WEST LOS ANGELES COLLEGE

Spring 2019

BIOLOGY 3A (sec. 22727) 3 units

INTRODUCTION TO BIOLOGY

Class hours: Wednesday 6:45 pm to 8:15 pm

Class location: MSA 005

Online: Canvas

Instructor: Kahung Lee, Ph.D.

Email: Canvas Private Message (faster response); leek2@wlac.edu (slower response)

Office hours: Wednesday, 8:15 pm to 9:15 pm in MSA005 or MSB 211 or by appointment

(This syllabus may be subject to revision.)

COURSE DESCRIPTION

This lecture course is part of a two-course series (with Biology 3B) in general biology that is designed to fulfill a laboratory science requirement. Students must be enrolled concurrently in a lecture (Biology 3A) and a lab section (Biology 3B). Biology 3A emphasizes the basic principles of biology and the fundamental characteristics of living organisms through the study of scientific method, cell structure and function, energy acquisition, reproduction, gene expression, heredity and the genetic control of cellular processes, evolution, and ecology. Biology 3A, when combined with Biology 3B, is equivalent to Biology 3.

Prerequisite: None

Corequisite: Bio3B

Advisories: Math105 AND Eng100 OR Eng028

Articulations: IGETC, CSU, Associate degree

STUDENT LEARNING OUTCOMES

Upon successful completion of this course, students will be able to:

1. Identify the functions of selected carbohydrates, lipids, proteins, nucleic acids, vitamins & minerals & how a deficiency or excess could affect one's health.
2. Relate the structure of a cell and its organelles to essential processes of life.

A student who completes this program will be able to:

1. Explain how scientists investigate the causes of natural biological phenomena.
2. Explain how living things are organized, reproduce, acquire matter & energy, and inherit & express genetic instructions.
3. Utilize biological information to make informed decisions about environmental issues.
4. Utilize biological information to make informed decisions about personal issues.
5. Perform basic biological lab procedures.

MATERIALS

Required Textbook: Inquiry Into Life by Sylvia S. Mader and Michael Windelspecht (ISBN: 1259426165), 15th edition, 2017

(to save money, you may purchase any previous edition, rent the textbook from the bookstore, or even download a free e-copy from the internet.)

Required Online: Canvas

Optional Website: http://www.professorfink.com/BIOLOGY_3_LECTURE.html

GRADING

A	88-100%
B	74-87%
C	60-73%
D	50-59%
F	below 50%

Exams (2)	200 points (25.0%)

Final Exam	140 points (17.5%)
Writing Assignment (1)	100 points (12.5%)
Quizzes (4)	100 points (12.5%)
Discussions (10)	100 points (12.5%)
Participation	160 points (20.0%)
TOTAL	800 POINTS (100%)

Exams and Final Exam

-THREE exams will be administered (100 points each). The exam with the lowest points will be dropped. This is to help you in case you are ill or have an emergency on the day of an exam; therefore, take ALL the exams in case you underperform or must miss one exam later in the semester. Only ONE exam will be dropped.

-As a result, **NO MAKE-UP EXAMS** will be given for any reason. Any exam that is missed will receive zero point. You will be dropped from the class after missing **two exams**.

-**Final exam will be on Wed, 5/29.** Final exam will consist of 40 points of questions from Exam 1 to 3 and 100 points of questions from the materials after Exam 3. Final exam cannot be dropped.

-**Exam dates: 2/27, 3/27, 5/1**

-Exams will consist of identification questions as well as objective-type questions (e.g. multiple choice, true/false) that will be answered on computers.

Writing Assignment

-A writing assignment (100 points) will be given. This assignment should be in Times New Roman, 12-point font size, single space, one-inch margin, and 1-2 pages long.

-ONE page of references must be included at the end of 1-2 pages long paper. Minimum TWO sources are required. All cited references must be within the last five years.

