

Biology 7 - General Biology II
Evolutionary, Organismal and Ecological Biology
Los Angeles Mission College – Spring of 2013

Instructor: *J. Michael Reynolds*

Lecture: TTh 7:15 – 8:40 AM; Lab 8:50 AM – 12:00 PM (Section #0143) CMS 106

Office Hours: MTuWTh 12:00 – 1:00 PM in Office or Lab CMS 106

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Life Science Web Site - <http://www.lamission.edu/lifesciences>

Professor Reynolds Website: <http://www.lamission.edu/~reynolmj/515>

Prerequisites: Math 125 or equivalent placement on Math Placement Exam

Advisory: English 28 or ESL 8 – College-level reading, writing and study skills

Drop class without receiving a W – February 18

Last day to drop without a W – September 24

Last day to drop with W – May 3

Note: (1) There is a new enrollment limit at California community colleges. The limit is now three times to take a class and includes non-passing grades and withdrawals.

(2) It is the responsibility of the student to drop the class on or before May 5 or the student is subject to receiving a failing grade in the class.

Articulation: You are also encouraged to view articulation agreements at www.assist.org.

Biology 7 is intended for students *intending to major in an area of the life sciences at the college/university level*. Upon completion of this course, the student will be able to describe the morphological and physiological characteristics that are used to determine the phylogenetic relationships of organisms of the five kingdoms of life. The student will be able to describe the anatomy and physiology of the major organ systems of vertebrates. In addition, the student will learn to apply the principles of ecology and evolution to understand the behavior and adaptability of plant and animal ecosystems.

The student will apply the concepts learned in lectures through hands-on application in related laboratory exercises. The laboratory experience will allow the student to develop practical knowledge of many fundamental biological principles by employing an *experimental approach* to scientific inquiry. Students will be required to explore their own questions in many of the labs, and will be required to perform a *final project* at the end of the term. *Critical analysis and small group collaboration are encouraged throughout the course.*

Student Learning Outcome

Biology 7 students will interpret, critique and analyze an article related to a controversial issue in biological sciences and write a critical essay presenting their point of view.

Major Objectives

Throughout the semester the student:

1. Applies and interprets the terminology of biology in both written and oral expression.
2. Demonstrates the ability to read with comprehension current, historical, and popular literature in biology.
3. Develops the ability to use classical and contemporary laboratory methods for studying basic life processes.
4. Applies the general concepts from the textbook and other references to the specific principles that are demonstrated in the laboratories, and shows this in written and oral reports.

5. Develops a practical understanding of the use of the scientific method through experimental design.
6. Expresses an awareness of the complexity and interrelatedness of organisms and their environment.

Required Materials

Lecture: Biology, Reece, et. al. 9th (2011) (also used for Biology 6)

Laboratory: Investigating Biology, Morgan and Carter, 7th (2011) (also used in Biology 6)
Morgan and Carter Lab Worksheets – at <http://www.lamission.edu/~reynolmj/515>
(Fish Farm, A Simulation of Commercial Aquaculture – Wait until end of semester

Lecture Notes

The lecture notes for Biology 7 can be accessed from the Life Sciences department home page located on the internet at: <http://www.lamission.edu/~reynolmj/515>. On the left hand side under My Pages, click on Biology 7.

Additional Materials

Each student should purchase ScanTron Answer Sheets for the Quizzes, Midterms, and Final Exam.

Fantastic Outside Reading (optional - my suggested reading list of biology majors that like great books)

"Beak of the Finch," Jonathan Weiner, 1994 (Pulitzer Prize Winner)

"Guns, Germs, and Steel," Jared Diamond, 2000 (Pulitzer Prize Winner)

