieving equal opportunity and full participation of persons with disabilities by providing for non-discriminatory access to its services and facilities through the ADA Office. The Mission of the ADA Office is to ensure non-discriminatory access to all benefits, privileges, opportunities and obligations to students with disabilities and to ensure a process for full compliance by UOG with the ADA of 1990, as amended, and Section 504 of the Rehabilitation Act of 1973, as amended, taking into account the economic climate and multi-cultural diversity of the institution.

If you are a student with a disability who will require an accommodation(s) to participate in this course, please contact your instructor and the Institutional Compliance Officer privately to discuss your specific needs. You will need to provide your instructor with documentation concerning your need for accommodation(s) from the EEO/ADA & Title IX Office. If you have not registered with the EEO/ADA & Title IX Office, you should do so immediately to coordinate your accommodation request. The ADA Office provides reasonable accommodation for students in accordance with the UOG Policy and Procedure for students and applicants with a disability. The ADA Office can be contacted at telephone number (671) 735-2244 or Telephone Device for the Deaf (TDD) number (671) 735-2243. You must directly request for all ADA services four (4) to eight (8) weeks in advance. The ADA policy can be found on the UOG website.

Tobacco-free/Smoke-free/Vaping-free campus

UOG is a tobacco-free/smoke-free/vaping-free/e-cigarette-free campus. Thank you for not using tobacco products or e-cigarettes on campus, for helping to fight cancer, and for helping to make UOG a healthy learning environment.

Schedule

We will give you the tentative schedule today and update it regularly during lab, so you can catch up if you missed.

Drop dates

University policy sets the drop dates. You can withdraw from classes "voluntarily" until 9 March 2016 (i.e., without notifying your instructor) and as late as 13 May 2016 with Dr. Moots' signature on a withdrawal form. Monitor your progress! If you fail the first test, find out why and make appropriate changes.

Student workload

Time outside the classroom—You should plan to spend an average of 3h/session for the **lab** and 2h studying for every hour of **lecture** class time (as with every class). We suggest you structure those 3h per week for lab as follows. (These times will vary from student to student, and from day to day depending on assignments and tests; the 3h/week and the allocation of that time are suggestions that your need to adjust on the basis of your experience in this lab.)

1h pre-reading the manual (*before it is due*)

Read the sections for the next day's lab. Make note of new terms/key words. (Key words are printed in boldface when first introduced. The definitions can be found in the Glossary at the back of the textbook.) *Note that we do not want you to memorize the definitions and will not ask for them on the tests.* You will be expected to know what the terms mean and be able to work with them.

2h doing assignments

Use the homework assignments to try and understand the material that we completed in lab. It is your chance to get more out of the lab and to review and integrate the material in the lecture and lab. Note that you will be able to check your answers to the homework assignments after the date they are due. You should carefully compare your answers to those in the key. This way you will

(a) be ready to study for the lab practicals and lecture tests; and (b) become aware of any points which may need clarification. **Don't skip all of the Physio Ex homework assignments!**

+ Additional time working with other print/internet sources

If the lab manual & textbook do not give clear, complete, or up-to-date information that will allow you to answer the homework, or if you feel that you need different resources to understand the material better, you should spend time on the web and/or find other textbooks.

Additional resources

Note that there is a histology atlas in *A Brief Atlas of the Human Body* and a Histology Review Supplement on the *PhysioEx* CD-ROM. The on-line website "Mastering A and P" and the CD-ROM entitled *Interactive Physiology—10-system suite* also include study materials and quizzes. *The Anatomy & Physiology Coloring Workbook: A complete study guide* (*9th edition*) and *A Brief Atlas of the Human Body* (*2nd edition*) are also helpful resources for many students. There are also thousands of lectures and videos on YouTube, Ted, Khan Academy, and other open access university sites. Don't overlook their utility!

Special Considerations for the Lab

1. You must wear gloves while actively completing dissections. (The person taking notes, or acting as a dissection guide does not need to use gloves.)
2. No food or drink may be consumed in the lab during dissections.
3. If you are unsure—Ask!
4. Microscopes are valuable equipment. Always follow the appropriate procedures for obtaining Köhler Illumination and for properly putting them away.
5. Dangerous behavior will result in a final lab grade of "F."

Contact information for classmates

Write down the names and contact info for at least your lab group, so that you can contact one or more of them if you miss a class or want to study together. We strongly encourage you to form study groups!

