

BIOLOGY FOR HEALTH-RELATED SCIENCES / NON-MAJORS
BIOL 123.502 (CRN 34650) M&W AT 3:00-4:15PM IN A133
SYLLABUS FOR FALL 2015 SEMESTER
Dr. Claudia Barreto, Professor of Biology

OFFICE HOURS: *You're welcome to attend office hours so I can help you succeed.* My office is room 100A in the Health Sciences Building. You do **not** need an appointment to come to my regularly scheduled office hours on MONDAYS 7:30-8:30AM & 1:30-2:30PM, WEDNESDAYS 7:30-8:30AM & 10:30-11:30AM, & THURSDAYS 10:30-11:30AM. *If you have a conflict at these times, please contact me by email (barr@unm.edu) so we can schedule an alternate time to meet.*

LEARNING OUTCOMES: This course is about **you**. We will learn *how scientists study living things to understand how they work*. We'll focus on the human body and healthcare applications. This knowledge will empower **you**. Science and technology have become increasingly significant in our society. **Science literacy** (being able to understand scientific information) is now crucial so **you** can make wise choices and take appropriate actions to increase the chances that **you'll** have the kind of body and world **you** want to live in. By the end of the semester, **you** should be able to **demonstrate your ability to use the concepts, content, logic, and critical thinking skills from this course to evaluate scientific information**. Then **you'll** be able to make intelligent decisions on biological issues that will impact **your** life. *To be confident that you have the knowledge you need to make intelligent decisions, by the end of this course you must be able to demonstrate that you have the ability to explain biological principles & processes for your family & friends, in the following areas:*

- ✚ The Logic of Scientific Research
- ✚ Chemistry of Life (Biochemistry)
 - Atomic structure & chemical bonding
 - Structure & functions of organic molecules
 - Metabolic reactions & pathways
 - Structure & function of protein enzymes
 - Diffusion & Osmosis
 - pH
- ✚ Cell Structure & Functions
 - Structures & functions of organelles
 - Structure & functions of cell membranes
 - Metabolism: How cells do work.
 - ATP synthesis

- Cellular homeostasis
- ✚ DNA Structure & Functions
- ✚ Nuclear Division:
 - Mitosis
 - Meiosis
- ✚ Human Genetics - Mechanisms of Inheritance
- ✚ Biotechnology
- ✚ Basic Human Physiology
 - Body homeostasis
 - Tissue Structures & Functions
 - Organ Structures & Functions
 - Organ System Structures & Functions

REQUIRED LEARNING RESOURCES:

1. Inquiry into Life by S. Mader & M. Windelspecht, 14th Edition, 2014, McGraw-Hill. ***Make sure you buy access to "connect," the website for our text. You are required to complete LearnSmart study modules for each chapter we cover this semester.*** These learning activities are designed to help you understand the concepts and processes and to help you achieve the course learning outcomes so you can succeed. *I will track your completion of the LearnSmart modules.*
2. **Course Webpage:** <https://learn.unm.edu/>. Our webpage contains resources you'll need to succeed in the course. ***You are responsible for all announcements & changes to the syllabus posted on the webpage.***
3. **UNM email account to access our Class Email Reflector.** I will send you important course information over our reflector. ***You are responsible for all announcements and any changes to the syllabus that I send over the reflector,*** so please check your UNM email for announcements from me frequently.

COURSE POLICIES

RESPECT: *We are all here to learn.* Please conduct yourself in class in a manner that makes our classroom climate favorable to learning for everyone.

GRADING: Course grades are based on four class exams (100 points each = 400) and four quizzes (20 points each = 80), LearnSmart 16 x 10 points = 160); Molecules of Life Presentation & Quiz (34 points), your daily participation in class  (31 points), the Syllabus Quiz (32 points), your answers to the "Review Questions" (19 x 7 points = 133 points & 1 x 20 points = 20 points; total = 153 points), & "Other Assignments" to be explained in class (7 x 10 points = 70 points). There is no curve in the grading for this course, so you are not competing with anyone except yourself. **You are welcome to attend my office hours so I can help you achieve the course learning outcomes.** The points you earn will be added and then divided by the total possible points (960).

