Biol 101 Modern Biology Dr. Steven R. Spilatro Fall 2018

LECTURE: MWF @ 10:00-10:50 AM in Bartlett 166
TEXT: *Biology*, Raven et al, 9th Edition, 2008

Tentative Schedule

I. Ecology: Aug 27– Sept 17

Reading Assignment

★★ Quizzes on Fri 9/7 and Fri 9/14 ★★

Community Ecology	Chapter 57
Dynamics of Ecosystems	Chapter 58

★★ Exam covering Ecology on Friday, Sept 21 ★★

II. Evolution: Sept 19 - Oct 17

★★ Quizzes on Fri Oct 5 and Fri Oct 12★★

(Read the Discussion of Darwin and Evolution in Chapter 1)

Genes within Populations	Chapter 20
Evidence for Evolution	Chapter 21
The Origin of Species	Chapter 22

(We will also discuss a few topics from Chapters 23 & 26)

★★ Exam covering Evolution on Friday, Oct 19 ★★

III. Cellular Reproduction: Oct 22 - Nov 2

★★ Quiz on Mon Oct 29 ★★

How Cells Divide (mitosis)	Chapter 10
Sexual reproduction and meiosis	Chapter 11

IV. Heredity: Nov5 – Nov 19

★★ Quiz on Fri Nov 9 ★★

Patterns of Inheritance	Chapter 12
Chromosomal inheritance	Chapter 13

★★ Exam covering Cellular reproduction and Heredity on Monday Nov 19 ★★

V. Human Reproductive Systems Nov 27 - Dec 8

The Reproductive Systems	Chapter 53

★★ Final Exam: Friday, Dec 14 at Noon ★★

Homework assignments will be made during appropriate class periods

mQuiz Self-Quizzes, PowerPoint files, and Animations can be accessed at

*** **http://w3.marietta.edu/~spilatrs/biol101/Biol101Index.html *****

Grading Policy

Grading will be based upon the following components:

(Point values are approximate)

Lecture exams	3	x ≈100	≈ 300pts
Final exam			≈ 200
Quizzes	6	x 25	≈ 150
Quickie Quizzes			≈ 50
Misc homework assignments			≈ 100

		Total	≈ 800

Grading Scale

97 - 100% = A+
93 - 96% = A
90 - 92% = A-
87 - 89% = B+
83 - 86% = B
80 - 82% = B-
77 - 79% = C+
73 - 76% = C
70 - 72% = C-
67 - 69% = D+
63 - 66% = D
60 - 62% = D-
< 60% = F

Other Class Information and Policies

- **Contact Information & Office Hours.**
  Phone: 376-4748 **email:** spilatrs@marietta.edu **Location:** Bartlett Hall Rm 173
  Office Hours: Monday 11:00 AM; Thus. 1:00 PM; however, I make every effort to be accessible at other times; feel free to just "drop in", if I'm busy, we can schedule another time at which we can meet.
- **Late assignments** will be penalized 10% per day and failure to turn in an assignment may result in a failing grade for the semester, at the instructor's discretion.
- **Exams & Quizzes:** Quizzes will be administered during the final 10-15 minutes of the scheduled class day. An entire class period (50-55 minutes) will be available for Exams. The Final Exam is comprehensive. Quickie-quizzes (usually a single question) will be given at the beginning of most classes. These cannot be made up if you are late arriving to class or absent (two will be dropped from the final grade).
- **Unexcused absences.** Also see "Notification" below. If a student has an unexcused absence from class on the day of a quiz or exam, it is the decision of the instructor, considering any special circumstances, whether to allow a make-up. There will be no make-ups for missed Quickie-quizzes.
- **Excused absences.** Also see "Notification" below. Classes missed due to participation in college-sponsored co-curricular events or college-recognized religious observances are considered excused absences provided appropriate procedures are followed. The student must notify the instructor at the earliest possible time before the absence and arrange to make up missed work as defined by the instructor's syllabus. The co-curricular activity must be a performance, professional meeting, or athletic contest to be considered an excused absence. The religious observance must appear on the College's calendar of religious observances in order to be considered an excused absence. If it does not, an excused absence can be granted only if the student requests special permission from the Dean of the Faculty. Other policies governing excused absences:
  - An excused absence allows the student to make up exams or quizzes *(excluding Quickie Quizzes since two of these can be dropped)* given during the absence.
  - Assignments due on the day of the excused absence must still be turned in on time. It is the student's responsibility to learn if any new assignments are made the day of the excused absence.
  - Excused absences from laboratories. A missed lab session could significantly affect a student's ability to complete assignments and lab reports. In some circumstances it may not be possible to replicate a lab activity at a different time, or it may involve group work and multi-week projects. It is the student's responsibility to investigate alternative lab sections or alternative times to make up the lab activities, and students are expected to make feasible

accommodations to reschedule a missed lab. If the instructor decides that a lab cannot be made up an alternative written assignment may be substituted. However, no more than two excused absences will be allowed from labs that cannot be made up