Name	Home phone	Cell	email

Principles of Biology
BI 157- 01 Syllabus
SPRING 2016

Class Lecture:

M/W 11:00–12:20 p.m., **Lecture Hall:** SC200
Instructor: Dr. Dan Lindstrom. **Office:** SC102B. **Phone:** 735-2611 dlindstrom@triton.uog.edu
Office hours: Monday, Tuesday, Wednesday - 9:00 – 11:00, Otherwise by appointment.

Catalog course description (Revised from Catalog)

"This is the first semester of a two-semester course covers vocabulary and some processes. It is required of all biology majors and may be used by others to satisfy the general education requirements. It includes three hours of lecture weekly. The lab, BI157L, MUST be taken concurrently..." The first semester focuses mostly on sub-organismal aspects of the biological world (atoms and molecular biology to cellular architecture and processes to genetics and heredity mechanisms) followed by an introduction to evolution, the main binding concept of the discipline of the biological sciences.

Rationale for offering the course

The discipline of Biology is an extremely broad ranging subject spanning an enormous range of physical scale (interactions at the atomic dimension to ones planetary) and topics as diverse as biochemistry, cell biology, genetics, neuroscience, physiology, systematics, behavior, evolution, physical structure & function, ecology, conservation and philosophy (to name but a few!). A student of Biology needs a firm grounding in the basics and language of the discipline across this diverse set of subjects in order to be sufficiently equipped to delve deeper into any of the sub-disciplines. To this end, this course covers all major principles and areas of the Biological Sciences in order to lay a strong foundation for a career within any aspect or subject of the discipline. We strongly believe in a philosophy and approach similar to a Liberal Arts education applied to the discipline of Biology. In other words, a broadly trained Biologist is a better and more interesting Biologist. No matter whether you pursue a narrowly focused career in a medical field, conduct research on a biological subject, teach at any level or manage a small farm, you will benefit from the foundation of having been broadly biologically trained early in your academic career. This results from the fact that the myriad areas of Biology are knit together by recurring themes that permeate all areas of the subject and the better one understands these basics at all levels, the better prepared one is to focus on a subset of them later in a career.

"We are like dwarfs on the shoulders of giants, so that we can see more than they, and things at a greater distance, not by virtue of any sharpness of sight on our part, or any physical distinction, but because we are carried high and raised up by their giant size."

Bernard of Chartres, 1159

"If I have seen a little further it is by standing on the shoulders of Giants."

Isaac Newton, 1976

In this course we hope to introduce you to the giant Principles of Biology so that you might confidently climb upon its shoulders seeing a bit further and clearer down the road of the discipline and your career.

Intended course student learning outcomes (SLOs)

The objectives of this course (along with the associated lab BI157L and the 2nd semester courses BI158 and BI158L) are based on, but not limited to, those set forth in the preface of our chosen text. The details of how the instructor guides students to meet these objectives vary somewhat, but the common intended outcomes are as follows:

Course SLO Matrix (Covers BI157, 157L, 158 and 158L)

SLOs (Course Student Learning Outcomes)	PLOs (Program SLOs)	ILOs (Institutional SLOs)	Assessment Method
1. Design and experiment to test a given hypothesis, using the procedure and terminology of the scientific method.	PLOs 1a, 1b,1c, 1d, 2, 3, 4, 5, 6, 7	ILOs 1, 2, 3, 5, 6, 7	Written exams, written assignments, oral presentation, lab/field observation
2. Cite the cell theory, and relate the structure of organelles to their functions in both prokaryotic and eukaryotic cells.	PLOs 1a, 1b, 1c, 1d, 2, 4	ILOs 1, 3, 5, 6, 7	Written exams
3. Describe the mechanisms of evolution, explain why evolution is the principle unifying concept in biology, and discuss natural selection as the primary agent of evolutionary change.	PLOs 1a, 1b, 1c, 1d, 2, 4	ILOs 1, 3, 5, 6, 7	Written exams
4. Explain the role of genetic information in all species, and discuss applications of genetics that affect society.	PLOs 1a, 1b, 1c, 1d, 2, 4	ILOs 1, 3, 5, 6, 7	Written exams
5. Describe several mechanisms by which cells and organisms transfer information, signal transduction, chemical signals (such as hormones and pheromones), electrical signals (for example, neural transmission), sounds, and visual displays.	PLOs 1a, 1b, 1c, 1d, 2, 4	ILOs 1, 3, 5, 6, 7	Written exams
6. Argue for or against the classification of organisms in three domains and several kingdoms or supergroups, characterizing each of these clades; based on your knowledge of genetics and evolution, give specific examples of the unity and diversity of organisms in different domains and supergroups.	PLOs 1a, 1b, 1c, 1d, 2, 4	ILOs1, 3, 5, 6, 7	Written exams
7. Compare the structural adaptations, life processes, and life cycles of a prokaryote, protist, fungus, plant, and animal.	PLOs 1a, 1b, 1c, 1d, 2, 4	ILOs 1, 3, 5, 6, 7	Written exams
8. Trace the flow of matter and energy through a photosynthetic cell and a nonphotosynthetic cell, and through the biosphere, comparing the roles of producers, consumers, and decomposers.	PLOs 1a, 1b, 1c, 1d, 2, 4	ILOs 1, 3, 5, 6, 7	Written exams
9. Describe the study of ecology at the levels of individual organism, a population, a community, and an ecosystem.	PLOs 1a, 1b, 1c, 1d, 2, 4	ILOs 1, 3, 5, 6, 7	Written exams

