Dept. of Biological Sciences, California State University, Los Angeles

BIOL 3084: Biology of Human Aging (93854)
Fall 2018
M/W/F 8:00am 8:50am – Location: SH 246
Instructor: Gloria Preza, Ph.D.
Office Hours: M/W, 9:30 – 10:30 am or by appointment.  ASCL 227
e-mail: gpreza@calstatela.edu

Course Description: This course centers around the major physiological and anatomical changes that occur during aging (~ > 65 years of age) at all levels of biological organization: biochemical, organelle, cellular, tissue, organ, organ system, and organism. Changes during healthy aging will be distinguished from those due to common late-onset diseases. This course is an upper-division science course for General Education Theme F. Human Maturity and Aging Processes and Problems.

Prerequisite: BIOL 1010 – Natural History of Animals (or the equivalent).

Class Notes: I will post lecture notes on each topic on the course’s Canvas page.
Although I will try to adhere to the schedule as much as possible, as Instructor, I reserve the right to slightly alter the schedule as necessary.

Course Requirements

SCHEDULE
Week Date Topic Reading Assignment

Wk 1: 8/20 Attendance, Course expectations, Ice breaker
8/22 Introduction, Body Organization Ch. 1
8/24 General Principles of Anatomy and Physiology Ch. 1
Demographics, Life Expectancy and Research Methods

Wk 2: 8/27 Molecular and Cellular Theories of Aging Ch. 2
8/29 Integumentary System Ch. 3
8/31 (Cont’d) Quiz 1 Ch. 3

Wk 3: 9/3 Labor Day – Holiday, Campus Closed
9/5 Circulatory System Ch. 4
9/7 (Cont’d) Quiz 2

Wk 4: 9/10 Respiratory System Ch. 5
9/12 Respiratory System (Cont’d)
9/14 MIDTERM EXAM 1

Wk 5: 9/17 Nervous System Ch. 6
9/19 “
9/21 “
REFERENCE LIST FOR TERM PAPER DUE on 9/21
FIRST ARTICLE SUMMARY DUE on 9/21

Wk 6: 9/24 Sense Organs – Sight Ch. 7
9/26 Sense Organs – Hearing
9/28 (Cont’d) Quiz 3

Wk 7  10/1 Muscle System Ch. 8
10/3
10/5

Wk 8: 10/8 Skeletal System Ch. 9
10/10
10/12 Cont’d Quiz 4

Wk 9: 10/15 Review for MIDERM EXAM 2 Ch. 10
10/17 MIDTERM EXAM 2 (material since Midterm 1)
10/19 SECOND ARTICLE SUMMARY DUE
Digestive System

Wk 10: 10/22 Digestive System Ch. 10
10/24 Diet and Nutrition Ch. 11
10/26 Cont’d

Wk 11: 10/29 Urinary System Ch. 12
10/31
11/2 Cont’d Quiz 5

Wk 12: 11/5 Male Reproductive System Ch. 13
11/7 Cont’d
11/9 Female Reproductive System Ch. 13

Wk 13: 11/12 Veterans Day – Holiday Campus Closed Ch. 13
11/14 Female Reproductive System Cont’d
11/16 Endocrine System Quiz 6 Ch. 14

Wk 14: 11/19 Endocrine System Ch. 14

TERM PAPERS DUE ON 11/19 FOR 20 EXTRA CREDIT POINTS

11/21 Finals Study Day – No Classes Held.
11/23 Thanksgiving – Holiday Campus Closed

Wk 15: 11/26 Immune System Ch. 15
11/28 Immune System Cont’d
11/30 TERM PAPERS DUE on 11/30

Wk 16: 12/3 Caregiving for the Elderly
12/5 Catch up if I’m behind / Review for Final
12/7 Finals Studies

Finals Week 12/10 FINAL EXAM (material since Midterm 2) 7:00 – 9:00 am
Final Course Grades
Final grades will be on a percentage or on a curve, depending on the general overall performance of the class. However, this does not apply to scores hovering at about 200 points or lower. All scores near or lower than 200 points will be considered failing. As the instructor, I reserve the right to assign “+” and “-” grades.