-**The written assignment will be due at the end of Spring Break on Sun, 4/7 at 11:59 p.m.**

Quizzes

-Quizzes will be posted online on the Canvas shell. Each quiz will cover the chapters (both lecture and online) done, except Quiz 1. Quiz 2 to 5 will consist of only objective-type questions (e.g. true/false, multiple choice, and matching).

-There will be no quiz in exam weeks.

-Quizzes will be posted on Friday. You will be able to take them from Friday to Monday only. You will have 45 minutes to complete the quiz.

- FIVE quizzes will be administered (25 points each). The quiz with the lowest points will be dropped. This is to help you in case you are ill or have an emergency in the weekend of a quiz; therefore, take ALL the quizzes in case you underperform or must miss one quiz later in the semester. Only ONE quiz will be dropped.

-Quiz dates: 2/8 (Quiz 1), 2/15 (Quiz 2), 3/15 (Quiz 3), 4/19 (Quiz 4), and 5/17 (Quiz 5)

Discussion

-Canvas Discussion will have a question posted related to the online video lecture of that week. After watching the online video of that week, each student will be able to post the answer on Canvas Discussion.

-There will be ten discussions for this course. Each discussion will be 10 points.

-All discussions will close on Monday at 11:59 pm.

Participation

- This class uses a variety of interactive and reflective activities from a teaching framework called Reading Apprenticeship. They are designed to provide you with agency in your education and awareness of how you learn. Your grade will be determined in part by your participation. If you are not present, then you cannot participate. Attendance will be taken during every lecture. Each day is 10 points. There is a strong correlation between poor attendance and poor grades.

-Students who are absent in the first week of lecture without informing the instructor with a valid excuse will be dropped.

-You are responsible for information, exam announcements, date changes, etc. presented in class, whether or not you are present.

- Up to **3 absences** are allowed. After that, you will be dropped. Students are expected to attend every class meeting, to arrive on time and stay throughout the class period. **Excessive absenteeism will lower your grade, as well as walking in and out of class.**

-If you choose to drop the course, it is **your** responsibility to withdraw online or through the Admission and Records. Failure to do so will result in a failing grade.

CLASS POLICIES

Preparedness

You are expected to arrive on time. You will come to each class session prepared. You will have your books, binder, pens/pencils, any work that is due, and you will be prepared to discuss all readings or assignments.

Food and Drinks

You may eat or drink in class at any time, but neither your professor nor WLAC is responsible for your health or life for ingesting toxic or lethal chemicals into your body.

Cell Phones, iPods, etc.

Turn them off or at least put your cell phones into the silent mode and put them away when class begins! Although it may not seem possible, you can survive without talking and texting on your cell phone, or listening to your iPod, for a little over an hour. Talking and texting on cell phones not only distract you, but they are a distraction for me and your peers. Distractions interrupt/disrupt the class and I will not tolerate interruptions. **You will be asked to leave if this occurs.**

Exception: there will be times when I ask you to take out your cell phones for choosing your answer from questions posted in lectures.

"Netiquette" and "Civilogue"

This semester, we will use Canvas for communication. The term "netiquette" is a combination of the words internet and etiquette. The term "civilogue" is a combination of the words civil and

dialogue. Both terms, as well as the words used to create them, are essential to the class. You may not agree with the views and opinions expressed by your peers, but you do not have the right to be disrespectful. Personal attacks, profanity, vulgarity, and comments that are not productive additions to the conversation will be deleted and you will not receive credit for the assignment.

Contacting me

Canvas Private Message is the best and quickest way to contact me because I have a Canvas app installed on my cell phone. I will also reply to your emails, but the response will be slower. Therefore, excuses such as, "I tried to contact you but (fill in your blank)" will not work. **If you have a problem, do not let it snowball. Contact me immediately. Students are expected to ask for help from me.**

Recording Devices

State law in California prohibits the use of any electronic listening or recording device in a classroom without prior consent of the instructor and college administration. Any student who needs to use electronic aids must secure the consent of the instructor. If the instructor agrees to the request, a notice of consent must be forwarded to the Vice President of Academic Affairs for approval (WLAC College Catalog).

