**California State University, Los Angeles**

**Department of Biological Sciences**

**Biology of Human Aging, BIOL 3084-01**

**Fall Semester, 2019**

Instructor/Professor: Dr. Baroon

12:00- 2:45 email: [mbaroon@calstatela.edu](mailto:mbaroon@calstatela.edu)

**Office Hours: Friday 11:00-11:45 a.m. BIOS 262**

**Course Description:**

This course provides the student with an overview of the changes that occur in the human body as a function of age. All of the major systems within the human body will be discussed ranging from the cardiovascular system to the central nervous system. This course focuses on the normal age-related physiological changes; however, age-related dysfunctional changes are discussed. Additional emphasis is placed upon the implications of physiological change on psychological functioning of the aging individual.

**Course Objectives:**

1. To develop a basic understanding of the functioning of the major systems within the human body: cardiovascular, respiratory, digestive, endocrine, autonomic nervous, reproductive, central nervous, etc.

2. To develop a basic understanding of the functioning of the major sensory systems within the human body: visual, auditory, vestibular, gustatory, and olfactory.

3. To become familiar with the changes in the above systems with normal aging.

4. To become familiar with the changes in the above systems with non-normal aging.

5. To develop an understanding of the effect of these changes on the psychological functioning of the individual.

**Student learning outcomes (SLO)**

Students will explain and describe fundamental homeostatic processes of the human body and how they are controlled by the endocrine and nervous systems. Furthermore, students will demonstrate an understanding of age related changes and age related dysfunctions of major organ system of the body.

Specifically:

1) The student will demonstrate an understanding of and be able to apply the steps in the scientific method while learning about other related aging studying methods. (Lec. #1)

2) The student will demonstrate an understanding of the differences between physiological and chronological aging and will be able to give a definition of an aging related terminology. (Lec. #1)

3) The student will demonstrate an understanding of the aging process and will be able to relate and:

a) Define, identify and give functions for the major cellular organelles. (Lec. #3)

b) Give a definition of a cell. (Lec #3)

c) Define, identify and give functions for the major human tissues. (Lec. #4)

d) Identify the tissues found in major organs. (Lec #5)

e) Define, identify and give functions for the major organ systems found in human (Lec. #4-10) and age related changes of those organ system.

4) The student will be able to define homeostasis and give examples of negative feedback loops operative in human and age related changes of many of the organ system being affected with aging. (Lec. #4-7)

5) The student will demonstrate an understanding of the basic structure and function of representative organ systems found in animals. (Lec. #4-10)

6) The student will demonstrate an understanding of the basic steps in cell division and development, including gamete formation using meiosis and process of mitosis. (lec. 2-4)

7) The student will demonstrate an understanding of the basic concepts of various theory of aging and give example of variety of different experiments that validate those theories. (Lec. #2)

8) The student will demonstrate an understanding of the genetic and environmental basis of human aging process (Lec. #3-10)

9) The student will demonstrate knowledge of the organ system and age related disease by preparing a report using scientific writing and scientific journals.

**Teaching Methods**: I will lecture most of the time. I am open to questions during lectures. There will be occasional group discussion and study sessions for problem solving and critical thinking. My goal is to insure instruction that provides systematic development of your academic skills to meet high academic standards. Comprehensive instructional design to accommodate the different needs will be used, including a variety of teaching techniques, strategies and learning methods.

**Evaluation Methods:** I assume that you want to do well on exams and you want to understand and enjoy this course. In order to get the most out of it, please plan to spend enough time studying. You are expected to read assigned material in advance of the lecture in which the material will be discussed. Evaluation methods may include standardized tests, short essay tests, fill in the blanks, quizzes, and a final examination. Multiple Choice, True-False, essay and Matching questions will be used for midterm and final exams. A schedule of lectures and exams is attached. I encourage taking notes during my lectures and use the power point lecture by visiting the web site. If you miss a class, you are responsible of obtaining lecture notes and assignments from another student in the class.

NO MAKE-UP for quizzes, midterm exams, final exam, or assignments!!! The date and content of the quizzes, if any, will be discussed and announced in class. There will be few random in class assignments. It is your responsibility to get all the information needed from other students in case you were absent.

Three examinations, a paper, class presentation, six quizzes, and class participation/discussion of assigned readings.

**Exams:** 3 exams will be given each counting for 100 points. All exams will be in-class. Lecture exams will be multiple choice and short essays. You are required to bring in scantron form (#882-E). THERE WILL BE NO MAKE-UP EXAMS DURING THE REGULAR QUARTER. However, if exam #1, or 2 is missed with a valid (for example, illness) and verifiable (for example, a signed note from a physician) excuse, you can make-up the missed exam with a cumulative final exam given during the second half of the regularly scheduled final exam session. This cumulative final exam will be taken only by students who have missed exams #1, or 2 with a verified excuse. YOU MUST TAKE EITHER EXAMS #1-3 OR TWO EXAMS AND THE CUMULATIVE FINAL EXAM IN ORDER TO RECEIVE A GRADE IN THE COURSE.

If you are late on the day of the exam, you will not be allowed to take the test if one person already turned in their exam.

All personal items such as book bags, backpacks, briefcases and purses brought to exams must fit completely under your seats.