Exams
The midterm exams and final exam will include multiple-choice questions, and several written answer questions. Students are expected to read notes and attend the lectures.

Article Summaries
Each student must write a 2-3 page typewritten summary of 2 of the articles (s)he will use in her/his term paper. The idea behind this assignment is to get you to start thinking about your term paper and gather and read material early so that you are not just getting started to think and work on your term paper as the end of the quarter draws nearer. In addition to the science that is discussed in each article, you should pay attention to how scientific papers are written and organized. To this end, late summaries will be penalized 1 point for every day they are late. The first summary is due on June 27 and the second summary is due July 9.

Term Paper:
Topics: Alzheimer’s Disease, Diabetes Mellitus, Stroke, Osteoporosis, Hormone Replacement Therapy, or Centenarians
Write a 10-page, double-spaced, scientific review paper of the topic based on a search of the biological and medical literature. Use MEDLINE (PubMed) to do your search; the references listed in this database are all biological or medical. Do not use popular and unreviewed sources, such as Time, Newsweek, or Prevention magazines or newspapers, or potentially any other periodical that can be found on bookstore newsstands. Neither should you use Wikipedia. These are unacceptable! You may use the internet, but the literature sources must be from professional, peer-reviewed journals (the journal, The Neurobiology of Aging is probably one of the premier journals in the field of the biological aspects of aging, but other journals that focus on non-neurally related fields are just as good). If you have not done this kind of search before, ask the librarians to show you how or ask me. The paper must be typed and double-spaced. Use a word-processor because you will be handing in the paper for review and you are expected to revise the paper before handing in the final version.
Reference Format: A list of the sources you cite in your paper, in alphabetical order by author surname, should appear at the end of your text. Use the format adopted by the Council of Biological Editors as indicated in the following examples. Russo/syllabus/Biol. 384N 4

ARTICLE IN A JOURNAL:
All Authors (surname first followed by initials). 2000. Title of the article in full. Journal Name volume # :staring page-ending page.
For example:


BOOK:

Jones JJ. 2001. Book Title volume (if any). City of publication: Publisher

CHAPTER IN A BOOK:


SOURCE ON THE INTERNET:

Pritzker, TJ (No date). Title of internet text [Online]. Available: http://www.list complete internet address [date you accessed the site]. Please note: not all internet sites are acceptable sources; some are popular, not scientific sites. Before using an internet site as a source, show it to me for approval. All references should be cited in the appropriate section of the text by author surname and year of publication, as in the following examples: “Doe and Smith (1992) found that…” (Your reference list should include an entry for Doe and Smith using the appropriate format above)

OR

“One study on changes in the immune system (Doe and Smith, 1992)…”

If the reference has one or two authors, use the one or both names followed by the year for citations in the text, such as:

“Garcia (2003) found that…”

OR “Garcia and Popoli (2001) found that…”

Similarly, “…blah, blah, blah (Garcia, 2003)”

OR “… blah, blah, blah (Garcia and Popoli, 2001).”

If the reference has more than two authors, use the first author only, followed by et al., such as:

“…blah, blah, blah (Klau et al., 2001).” Russo/syllabus/Biol. 384N 5

If you use an author’s surname in the text, you must have a reference by that person in the reference list or else points will be deducted from your score. In other words, make sure that every citation in the text of the paper appears in the bibliography at the end of the paper and vice versa.

Do not use footnotes in the text! And do not cite references by using numbers in the text!