The specific learning objectives for each topic can be found within the text itself as "Key Concepts" listed at the beginning of each chapter, explained in order in the text and then summarized again at the end of each chapter.

Format and activities in the course

The schedule includes three hours of lecture each week and three hours of lab (the lab is a separate course, is graded as such and has its own syllabus). Assessment activities in the lecture section will be written examinations only (see below). The lecture material will closely follow the order and content of the text, further explaining difficult material and highlighting important information and concepts. By no means will ALL text material be covered in lecture, BUT all text material is fair game for exams.

Textbook and readings

The one required textbook for the course is *BIOLOGY 10th Edition,* by Campbell and will be used for both this course and BI 158. The contents of this textbook cover the entire realm of the biological sciences from Atoms to Ecosystems and will be a good basic general reference for the rest of your career.

The nature of this sort of text is that it addresses so many topics that it can't go into depth on any one of them… you will be able to do that in advanced courses.

You are expected to use the learning resources as active learners. Read appropriate sections of the text ***in advance*** and ***again after*** the topic is covered in class. I will assist you to understand text topics and concepts during lecture. The book is a convenient resource, but it is not the only one. Videos in class or lab, and information in the news and on the Internet are all legitimate resources, though you must judge the reliability and currency of external sources.

Additional materials

In addition to the main text you may want to purchase the text-specific Study Guide that is available from several on-line retailers. It contains chapter specific additional materials that will help you conquer all concepts and terms as well as prepare for written examinations. Also available on-line (sometimes at the the UoG Bookstore) is a small but extremely useful *Dictionary of Word Root and Combining Forms* by Borror which contains the Latin and Greek roots of many unfamiliar words commonly used in the biological and other sciences. Biology, like every other branch of scientific inquiry, uses a language of its own, fortunately most of them are based in Latin and Greek, so this little dictionary will come in handy and help you learn new terms quickly for not only this course but all your future courses. The lab course that is taken concurrently with this one (BI 157L) is designed to give you practical/hands-on experience with the concepts covered in the Text and Lecture as well as helping you become a better student of Biology, it also will require and strongly suggest some additional materials that will also serve you in the Lecture part of the course. See Additional Resources below for a word on the availability of electronic resources made specifically for use with your text.

Evaluation and grades

My goal in testing is to make sure that you have a firm grasp of the facts and language of the discipline and also take it some step(s) further and have reached a level of understanding the key concepts and integrating them across different areas of the discipline.

As with any introductory course you will need to master a large volume of new terms, objects and facts. This is an unavoidable nature of getting started in any new and complex discipline. The trick is to learn to build an intellectual framework on which to easily organize a daunting volume of new, and sometimes confusing, information.

In addition to testing your recall of rote information, you will also be tested through your skills in:

- *interpreting* - e.g., changing diagrams into text or vice versa; reading graphs.
- *exemplifying* - e.g., giving an example of …
- *classifying* - e.g., being able to define key characteristics and group things accordingly.
- *summarizing* - e.g., be able to *summarize* a complex process into its basic components.
- *inferring* - e.g., draw a logical conclusion from presented information.
- *comparing* - e.g., determine how similar things are as a criterion for applying analogy.
- *explaining* - e.g., explain the cause of order seen in the natural world.

In addition to understanding, you will be expected to:

- *apply knowledge*, e.g., apply argument by analogy to make strong, testable, predictions.
- *evaluate*, e.g., establish criteria for judging the effectiveness of a proposed solution to a biological problem.

You will begin with *factual knowledge* (i.e., terminology, specific details), but the goal is for you to end with *conceptual knowledge*, including:

- knowledge of principles and generalizations and be able to discuss nuance and exceptions to these broader concepts.
- knowledge of theories and their strengths and shortcomings.
- knowledge of classifications and various usages of them.