"On the Origin of Species by Means of Natural Selection," Charles Darwin, 1859

Evaluation and Grading

- (1) Laboratories (approximately 150 points) - Students will be required answer all questions in each of the assigned laboratories and return the completed assignment at the *beginning* of the next laboratory meeting. Standard laboratories will be worth 10 points each. Students must turn in the laboratories complete and on time - incomplete and late laboratories will be marked down. **Any student who is absent from two or more labs is subject to receiving a failing grade in the course.**
- (2) Quizzes (120 points) - The vital importance of staying up-to-date on reading assignments will be reinforced by the administration of eight short, 15 point quizzes. There will be a total of 8 quizzes during the term. **Quizzes cannot be made up.** At the end of the term, the low quiz score will be dropped and the student will be awarded "bonus points" equivalent to the average score of all quizzes taken. A series of videos called *Evolution* will be presented during various classes during the course. Questions related to these videos will be on the quizzes.
- (3) Lecture Exams (4 X 100 = 400) - There will be four examinations covering material from the reading assignments, lectures, and laboratories. One or more of the exams will have a laboratory practical component in which identification will be required. The dates of each of the exams are provided in the course schedule. **No make-up examinations will be given.** A student who has an *excused* absence from one-exam only will have the equivalent percentage earned on the next examination counted for that missed score. The Final Examination (#4) will be **on Tuesday, May 29, at 7:15 AM. Make all plans accordingly!!!!**
- (4) Case Study Analysis (20 points) - Students will be required to read and respond to a controversial issue raised by advances in modern biological sciences. After reading the case, the student will write a two-page minimum, double-spaced, and typed essay in which he/she will argue the reasons for their point of view. Emphasis will not be placed on the position taken, but rather on the clarity and thoroughness of the arguments. There is no correct answer - written communication of ideas is the key.
- (5) Practical Examination (30 Points) – Students will be required to answer "practical" questions related to laboratories during the organismal part of the course.

- (6) Field Trips (2 X20 = 40) - There will be two mandatory Saturday field trips: on **Saturday, March 9**, from 9:45 AM – 1:00 PM at the Los Angeles Zoo (Admission fee \$7 + parking); and on **Saturday, May 11**, from 10:00 AM – 12:00 PM at the Cabrillo Beach Museum and Tide Pools (\$1 - 4 Parking and \$2 Voluntary contribution) Carpooling from the campus is strongly encouraged for both field trips.
- (7) Small Group Project (20 points) - Working in pairs or groups not to exceed four partners, students will research and present a Powerpoint presentation on a specific topic. Each individual will submit their own written *final project report* and the group will together give an oral presentation summarizing their findings on **Thursday, May 24**.

Grading Scale

<u>Percentage of Total Points</u>	<u>Letter Grade</u>
100 - 90	A
89 - 80	B
79 - 70	C
69 - 60	D
59 - lower	F

NOTE: total points for the course may change depending on circumstances during the semester.

Student Resources Available

Bookstore: For hours of operation, book availability, buybacks, and other information call 818-364-7767 or 7768 or visit <http://www.lamissionbookstore.com/>

Counseling Department: For appointments and information call 818-364-7655 or visit <http://www.lamission.edu/counseling/>

Disabled Students Programs and Services (DSP&S): For appointments, eligibility and information call 818-364-7732 or visit <http://www.lamission.edu/dsps/>

Extended Opportunity Programs and Services (EOPS): For appointments, eligibility and information call 818-364-7645 or visit <http://www.lamission.edu/eops/>

Financial Aid: For information and applications call 818-364-7648 or visit <http://www.lamission.edu/financialaid/>

Library: For information on hours, resources, workshops, and other services contact 818-364-7106 or visit <http://www.lamission.edu/library/>

Tutoring Services in Learning Center: Laboratories for Learning, Writing, Math & Science. Walk-in and appointment services offered. Call 818-364-7754 or visit www.lamission.edu/learningcenter/

General Comments

- Biology 7 is an intensive science course intended for students wishing to pursue science degrees. It is incumbent upon every student to stay up with the readings, turn in assignments on time, and be actively involved in the labs.
- Do not fall behind!!! This is a fast-paced course that covers a lot of material in a short amount of time. Students should read the text material prior to the lecture and read the lab exercise prior to the lab.
- Work together!!! Each student is individually responsible for their own study habits and mastery of the material. However, science is most often a collaborative effort which involves many individuals working together to achieve a common goal. This is especially true in the laboratory. Some students may find the formation of small study groups beneficial, but one must have something to contribute as an individual for any group effort to be successful.
- Ask questions!!! Science is a deliberative field based on question and fact finding. If you have a question, ask! Chances are there is someone beside you wanting to know the same thing, but is afraid to raise a hand. Speak up!
- Safety, cleanliness, and organization in the laboratory is **mandatory**. Use proper technique in the handling of all equipment and supplies. Return microscopes and equipment to their proper location in the correct condition at the end of the lab period. Leave the laboratory in a neater condition than you found it!