- **Notification:** I must be notified at least one week in advance if you must miss a class the day of an exam or quiz for an excused absence, at which time an alternative exam time will be arranged. You may not be allowed to makeup an exam if I receive "last minute" notification. Makeup exams and quizzes will not be allowed for unexcused absences.
- **Cell phones and laptop computers** should not be on during class periods without permission of the instructor.
- **Policies also** include guidelines in other documents provided for this course (e.g., manuals or handouts) and oral instructions given in class.
- **Extraordinary circumstances**. In the case of extraordinary circumstances, the instructor reserves the right to resolve grading issues on an individual basis.
- **Extra Credit.** Certain presentations of a biological nature can be attended for a possible 5 points bonus credit. To receive the bonus points you must **submit to TurnItIn.com** a 1 page essay that summarizes the information presented and your reactions to the presentation **within one week of the presentation**. Maximum of 20 total points of extra credit for the course. *Note that your extra credit essay can be handed in to only one course for credit!*

  Turnitin.com Information: Class ID: 18752782 Password: Biol101-0102
- **Email Communication.** You are expected to check your college MC email account daily to look for class messages.
- **Disabilities.** Students who believe that they may need accommodations due to a documented disability should contact the Academic Resource Center (Andrews Hall, Third floor, 376-4700) and the instructor as soon as possible to ensure that such accommodations are implemented in a timely manner. You must meet with the ARC staff to verify your eligibility for any accommodation and for academic assistance.
- **Academic Dishonesty**. Dishonesty within the academic community is a very serious matter, because dishonesty destroys the basic trust necessary for a healthy educational environment. Academic dishonesty is any treatment or representation of work as if one were fully responsible for it, when it is in fact the work of another person. Academic dishonesty includes cheating, plagiarism, theft, or improper manipulation of laboratory or research data or theft of services. A substantiated case of academic dishonesty may result in disciplinary action, including a failing grade on the project, a failing grade in the course, or expulsion from the College.
- **Student Expectations.** Students have responsibilities for achieving the course objectives. Learning is a process that requires skills and strategies, and you must actively develop those that work best for you. The document "Keys to Academic Success" describes many ways to improve your learning skills, and you should read and look for new learning strategies that you can apply. In this course the foundation of academic success includes:
  - Attending class
  - Reading the assigned material
  - Being an active participant in the learning process by coming prepared to class, bringing questions about concepts that you do not understand, and answering questions posed during the class period.
  - Completing question banks and working with classmates to understand the concepts
  - Using online resources including self-quizzes, animations, etc.

Learning Objectives. These are some of the core earning objectives for this course. There are also other subsidiary learning objectives. Students after completing this course should be able to:

- Define and explain ecological concepts including ecosystem, ecological niche, types of symbiosis, and succession.

- Identify different types of defense mechanisms and explain how the physical appearance and behaviors of organisms facilitate their ecological niches.
- Describe the flow of energy and nutrients through an ecosystem with reference to food chains, food webs and tropic levels.

- Describe and apply the fundamental principles of Darwinian Natural Selection as a mechanism for evolution, including the roles of genetic variation, fitness and reproductive success.
- Identify and describe evidence for evolution from paleontology, modern organisms, and at organismal, developmental and cellular levels.
- Define and describe the species concept, mechanisms for reproductive isolation, and patterns of micro- and macro- evolution.
- Describe the cellular processes that occur during mitosis and meiosis.

- Explain Mendel's principles of segregation and independent assortment.
- Calculate the frequency of occurrence of hereditary traits that follow different patterns of Mendelian and non-Mendelian heritance, including simple mono and dihydbrid crosses, codominance, polygenic inheritance, lethal alleles, as well as sex-linked and sex-influenced traits.
- Describe how the underlying mechanisms of chromosome sorting during meiosis and subsequent sexual reproduction account for patterns of inheritance.
- Describe and give examples of genetically inherited human disorders.

- Identify different mechanisms of reproduction used by different organisms.
- Identify the different anatomical organs of the human male and female reproductive systems.
- Describe the hormonal control of the human reproductive systems
- Identify the basic stages of human fetal development

Conceptual Objectives

There are also certain abstractions that transcend all of science and mold a modern understanding of the universe and humanity's place within it. Awareness of these concepts will allow you to recognize affinities that extend across disciplinary boundaries and will facilitate learning of new ideas. Some of these unifying concepts are given below:

1. Scale and Proportion. Understanding the scale of the universe --from the size of the cosmos to that of an atom, from a geologic time frame to the daily events of human lives, from the speed of light to that of a snail --expands the human mind and places human existence in a broader perspective.
2. Change and Evolution. Evolution of new organisms, development from child to adult, chemical interconversions, and geologic plate tectonics, reveal the transient nature of the natural world. Knowing that the natural world undergoes systematic change over time is essential to scientific understanding.
3. Dynamic Equilibrium. Many natural phenomena are in a state of "dynamic equilibrium." This means that although the individual components of complex systems such as ecosystems and cells are in constant activity and change, the overall system remains constant. Recognition of this property illuminates the essential interdependence between individual components of nature.
4. Scientific "Modeling". Science does not reveal absolute knowledge of nature. Thus, all scientific knowledge should be viewed as "models" of particular facets of nature. These models allow scientists to make predictions of the real world, but can be modified in future to accommodate new observations.

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