Grades will be assigned on your percentage, as follows:

100% or higher = A+; 91-99% = A; 90 = A-; 89% = B+; 81-88% = B; 80 = B-; 79% = C+; 71-78% = C; 70 = C-; 60-69% = D; below 60% = F.

CREDIT/NO CREDIT:

To earn 'credit' for this course must have a grade of 71% or higher.

LEARNSMART: There are 19 LearnSmart (LS) assignments on our McGraw Hill Connect webpage. To access our LearnSmart assignments go to: <https://connect.mheducation.com/class/c-barreto-123502-mw-3pm>

The LearnSmart assignments are *designed to help you learn the material and help you prepare to get the most out of our class discussions.* You **MUST** complete the LS assignments as per the **dates on this syllabus.** Each assignment is worth 10 points. You are required to complete 16 of the LS assignments. If you complete all 19 you may earn extra credit. Completing all 19 is *highly recommended* because this is an extremely valuable way to focus and to maximize the effectiveness of your study time. *If you do not complete more than 3 of the LS assignments, you will be dropped from the course.*

MORE ABOUT REVIEW QUESTIONS: We will study 23 topics over the semester. For each topic, I will post "Review Questions" on our webpage. The **purpose of the review questions is to help us see how well you understand the material.** So, please answer these questions **IN YOUR OWN WORDS** because that's the only way we can determine if **you** have any misconceptions we need to clarify before an exam. **You can earn up to 7 points for correctly completing each set of Review Questions (word-processed) & turning them in before the start of class on the dates indicated (sorry no credit for late work).** Copied answers will **not** be accepted because that won't let us find out if **you** really understand the material. You are required to turn in 20 of the 23 sets of Review Questions. **Comprehensively answering the Review Questions is an excellent way to achieve the learning outcomes and to prepare for quizzes and exams.** You can earn extra credit by turning in more than the 20 required sets of Review Questions. **After failing to turn in 3 assignments in a row you will be dropped from the course.**

 **ATTENDANCE POLICY:** Participation in class learning activities is necessary so you can fully understand the material we study. **You are responsible for "signing in" before the start of class (before 3:00pm) to document your attendance (= getting to class & ready to learn by 3:00pm, remaining for the entire class period, & participating in all learning activities).** After 3 unexcused absences you will be dropped from the course.

COURSE POLICIES (CONTINUED)

CLASS NOTES: Our Class Notes are outlines of the information covered in class. They are ***designed to help you focus on the key concepts and to serve as useful study tools***. You should read over the Class Notes *before* each class meeting to help you learn about the topics we discuss. Our Class Notes are posted on our course webpage.

HOW TO SUCCEED: A university education is worth a lot because people who earn college degrees have demonstrated that they have acquired advanced knowledge and skills. The courses are challenging and will help prepare you to be a life-long learner. *If you come to class prepared, participate in all class learning activities, comprehensively complete your assignments on time, and use all the resources I provide for you to study every day, then you will be able to achieve the course learning outcomes. Please come to office hours whenever you need any help learning.*

MISSED EXAM/QUIZ POLICY: Official documentation of a medical or family emergency is required. In such an event, please contact me as soon as possible to discuss the problem. An un-excused absence will result in loss of points for that exam/quiz.

ACADEMIC MISCONDUCT: In this course you are expected to perform to the best of your ability in an honest manner. Cheating, plagiarism (= copying another person's work), or other acts of misconduct will result in a severe penalty to you, as per university policy .

F.E.R.P.A.: The Federal Family Educational Rights & Privacy Act prohibits disclosing grade information to anyone but the student. I will not share your grades with anyone but you. Grades will ***not*** be sent over email as this is ***not*** a secure medium.

SPECIAL NEEDS: Students with disabilities/special needs should please come speak to me during office hours, as soon as possible, so we devise the best strategy for you to achieve the course learning outcomes.

CELL PHONES: As a courtesy to the class, please turn off your cell phone. **Texting is prohibited during class.**

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 **Dishonesty in Academic Matters:** Each student is expected to maintain the highest standards of honesty and integrity in academic and professional matters. The University reserves the right to take disciplinary action, including dismissal, against any student who is found responsible for academic dishonesty. Any student who has been judged to have engaged in academic dishonesty in course work may receive a reduced or failing grade for the work in question and/or for the course. Academic dishonesty includes, but is not limited to, dishonesty on quizzes, tests or assignments; claiming credit for work not done or done by others; hindering the academic work of other students; and misrepresenting academic or professional qualifications within or outside the University.