These are the foundational materials and skills that you will build upon throughout your academic career. The points breakdown for the lecture section is as follows:

Text Unit Exams (4)	500 pts (#1=100, #2=140, #3=180, #4=80)
Final Exam (Cumulative)	100 pts
Total	600 pts

Your final grade will be based upon the following percentages:

A 90-100% [600–540 pts]
B 80-89% [539–480 pts]
C 70-79% [479–420 pts]
D 60-69% [419–360 pts]
F ≤60% [≤360 pts]

Course policies

You are responsible for your learning. Take full advantage of the resources available (which are nearly limitless!), including the textbook, suggested texts, lectures, activities, on-line resources and office hours.

- I recommend that you attend every lecture period but I do not take attendance. Chronic absences or other evidence that you have not been doing your best to learn will indicate that you don't deserve discretionary points. – **Note that attendance is required and recorded for all labs**.
- For the same reason (that goal is to understand concepts not to attend class), if something prevents you from attending class, or if I cannot give a class because of absence, typhoon, etc., you are still responsible to keep up with the reading/study; contact a classmate for copies of notes and any handouts if necessary.
- Complete the reading assignments **before** the class for best learning.
- Do not leave an examination until you are ready to hand it in. This means to take care of "business" prior to entering the exam room. You will NOT be let back in if you leave for any reason.
- Show up to exams on time. I do not distribute exams to students who come in the door after exams have already been completed by other students. In such cases, I will consider the circumstances of your tardiness and choose one of the options immediately below.
- **No make-up tests:** If you miss a test or are tardy for a test (see above) for a valid reason, I will average it out of your score, otherwise your score = 0. You **must** tell me if you have such a valid reason, preferably well before the test date and time. **If you miss two exams, you will receive an F for the course.**
- **Extra Credit Assignments:** I generally DO NOT give any extra credit for work outside the scope of the syllabus of this course. You should assume that your final letter grade will be based ONLY on

the scores from the 5 exams. That means that if you blow one exam and want to pull your grade up, you will need to score higher on other ones to compensate.

- **Academic dishonesty**: All assignments and tests must be your own work. Answers you write on the tests must come only from in your head or the information supplied in the test papers; anything else is cheating. The term "**cheating**" includes, but is not limited to: (1) use of any unauthorized assistance in taking quizzes, tests, or examinations, e.g., looking at other students' answers, using crib notes (including electronic), getting information from another person via any kind of communication; (2) dependence upon the aid of sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems, or carrying out other assignments; or (3) the acquisition, without permission, of tests or other academic material belonging to a member of the University faculty or staff. If you need to use an electronic translator, you must discuss this with me in advance.
- **Classroom courtesy:** In order to cause the least disruption to your fellow learners, please:
    - Avoid coming late to class or leaving early. If you absolutely must, come in or leave quietly and take a seat near the door! If you need to go to the toilet, please wait until there is a suitable break.
    - Don't talk to each other during class. It is very rude to your fellow students (as well as to me).
    - Please turn your cell phones off or to silent mode.

Special needs

Students with special needs must make arrangements through the ADA office. The University makes every attempt to accommodate such requests (see below). Students who cannot meet the requirements of a particular field trip must discuss the problem with me several days in advance.

UoG Disabilities Policy

In accordance with the Americans with Disabilities Act (ADA) of 1990 and the Rehabilitation Act of 1973, the University of Guam does not discriminate against students and applicants on the basis of disability in the administration of its educational and other programs. The University offers reasonable accommodations for a student or applicant who is otherwise qualified, if the accommodation is reasonable, effective and will not alter a fundamental aspect of the University's program nor will otherwise impose an undue hardship on the University, and/or there are not equivalent alternatives. Students are expected to make timely requests for accommodation, using the procedure below*. If appropriate, the University may choose to consult with such individuals, at or outside the University, to provide expertise needed to evaluate the request for accommodation. Each student bears the responsibility for initiating and then documenting a disability-related request for accommodation in the manner requested in this Policy. [*full text at: www.uog.edu/dynamicdata/EqualEmploymentOffice.aspx?siteid=1&p=66]

UoG Tobacco-Free Policy

Pursuant to Board of Regents Resolution No. 13-24, the University of Guam (UOG) has a total ban on the sales, smoking and the distribution and use of tobacco and tobacco-based products on the UOG Campus, and properties.

The purpose of this policy is to protect the public health and welfare by prohibiting smoking and the use of tobacco products or simulated smoking devices, including but not limited to E-cigarettes, on the UOG campus and properties; to guarantee the right of nonsmokers to breathe smoke-free air, while recognizing that the need to breathe smoke-free air shall have priority over the desire to smoke; and to encourage a healthier, more productive living/learning environment for all members of our University community.