For more information refer to the attached link:

http://www.wlac.edu/academics/pdf/WLAC_Catalog_Policies.pdf

ACCOMMODATIONS

West Los Angeles College recognizes and welcomes its responsibility to provide an equal educational opportunity to all individuals with special needs. The Office of Disabled Students Programs and Services (DSPS) has been established to provide support services for all verified disabled students pursuing a college education. If you are a student with a disability requiring classroom accommodations and have not contacted DSPS, please do so in a timely manner. DSPS is located in the Student Service Building, 3rd Floor (**SSB 320**), or call DSPS at (310) 287-4450, or email DSPS at dsps@wlac.edu to meet with a DSPS counselor. If DSPS has already sent a memo to the instructor confirming accommodations required by the student for this class, please meet with me to discuss arrangements.

http://www.wlac.edu/dsps/index.aspx All accommodations required that you provide the appropriate written documentation issued by DSPS **at the earliest possible time**.

RELIGIOUS OBSERVANCES

Please notify the instructor in advance of religious observances that interfere with the class attendance, exams, and quizzes. All religious observances in the semester require that you notify the instructor **at the earliest possible time**.

CHEATING/ACADEMIC DISHONESTY

In accordance with code 9803.28, academic dishonesty is prohibited and will not be tolerated in this class. Violations of academic integrity include, but are not limited to, the following actions: cheating on an exam, plagiarism, working together on an assignment, paper or project when the instructor has specifically stated students should not do so, submitting the same term paper to more than one instructor, or allowing another individual to assume one's identity for enhancing one's grade. Academic dishonesty of any type, such as cheating or knowingly furnishing false information, by a student provides grounds for disciplinary action by the instructor or college. In written work, no material may be copied from another without proper quotation marks, footnotes, or appropriate documentation.

Plagiarism will result in a zero for the assignment, possible dismissal from the class and disciplinary action from the college. You will not receive credit for any essay missing previous drafts, citations and a Works Cited page.

Students caught cheating or acting suspiciously will get zero point for the lecture exam and will be reported to the Division Chair and Dean of Students Services. No opportunities will be given for cheating.

According to code 9803.15, disruption of classes or college activities is prohibited and will not be tolerated. Refer to the catalog and the Standards of Student Conduct in the Schedule of Classes for more information.

During any exams, here is a list of some actions that are considered cheating:

-OPEN A SECOND TAB WITH ANY WEB BROWSER

-OPEN AND HIDE ANY PROGRAM IN THE BACKGROUND

-COPYING STUDY GUIDES OR ACTUAL EXAMS FROM OTHER STUDENTS

-TALK TO OTHER STUDENTS.

-STARE INTO ANOTHER STUDENT'S DIRECTION.

-USE NOTES OF ANY KIND (ON CARDS, STRIPS OF PAPER, DESKTOP, ETC.)

-USE CELL PHONES, SMART WATCH, OR OTHER ELECTRONIC DEVICES. (Cell phones, smart watch, or other electronic devices should be stored in your backpack zipped tight.)

-Show a fellow student your exam or scantron, or pass information in any way.

-Use translation dictionaries.

-Change the answers on a returned exam or quiz & claim to have been scored wrongly.

All of these demonstrate a lack of honesty & integrity which is essential in all jobs, relationships, and areas of life. If you have a question, quietly walk up to the instructor and whisper your question.

RECOMMENDATIONS FOR SUCCEEDING IN CLASS:

1. Expect to Work. This is not supposed to be easy.
2. Get to class on time, every time, and stay the whole time.

- Never miss class, & take good notes.

3. Find someone in the class to contact if you miss a meeting. DO NOT GIVE OUT YOUR PHONE NUMBER! Communicate through Etudes or school email.
4. Be organized! Use a daily calendar to set times for regular studying for each of your classes.
5. Study & Review each night the class is given.