If you want to quote a person verbatim, indent and single-space the quoted material and list the author(s), name(s) and the year at the end of the quote. It is better not to quote, but to summarize in your own words. Do not fall into the trap of making your paper simply a series of quotations!
You must have at least 10 references from biological and medical journals. Bring a preliminary list of references to class for my approval date to be announced. This list does not need to be the final list you are using for your term paper, which is a work-in-progress. As such, the list must be turned in on time and not later, as this would defeat the purpose of this assignment - I just want to see that you are actively researching your topic. The references should be to articles published within the past 10 years. Do not base your term paper on only books. And, as I indicated above, do not use the popular press.

Content:
If you are writing your term paper on Alzheimer’s Disease, Diabetes Mellitus, Stroke, or Osteoporosis, make sure your paper covers the following topics:

What percent of people in each age group are estimated to develop the disease? What criteria are used to diagnose the condition? Is the disease progressive with age and how fast do the changes occur? What are the biological changes that cause the symptoms? Which molecules, organelles, cells, or tissues are changing? What are the risk factors for the disease? What are the treatments and how effective are they? If you are writing your paper on Hormone Replacement Therapy (HRT), make sure your paper covers the following topics:

What criteria are used to determine if HRT is appropriate for that person? What are the risk factors for using HRT? What are the biological changes that cause the need for HRT? What does HRT do to the body besides just replacing the hormone? - That is, what are the biological changes that occur upon HRT? Which molecules, organelles, cells, or tissues are changing? How effective is HRT?

Each of these topics should serve as a heading in the body of the paper.

Write the paper in a scientific style. Each paragraph should have a topic sentence and all paragraphs should have more than one sentence. Use the articles you are reading for your article summaries as models. Be concise. Do not use personal experiences or life histories and accounts in this paper. And do not write in the first person. Grammar, spelling, typing, and use of the correct format will be considered in assigning points. If you are not clear about the format or whether an article is acceptable, ask me before turning in the paper. Russo/syllabus/Biol. 384N 6

Draft of term paper (hard copy) is due TBA – if you wish. That is, if you would like me to evaluate your term paper, critique it, and provide suggestions for improvement before turning it in for a final grade, you may hand in a draft of it I will announce date. If you don’t feel it necessary, or for some reason, cannot, you may opt not to as well. It’s up to you. This draft will not be graded. But, it might be a good idea to take advantage of this opportunity of potentially improving your chances of getting a better grade on the term paper, and therefore, in the course.

Revised papers should be turned in on TurnitIn (instructions to follow). They must be accompanied by the first version of the paper (if you opted for me to critique it) with the suggested revisions on it. All the material will be returned to you after it has been graded. Please turn in your papers directly to me in class. Do not leave them in the departmental office or in envelopes under doors. If your paper is lost because you gave it to someone other than myself, you will get zero credit for the assignment.

Attitude:
Your class attendance is very important. It is well known that there is a good relationship between good attendance and the final grade. Occasionally, there are times when you might be forced to miss a class. If this is the case, it is your responsibility to get from a classmate all the information you missed. I strongly urge you to make some friends in the class and obtain from them any class material you might have been forced to miss. Your responsibility is to the lectures. Please ensure that if you have with you a cellular phone, smart phone, or some other fancy electronic communication devise, that it does not sound off. I find it very disruptive to the class and to me. I like to start on time and I find it distracting and disruptive for people to arrive late and just as annoying for people to wander in and out of class at any time. It is unfair and distracting to the other students in the class and to everyone’s train of thought. Students are asked to refrain from making inappropriate or offensive comments, sleeping, talking/whispering/giggling with peers, or passing notes. You are all adults and are no longer in high school. A mature attitude is, therefore, expected of you.

Academic Honesty

The CSU does not look favorably upon breaches of academic honesty, including, but not limited to, plagiarism (stealing work not your own from someone else), copying each others’ assignments, cheating on exams, etc. Penalties will be dealt with by the University Provost and you will receive a failing grade for that particular assignment/exam, and possibly the course. Students are expected to read and abide by the University’s Academic Honesty Policy, which can be found at 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.