

**WEST LOS ANGELES COLLEGE
DEPARTMENT OF SCIENCE**

- I. BIOLOGY 003B:** Section 0400
MSA 203
- II. PREPARED BY:** PATRICIA ZUK, Ph.D.
- III. REVISED FOR:** Winter 2015
- IV. PREREQUISITES:** Concurrent enrollment in Biology 3A
- V. UNITS AND HOURS:** 1 UNIT; 2:35 HOURS LAB
10:40 AM TO 1:20 PM M,T,W,Th
- VI. COURSE INSTRUCTOR:** PATRICIA ZUK, Ph.D
zukp@wlaac.edu
MSB 210

VII. COURSE DESCRIPTION: This is an introductory course in general biology designed to fulfill a laboratory science requirement and will also provide a foundation for advanced courses in biology, including Biology 006 and 007, Human anatomy 001, Human Physiology 001, and Microbiology 020. This course is a laboratory-based course that covers topics such as proper biological quantitation, use of the microscope, cell structure and division, phylogeny and the classification of organisms, along with an introduction to several of the major plant and animal phyla on the planet. Detailed dissections of several animals and many representations of major plants will be included. This course is designed to take with Biology 3A, a lecture-based course that emphasizes the basic principles in biology, including the scientific method, biological chemistry, cellular respiration, photosynthesis, heredity, molecular genetics, evolution & ecology. It is recommended that you take both Biology 003A and 003B during the same semester.

You are welcome to tape my lectures. I also have my own personal website – www.patriciazuk.com where the lecture presentations can be found along with additional learning materials. This website is password protected with the username of **student** and the **case-sensitive password of #1Wlacstudent**. I would recommend that you print out these lectures and bring them to class so that you may supplement them throughout the lecture/lab period with your own notes taken during class. You will also be required to re-create simple figures and diagrams that I will present to you throughout lecture so be sure to purchase a lab notebook or bring paper.

VIII. REQUIRED TEXT: This lab course does not have a required text. Instead, materials will be provided to you by your professor. The Biology Lab Manual by Steven Fink may also be used as supplementary material. This may be purchased at the bookstore.

IX. SUGGESTED REFERENCES: Numerous supplementary texts and reference materials will be made available to you throughout the course.

X. COURSE OBJECTIVES: This course explores the fundamentals of biology using a laboratory format. The course is given in a 2 hour and thirty five minute labs four days per week. Each lab will begin with a short thirty minute lecture that will introduce the topic for the day. These lectures will consist of Powerpoint presentations. Additional handouts will be given to you in the form of a laboratory exercises. At the end of the course, students should have an extensive knowledge of the course material and have a strong understanding of:

- (1) scientific quantitation
- (2) the proper use of the microscope including a basic knowledge of its parts and how it works.
- (3) the principal categories of chemicals that comprise living organisms
- (4) the structure of a basic prokaryotic and eukaryotic cell
- (5) the mechanisms of cell division – mitosis and meiosis
- (6) how biological organisms are classified
- (7) the major groups of Phylum Protista and how some representative protists like Euglena and paramecium are structured, function and replicate
- (8) the major groups of Phylum Fungi and how a representative fungus like a mushroom is structured and replicates
- (9) the major Phyla of the Plant Kingdom and how the major representatives in selected phylum are structured and replicate
- (10) the differences in structure and physiology of a moss, a fern, a gymnosperm and an angiosperm
- (11) the major processes that comprise plant photosynthesis
- (12) the major Phyla of the Animal Kingdom and how the major representatives in each selected phylum are structured and function
- (13) Subphylum Vertebrata and its major classes of Amphibia, Reptilia, Aves and Mammalia, including the anatomy and physiology of some of its major systems

XI. WLAC Student Learning Outcomes (SLOs): West LA College as an institution is committed to an environment of learning and respect for its students. Its mission is to serve the community by providing quality instructional services through its programs and facilities. The college has created a series of Student Learning Outcomes (SLOs) that are designed to maximize the successes and experiences of the students here at WLAC.

A. Critical Thinking: Analyze problems by differentiating facts from opinions, using evidence, and using sound reasoning to specify multiple solutions and their consequences.

B. Communication: Effectively communicate thought in a clear, well-organized manner to persuade, inform, and convey ideas in academic, work, family, and community settings.

C. Quantitative Reasoning: identify, analyze, and solve problems that are quantitative in nature.

F. Technological Competence: Utilize the appropriate technology effectively for informational, academic, personal, and professional needs.

XII. BIOLOGY PROGRAM & BIOLOGY 003B SLOS: The Biology program at WLAC also has several unique SLOs in addition to those of the college. They are:

- Explain how scientists investigate causes of natural biological phenomena.
- Utilize biological information to make informed decisions about environmental issues.
- Utilize biological information to make informed decisions about personal issues.

Finally, Biology 003B has its own SLO. At the end of the semester, a student should be able to determine whether and unknown solution contains a sugar, a starch or a protein using the Benedict's test, the Biuret test or the Iodine test.