- Learning is easier if you schedule time daily to read, to think & review.
- Every time you study. spend at least 10 minutes reviewing previous (These "refresher shots" are the secret for long-term memory.)
- Focus your studying on the class Lecture Notes.
- Read the relevant chapters in your textbook; hi-lite pertinent lines, & add these notes to your class notes (never read without writing)
- Use the CD-ROM & Web-Sites.
- Use associations to help you remember things.
- Prepare note cards and carry them with you to review.

6. Begin preparing for your exams at least one week in advance.

7. **ALWAYS** write your name (**LAST NAME, FIRST NAME**) in **all caps** on EVERYTHING you turn in. Anything you turn in (exams, scantrons, and written assignments) without your name will have **one point deducted**.
8. **COME TO MY OFFICE HOURS TO ASK ME LECTURE AND LAB QUESTIONS. LET ME HELP YOU.** If my office hours do not fit your schedule, please make an appointment to see me. If our schedules do not fit each other, please take advantage of available tutoring services (on campus, e.g. Heldman Learning Resources Center (HLRC) | (310) 287-4486

COURSE OBJECTIVES

- Describe the mode of inquiry used by biologists.

- Define the terms hypothesis, variable, experimental control.

- Define the sub-atomic particles

- Describe the forces that attract atoms

- Explain the difference between an organic molecule and an inorganic molecule.

- Name the elements found in biological molecules.

- Describe the chemical organization of a protein.

- Describe the chemical organization of a lipid.

- Describe the chemical organization of a carbohydrate.

- Describe the chemical organization of DNA & RNA.

- List the structures common to all cells.

- Describe the properties & function of membrane.

- Compare a plant cell to an animal cell.

- Explain the cellular functions of proteins, lipids, and nucleic acids.

- Differentiate prokaryotic & eukaryotic cell structure.

- Describe how molecules and ions move across membranes.

- Differentiate diffusion, osmosis, exocytosis, and endocytosis.

- Compare and contrast passive transport and active transport.

- Describe the functions of the nucleus, endoplasmic reticulum, ribosomes, Golgi complex, lysosomes, vacuoles, mitochondria, chloroplasts, and peroxisomes.

- Define catalyst, enzyme, active site.

- Define energy and list some of its forms.

- Explain the importance of cellular ATP.

- Name the phases of cellular respiration.

- Describe the location of the electron transport chain in eukaryotic cells.

- Explain the role of O2 in aerobic respiration.

- Differentiate respiration, fermentation, and photosynthesis.

- Name the electron donor in cellular respiration, in photosynthesis, and in fermentation.

- Describe the cell cycle.

- Describe the process of DNA replication.

- Describe how a nucleus divides.

- Compare & contrast mitosis and meiosis.

- Identify the animal cell types that exhibit mitosis.

- Identify the plant cell types that exhibit mitosis.

- Identify the animal cells that exhibit meiosis.

- Identify the plant cells that exhibit meiosis.

- Describe the cellular events that are distinctive of sexual reproduction.

- Describe the life cycle of a generalized animal.

- Describe the life cycle of a generalized plant.

- List examples of organisms that primarily use asexual reproduction to produce offspring.

- Define genome, chromosome, allele, homologous chromosomes, crossing over, recessive, dominant, autosome, and mutation.

- Recognize the contributions of Gregor Mendel.

- Differentiate genotype and phenotype.

- Describe an example of polygenic inheritance.

- Differentiate heterozyote and homozygote.

- Compare complete dominance and incomplete dominance.

- Describe an example of sex-linked inheritance.

- Define nucleotide, polymerization, complementary nitrogenous bases, template, triplet code, codon, anticodon, mutation, RNA polymerase.

- Name the functions of RNA molecules.

- List the cellular structures that are involved in protein synthesis.

- Describe the process of transcription.

- Describe the process of translation.

- Describe how mutations are repaired.

- Define nucleosome, histone, promoter, operon.

- Briefly explain a eukaryotic cell controls gene expression.