**Lecture Grades:**

Midterm and final (3X100) 300 points

Each midterm exam will cover one part the course as discussed in the class and the textbook.

The final examination will not be Comprehensive unless you missed one of the exams!

**SLO Paper**: 50 points

Students are required to write a term paper (worth 40 Points). The purpose of the term paper is to provide you with the opportunity to explore some area of human biology of aging, in depth. The subject of this paper is to deal with a disease commonly attributed to aging. The maximum length of this paper will be 5-7 pages typed.

The rough draft (10 points) will be due on the date in schedule. The final paper is due on last week of the course (40 Points). A late paper will lose 10 points for each day being late.

Plagiarism (attempting to pass off the work of another as one's own) is NOT acceptable and will result in a grade of 0 for that assignment and will be turned over to the appropriate university source for disciplinary action. Plagiarism includes taking a sentence or sentences from another's work (this includes your textbook) for either a paper or an exam. In addition, cheating on exams will result in the same fate

**Quiz**: There will be total of 6 quizzes (10 Points each) and the lowest one will be dropped. The quiz questions may be fill in the blanks, multiple choice, True and false, or short essays.

**Poster Presentation Project: 50 points**

There will be a group poster presentation project (50 Points) due week 10.

A brief presentation of recent topic related to human Biology of Aging will be expected by end of the course (50 pts). The details of this activity will be discussed during the lecture.

**Class Meetings:**

Attendance is strongly recommended and required as material will be presented that is not in the book and class participation will constitute a percentage of the final grade. There will be some in-class assignments/quizzes and there is no make-up for the class assignments/quizzes. Please make note of the attached attendance policy.

Three examinations, a paper, class presentation, six quizzes, and class participation/discussion of assigned readings.

**Policy Regarding Correction of Errors in the Grading of Exams:** You have one week from the time that the lecture exams are returned to report errors in the grading of the scantron forms or discuss appropriateness of alternative answers.

**Required Textbook**: Spence, A.P. (1995) Biology of Human Aging: Prentice Hall

**Drop Policy**: Please see the schedule of classes for information. No exceptions will be made to the established University deadlines and policies.

**ADA Statement:** "Reasonable accommodation will be provided to any student who is registered with the Office of Students with Disabilities and requests needed accommodation."

**Academic Honesty Policy**: Students are expected to read and abide by the University's Academic Honesty Policy, which can be found at http://www.calstatela.edu/academic/senate/handbook/ch5a.htm.  Students who violate this policy will be subject to disciplinary action, and may receive a failing grade in the course for a single violation

**Policy Regarding Correction of Errors in the Grading of Exams:** You have one week from the time that the lecture exams are returned to report errors in the grading of the scantron forms or discuss appropriateness of alternative answers.

**Grading:**

The final grade is based on the percentage of the total number of points earned in the course (650 points). Final grades will be based on the following scale

A = 91-100% (592-650)

A- = 90-90.9% (585-591.99)

B+ = 89-89.9% (579-584.99)

B = 81-88% (527-578.99)

B- = 80-80.9% (520-526.99)

C+ = 76-79% (494-519.99)

1. = 60-75% (390-493.99)

D+ = 59-59.9% (384-389.99)

1. = 50-58% (325-383.99)

F = below 50 % (325)

300 pts. 3 X 100 pts lecture exams

200 pts 5 X 40 Points (total of 6 quizzes and the lowest one will be dropped)

40 pts In-Class Assignments

50 pts Group poster presentation

50 pts Final Paper

10 pts Extra Credit

**650 pts. Total**

**COURSE OUTLINE**

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| **Class Meeting** | **Topic** | **Reading** |
| Week 1 | Introduction to class/Syllabus Introduction To Human Aging | Chapter 1 |
| Week 2 | Theories of Aging | Chapter 2 |
| Week 3 | Cellular Aging | **Quiz#1 on chapter 1 and 2**  Chapter 3 |
| Week 4 | Integumentary System | Chapter 4 |
| Week 5 | **Exam 1( Chapters 1,2,3, & 4)**  Skeletal system | **100 pts**  **Quiz #2 on chapter 3 and 4**  Chapter 5 |
| Week 6 | Muscular System  ***Introduction to Rough draft******(10 pts)*** | Chapter 6 |
| Week 7 | Nervous System | **Quiz#3** **on chapter 5 and 6**  Chapter 7 |
| Week 8 | Special Senses | Chapter 8 |
| Week 9 | **Exam II (Chapters 5,6,7,8)**  Circulatory system | **100 pts**  **Quiz #4 on chapter 7 and 8**  Chapter 9 |
| Week 10 | Immune System | Chapter 10 |
| Week 11 | Respiratory System | Chapter 11 |
| Week 12 | Digestive System | **Quiz#5 on chapter9 and 10**  Chapter 12 |
| Week 13 | Urinary System | Chapter 13 |
| Week 14 | **THANKSGIVING HOLIDAY** |  |
| Week 15 | **Group Poster presentation Project** (50 pts)  ***Final paper Due Include Rough draft*** | **Quiz#6 chapter 11, 12 and 13** |
| Week 16 | **Final exam (Chapters 9,10,11,12,13,14,15)** |  |