XIII. REGISTRATION & ATTENDANCE:

Attendance: I will not take attendance at every lab. I will be taking attendance for the first few days to assess the number of no-shows. If you are not in class by the third lab (1/07) you will be dropped and another student added to take your place! To be reinstated to the class, there must be sufficient room to add you again and you must explain to me why you chose not to show up for the first two classes of a 15 lab semester.

As a properly enrolled student, you are responsible for maintaining proper attendance. You are all adults and must obviously realize that to do well you must come to lab. Your grade will depend on your active attendance and your participation during labs. You will be responsible for all information, lecture notes etc... that you miss if you are absent. **Missed exams CANNOT be made up.** If you miss one – you will lose the marks. No exceptions for anyone or any excuse!!!!!!

Drop dates: All enrollment procedures are now done on-line. **YOU** are responsible for your enrollment status in this course and in all others!!! So.....Be aware of drop dates. January 7th is the last day to add this class in person. January 7th is also the last day to drop this class with no fee and without receiving a 'W' on your transcript. January 30th is the last day to drop the class and receive a 'W' on your transcript. Beyond this date, you will **NOT** be able to drop the class.

I am not responsible for dropping you from this class – **YOU ARE**. Therefore – if you choose to leave the class and do not drop – you will receive a failing grade at the end of the semester. Let me reiterate - You are responsible for dropping this class. If you do not, you **will** receive a failing grade and I will NOT comply with any appeals etc.... Therefore, be responsible.

XV. METHODS OF EVALUATION: You will be given 4 examinations. Each of these exams is weighted equally for a total possible 200 points. Study guides for these exams may be provided by me – but no guarantees! These exams will be a combination of multiple choice questions you will answer using a scantron, fill in the blanks and identification questions given in a practical exam format.

Course Break-down:

4 lecture exams @ 50 points each 200 points

TOTAL

200 points

Grading policy:

Course letter grade will be based on the following scale

90 – 100% = A

80 – 89% = B

70 – 79% = C

60 – 69% = D

59% and below = F

XVI: COURSE MATERIALS:

Materials Needed:

1. Laboratory handouts
2. Notebook for taking notes
3. Several different colored pens/pencils for taking notes
4. Scantrons for lab exams. These may be purchased in packets from the bookstore.
5. Number 2 pencils for the scantrons

XVII: CONTACT INFORMATION:

Phone: To contact me, please leave an e-mail message at: zukp@wlac.edu or at zukpat@yahoo.com. I check both addresses daily. If you are running late – be sure to call one of your classmates so they can let me know. Do NOT even think about being late the day of an exam!

Office hours: by appointment or from:

1. 9:35 to 10:35 AM (MSB 210) Monday through Thursday

Mailbox: Please do not leave written messages. Be sure to communicate with me via email

The schedule given on the next page is a TENTATIVE schedule of topics. Topics may be changed to accommodate time needed.

BIOLOGY 003B

Patricia Zuk, Ph.D.

Winter 2015

<u>DATE</u>	<u>Topic</u>
Jan 5	<u>Introduction to Biology 003B: Scientific Quantitation</u> Lab: exponential notation, the metric system, scientific conversions
Jan 6	<u>The Microscope: Looking at cells and tissues</u> Lab: An introduction to the microscope
Jan 7	<u>The Wonderful World of Organic Chemistry: Atoms, Molecules and Macromolecules</u> Lab: Enzymes
Jan 8	<u>A tour through the cell: The cell membrane and cellular organelles: Eukaryotic vs. Prokaryotic cells</u> Lab: Cell structure
Jan 12	EXAM #1 (Quantitation, Cells and Tissues)
Jan 13	<u>Cell Division: Mitosis and Meiosis</u> Lab: Understanding mitosis and meiosis
Jan 14	<u>Life on Earth: Classifying organisms by phylogeny</u> Lab: Bacteria
Jan 15	<u>Phylum Protista</u> Lab: Representative protists
Jan 19	MLK DAY - NO CLASS
Jan 20	EXAM #2 (Cell division, Phylogeny and Protists)
Jan 21	<u>Phylum Fungi: The mighty mushroom</u> Lab: Fungi – Yeasts, molds and mushrooms
Jan 22	<u>The Plant Kingdom: Successful invaders of land</u> Lab: Mosses and Ferns
Jan 26	<u>Plant Reproduction: Gymnosperms vs. Angiosperms</u> Lab: The cone, the flower and the fruit
Jan 27	<u>Plant anatomy: Roots, stems and leaves</u> Lab: Plant structures and physiology
Jan 28	<u>The Animal Kingdom: what makes an animal?</u> Lab: Sponges and Cnidarians
Jan 29	EXAM #3 (Plants and Fungus)
Feb 2	<u>Invertebrates: Worms, Arthropods and Echinoderms</u> Lab: Earthworm, crayfish and sea star dissection
Feb 3	<u>Vertebrates: Being a chordate</u> Lab: Frog dissection
Feb 4	<u>Vertebrates cont.....: Being a mammal</u> Lab: Fetal Pig dissection
Feb 5	FINAL EXAM (Animals)