PROPOSED PLAN OF STUDY

DATE	ASSIGNMENTS TO PREPARE FOR TODAY'S CLASS	TODAY'S CLASS TOPIC
AUG. 17		1: LEARNING BIOLOGY
19	Study Text Ch. 1 (1-17) & Ch. 2 (18-29) & LS1	2-1: CHEMISTRY OF LIFE
24	Study Ch. 2 (29-42) & LS2	2-2: THE MOLECULES OF LIFE
26	Prepare For Your Presentation & Quiz	MORE ABOUT THE MOLECULES OF LIFE
31	Study Ch. 3 (43-62) & LS3	3: CELL STRUCTURE & FUNCTION
SEPT. 02	Study Ch. 4 (63-78) & LS4	4: CELL MEMBRANES
07	LABOR DAY: SORRY, NO CLASS MEETING!	
09	Study Ch. 6 (99-112) & LS6	6: METABOLISM: ENERGY & ENZYMES
14	REVIEW Ch. 1-4 & 6 and the U1 Class Notes	REVIEW & QUIZ #1
16	STUDY for exam # 1	EXAM #1
21	Study Ch. 7 (113-125) & LS7	7: HOW CELLS MAKE ATP; CELL RESPIRATION
23	Study Ch. 25 (494-500)	25-1: DNA STRUCTURE & REPLICATION
28	Study Ch. 25 (500-509 & 515-516) & LS25	25-2: GENE EXPRESSION: BUILDING PROTEINS
30	Study Ch. 5 (79-88)	5-1: MITOSIS
OCT. 05	Study Ch. 5 (89-98) & LS5	5-2: MEIOSIS
07	REVIEW Ch. 5, 7, & 25 & U2 Class Notes	REVIEW & QUIZ #2
12	STUDY for exam #2	EXAM #2
14	Study Ch. 23 (462-479) & LS23	23: PATTERNS OF GENE INHERITANCE
19	Study Ch. 24 (480-493) & LS24	24: CHROMOSOMES & INHERITANCE
21	Study Ch. 26 (517-532) & LS26	26: BIOTECHNOLOGY
26	Study Ch. 25 (509-514) & Ch. 4 (66)	25-3: THE GENETIC BASIS OF CANCER
28	Study Ch. 11 (189-208) & Ch. 4 (75-76) & LS11	11: TISSUES, ORGANS, & HOMEOSTASIS
NOV. 02	Study Ch. 14 (252-276) & LS14	14: DIGESTION & NUTRITION
04	REVIEW Ch. 11, 14, & 23-26 & U3 Class Notes	REVIEW & QUIZ #3
09	STUDY for exam #3	EXAM #3
11	Study Ch. 12 (209-230) & LS12	12: BLOOD & CIRCULATION
16	Study Ch. 13 (231-251) & LS13	13: YOUR BODY'S DEFENSES
18	Study Ch. 17 (310-318 & 325-338) & LS17	17: NERVOUS SYSTEM OVERVIEW
23	Study Ch. 20 (387-407) & Ch. 4 (66) & LS20	20: ENDOCRINE SYSTEM
25	Study Ch. 21 (408-435) & Ch. 5 (90-92) & LS21	21: HUMAN REPRODUCTION
30	Study Ch. 22 (436-455 & 460-461) & LS22	22: HUMAN DEVELOPMENT
DEC. 02	Review Ch. 4, 5, 12, 13, 17 & 20-22 & U4 Notes	REVIEW & QUIZ #4
WE ARE REQUIRED TO TAKE EXAM #4 ON WEDNESDAY, DECEMBER 9 TH AT 3:00 PM		

NOTE

Please complete the "ASSIGNMENTS TO PREPARE FOR TODAY'S CLASS" on the dates assigned. You'll have trouble appreciating our class discussions if you don't come to class prepared, *so please follow this schedule to keep up with your studying.* If you complete all of the learning activities in LearnSmart (LS), as indicated above, & in our text, this will greatly expedite your ability to learn the concepts & processes we study over the semester. These are very effective tools for learning.