Lecture/Laboratory Schedule

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<u>Date</u>	<u>Lecture (Text Chapter)</u>	<u>Laboratory/Assignment</u>
<u>Week 1</u>		
Tu 2/5	Introduction to the Course The Evolutionary History of Diversity (26)	· <u>Evolution</u> - #1 – Darwin's Great Adventure
Th 2/7	Bacteria and Archaea (Kingdom Monera) (27)	· <u>M/C - #13</u> - Bacteriology (13.1,3,4)
<u>Week 2</u>		
Tu 2/12	Protists (28) QUIZ #1	· <u>M/C #14</u> - The Protists (14.1)
Th 2/14	Fungi (31)	· <u>M/C #14</u> - The Kingdom Fungi (14.2)
<u>Week 3</u>		
Tu 2/19	Plants I: Colonization of Land (29) QUIZ #2	· <u>M/C #15</u> - Bryophytes and Seedless Vascular Plants
Th 2/21	Plants II: Evolution of Seed Plants (30)	· <u>M/C #16</u> - Seed Plants
<u>Week 4</u>		
Tu 2/26	<u>EXAMINATION #1</u> - Chaps 26-31	Introduction to Animal Diversity (32)
Th 2/27	Animals and Invertebrates I (33)	· <u>M/C #18</u> - Animal Diversity I (18.1,2,3)
<u>Week 5</u>		
Tu 3/5	Invertebrates II and Vertebrates I (33, 34)	· <u>M/C #18,19</u> - Animal Diversity (18.4,5 and 19.1,2)
Th 3/7	Vertebrates II (34) QUIZ #3	· <u>M/C #19</u> - Animal Diversity (19.3,4)
Sa 3/9	Field Trip to Los Angeles Zoo (\$5 field trip entry fee; Parking is free; Examination of Animals 9:45 AM – 12:30 PM)	
<u>Week 6</u>		
Tu 3/12	Animal Structure and Function (40)	· <u>M/C #22</u> - Vertebrate I - Skin and Digestive · <u>Introduction to Histology</u> (Histology Drawing Sheets)
Th 3/14	Circulation and Gas Exchange (42) QUIZ #4	· <u>M/C #23</u> - Vertebrate II - Circulatory & Respiratory
<u>Week 7</u>		
Tu 3/19	Animal Nutrition (41)	· <u>M/C #24</u> – Vert. III – Excretory, Reproductive, Nervous
Th 3/21	<u>EXAMINATION #2</u> - Chaps 32-34, 40-42	
<u>Week 8</u>		
Tu 3/26	· <u>Practical Examination</u> : Labs 18, 19; 22-24	Osmoregulation and Excretion (44)
Th 3/28	No Class – LAMC Non-instructional Day	
<u>Week 9</u>		
3/29 – 4/5	No Class – Spring Break	

Week 10

Tu 4/9 Hormones and the Endocrine System (45) · Circulation and Health (Lab #12 online)

Th 4/11 Animal Reproduction (46) · Natural Selection (Lab #11 – online)
QUIZ #5

Week 11

Tu 4/16 Animal Development (47) · M/C #25 - Animal Development

Th 4/18 Neurons, Synapses and Signaling (48) Lab (on website) – Sea Urchin Fertilization
<http://www.stanford.edu/group/Urchin/over.htm>

Week 12

Tu 4/23 Nervous Systems (49) · M/C #26 - Animal Behavior

Th 4/25 Sensory and Motor Mechanisms (50) · Reflex Physiology (online)

Week 13

Tu 4/30 Plant Structure and Growth (35) · M/C #20 - Plant Anatomy (20.1, 2, 3, 5)
QUIZ #6 Read pp. 1-31 in Fish Farm for Thursday!!!