- Recognize the definition of these terms: population, species, gene pool, allele frequency, genetic drift, natural selection, gene flow.

- Describe Charles Darwin’s contribution to explaining evolution.

- Name the processes that occur in organisms that make variation of phenotypes possible.

- List the conditions that can cause evolutionary change in a population.

- Explain the roles of beneficial mutation and neutral mutation in evolution.

- Describe how gene flow can be interrupted by a geographic barrier.

- List the mechanisms of reproductive isolation.

- Recognize the definition of these terms: community, ecosystem, habitat, niche, consumer, producer, decomposer, pioneer, carrying capacity

- Name the ultimate source of energy for most life on Earth.

- Describe the flow of energy through a community.

- Describe nutrient cycling

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TENTATIVE SCHEDULE OF CLASSES (SUBJECT TO CHANGE)

Week	Date	Location	Quiz/ Discussion	Chapter (15th ed)	Lecture
1	W, 2/6	MSA 111		1	Introduction and Scientific Method
	F, 2/8	Online	Quiz 1	2	Basic Chemistry
2	W, 2/13	MSA 111		2	Basic Chemistry-Organic Molecules
	F, 2/15	Online	Quiz 2	3	Cell Structures and Functions
3	W, 2/20	MSA 111		2	Organic Molecules
	F, 2/22	Online	D1	4	Membrane Structures and Functions
4	W, 2/27	MSA 111			**EXAM 1**
	F, 3/1	Online	D2	6	Metabolism: Energy and Enzymes
5	W, 3/6	MSA 111		7	Cellular Respiration
	F, 3/8	Online	D3	8	Photosynthesis
6	W, 3/13	MSA 111		23	Genetics and inheritance
	F, 3/15	Online	Quiz 3	5	Cell Division
7	W, 3/20	MSA 111		23	Genetics and inheritance
	F, 3/22	Online	D4	24	Chromosomal Basis of Inheritance

8	W, 3/27	MSA 111			**EXAM 2**
	F, 3/29	Online	D5	25	DNA Structure and Gene Expression
9	W, 4/10	MSA 111		26	Biotechnology
	F, 4/12	Online	D6	27.3 & 27.4	Molecular Basis of Evolution
10	W, 4/17	MSA 111		27	Evolution of Life
	F, 4/19	Online	Quiz 4	27	Evolution of Life
11	W, 4/24	MSA 111		34	Population and Community Ecology
	F, 4/26	Online	D7	35	Nature of Ecosystems
12	W, 5/1	MSA 111			**EXAM 3**
	F, 5/3	Online	D8	11	Human Organization
13	W, 5/8	MSA 111		14	Digestive System and Nutrition
	F, 5/10	Online	D9	16	Urinary System and Excretion
14	W, 5/15	MSA 111		17	Nervous System
	F, 5/17	Online	Quiz 5	13	Lymphatic and Immune Systems
15	W, 5/22	MSA 111		21	Reproductive System
	F, 5/24	Online	D10	20	Endocrine
16	W, 5/29	MSA 111			**FINAL EXAM**

Important Dates

Drop a class with a refund/no fee owed	**Feb 18, 2018**
Drop a class without a "W"	**Feb 18, 2018**
Last day to add	**Feb 18, 2018**
Drop a class with a "W"	**May 5, 2018**

CAMPUS CLOSED

Presidents' Day: Feb 15 - Feb 18

Non-Instruction Days (no classes but campus open): Mar 28

Cesar Chavez Day: Apr 1

Spring Break: Mar 29 - Apr 5

Memorial Day: May 27

Mission Statement: West Los Angeles College provides a transformative educational experience. West fosters a diverse learning community dedicated to student success. Through quality instruction and supportive services, the College develops leaders who encourage excellence in others. A West education enriches students with the knowledge and skills needed to earn certificates and undergraduate degrees, to transfer, to build careers, and to pursue life-long learning. See more at: http://www.wlac.edu/About/Mission-Values.aspx