Student work load

Time outside the classroom–You should plan to spend an average of 2 h studying for every hour of **lecture** class time (as with every class), and 1 h/week for the lab. I suggest you structure those 7 h per week as follows. (These times will vary from student to student, and from week to week depending on assignments and tests; the 6 h/wk and the allocation of that time are suggestions that your need to adjust on the basis of your experience in this course.)

2 h pre-reading the textbook (*before* class).
- Read the sections that are assigned (not always the whole chapter)
- Make note of key concepts, new terms/key words, and write out definitions. (Key concepts are listed on the first page of each chapter, and terms/words are printed in boldface when first introduced. The definitions can be found in the Glossary at the back of the book.) *Note that I do not want you to ONLY memorize the definitions.* You will be expected to know what the terms mean and be able to work with and apply them.

2 h re-reading the textbook and revising your notes after class.
- Focus on the Learning Objectives, Review questions and Critical Thinking in the text and at the end of each chapter. These are your study guide and practice test questions.

2 h doing assignments and testing yourself on the Learning Objectives and Review questions.
- You should write out practice answers to all these questions. This way you will (a) be ready for whatever selection of them appears on the test; (b) become aware of any points which may need clarification in class or during office hours. When we review your exams in class, make sure you understand what the correct answer is and why/how you got it incorrect. This is an important part of your learning process and will help you increase your score on future exams.

+ Additional time working with other print/Internet sources (See Below).

Additional resources

This text is specifically supported by myriad on-line supplemental materials that you would do well to take advantage of, (http://www.pearsonmylabandmastering.com/northamerica/masteringbiology/) and Preface pages xvii - xiii for additional resources and links. Copies of lecture presentations and other helpful materials will be updated and made available on a Moodle page dedicated to this course. See instructor see for Moodle password.

Contact information for classmates

Write the names and contact info for two or three classmates you can contact if you miss a session or want to study together. I encourage you to form study groups!

*****NOTE on Labs for this course*****

All BI157L sections are separate courses taught by various independent faculty members who do not teach the lecture portion of this course. Please refer your questions to your specific instructor in regards to Lab matters.

COURSE SCHEDULE/OUTLINE (subject to changes as needed)

Lecture Schedule:			**Chapter Alignment**
Jan.	20	Course Introduction, Syllabus Distribution	Preface
	25	Evolution, the Themes of Biology, and Scientific Inquiry	Ch.1
	27	The Chemical Context of Life/Water and Life	Ch.2&3
Feb.	1	Carbon and the Molecular Diversity of Life	Ch.4
	3	The Structure and Function of Large Biological Molecules and Prep for Exam #1	Ch.5
	8	**Exam #1** - Covers Text Chapters 1-5 (100 Points)	
	10	Exam #1 Review. A Tour of the Cell	Ch.6
	15	Membrane Structure and Function	Ch.7
	17	An Introduction to Metabolism	Ch.8
	22	Cellular Respiration and Fermentation	Ch.9
	24	Photosynthesis	Ch.10
	29	Cell Communication	Ch.11
Mar.	2	The Cell Cycle and Prep for Exam #2	Ch.12
	7	**NO CLASSES - Guam History/Chamorro Heritage Day**	
	9	**Exam #2** – Covers Text Chapters 6-12 (140 Points)	
	14	Exam #2 Review. Meiosis and Sexual Life Cycles	Ch.13
	16	Mendel and the Gene Idea	Ch.14
	21-26	**NO CLASSES - SPRING BREAK**	
	28	Chromosomal Basis of Inheritance	Ch.15
	30	The Molecular Basis of Inheritance	Ch.16
Apr.	4	Gene Expression: From Gene to Protein	Ch.17
	6	Regulation of Gene Expression	Ch.18
	11	Viruses	Ch.19
	13	DNA Tools and Biotechnology	Ch.20
	18	Genomes and Their Evolution and Prep for Exam #3	Ch.21
	20	**Exam #3** - Covers Text Chapter 13-21 (180 Points)	
	25	Exam #3 Review. Descent with Modification: A Darwinian View of Life	Ch.22
	27	The Evolution of Populations	Ch.23
May	2	The Origin of Species	Ch.24
	4	The History of Life on Earth and Prep for Exam #4	Ch.25
	9	**Exam #4** - Covers Text Chapters 22-25 (80 Points)	
	11	Exam #4 Review and Prep for Final Exam	

FINAL EXAM: Wednesday May 18, 2016 10:00 – 11:50 a.m. SC200 (Cumulative, 100 Points)