Th 5/2 Transport in Plants (36) · Fish Farm - Lab #1 (Chs 1 & 2, pp. 1-31)
In lab: Complete WS 1, and data sheets (23, 27, 30)
At home: (Read Chs 3 & 4 and complete WS 2 & 3)

Week 14

Tu 5/7 **EXAMINATION #3** -Chaps 44-49, 35-36

Th 5/9 Introduction to Ecology (52) · Fish Farm - Lab #2 (Ch 4, pp. 66-76)
QUIZ #7 **Due:** All Fish Farm Worksheets and Data Sheets

Sa 5/11 Field Trip to Cabrillo Beach Museum and Tide Pools

[Parking: 1\$/hour; \$2 donation; Museum Aquarium: 10:00 AM – 12:00 PM; Low Tide 5:05 AM – 0.5 feet]

Week 15

Tu 5/14 Population Ecology II (53) Population Growth (online)

Th 5/16 Behavioral Biology (51) Select Final Group Project - Planning

Week 16

Tu 5/22 Community Ecology (54) Work on Final Projects
QUIZ #8

Th 5/24 Ecosystems (55) Group Presentations of Final Projects

Week 17

Tu 5/29 **Final Examination** – 7:30 – 10:30 AM

Code of Honor and Integrity

Los Angeles Mission College
Department of Life Sciences

Students at Los Angeles Mission College, because they are members of an academic community dedicated to the achievement of excellence and the pursuit of honor, are expected to meet high standards of personal, ethical, and moral conduct. These standards require personal integrity and a commitment to honesty without compromise. Without the ability to trust in these principles, an academic community and a civil society cannot exist. Los Angeles Mission College students and faculty are as committed to the development of students with honesty and integrity as they are to the academic and professional success of its students.

The **Code of Honor and Integrity** is an undertaking of the students, first and foremost, both individually and collectively, that they will:

1. not give or receive dishonorable aid during exams, quizzes or assignments
2. do their share and take an active part in seeing to it that fellow students, as well as themselves, uphold the spirit and letter of the Code of Honor and Integrity.

Some examples of conduct that are regarded as being in violation of the Honor Code include:

- Copying from another's examination or quiz, or allowing another to copy from one's own papers
- Using any unpermitted source of information, human or other, during an exam, quiz or assignment that influences the grade; this includes the use of technological devices
- Any student-to-student collaboration that is unpermitted
- [Plagiarism](#) (plagiarism is defined as the use, without giving reasonable and appropriate credit to, or acknowledging the author or source, of another person's original work)
- Representing as one's own work as the work of another
- Giving or receiving aid on an academic assignment under circumstances in which a reasonable person should have known that such aid is not permitted

As a part of the effort to promote an environment of honesty and integrity during quizzes and examinations, the following guidelines will apply for any courses in the Department of Life Sciences:

1. Students will leave all books and all other non-essential items (e.g. paper, electronic devices) on the floor so that they are not useable nor block the sight line between professor and student. No electronic devices will be in reach.
2. Students will not communicate in any way that will dishonorably assist themselves or another student.
3. Students will leave the room during an exam only if permitted by the professor's policy. If permitted, only one student may leave the room at any time and be gone for only the average length of time needed for the stated purpose. Students will leave all purses, bags, books, phones, jackets, etc., in the classroom during the absence.
4. Students will promote the spirit and letter of the **Code of Honesty and Integrity** by dissuading fellow students from dishonest activity and, when such casual persuasion does not work, informing the professor of the possible dishonest activity, either anonymously, or otherwise.
5. Students will make every effort to avoid even the appearance of dishonesty or lack of integrity

Violation of this policy will not be tolerated and violators will be subject to severe penalties. The success of the **Code of Honor and Integrity** is based upon the collective desire of students, faculty and the community to live in an environment that embraces respect for that which is right – both in the college and in society as a whole.