January Session 2015

Course:  Biomedical Sciences 4330, Biological Basis of Aging
January 5-16
MTWR 12:00 - 3:45 pm
EN 108

Faculty:  Suzzette F. Chopin, Ph.D.
EN 319; 825-6022
Office Hours: Tuesdays & Thursdays 3:45 – 4:30
suzzette.chopin@.tamucc.edu

Course Description:
This course is an examination of human aging, one phase of normal development. Topics included are: definitions of aging; demographics of human aging; life span and life expectancy; research methodologies and measurements; anatomical and physiological changes associated with aging; age-related diseases; theories of aging; elder abuse; psychological and sociological aspects of aging; and healthy aging.

Catalogue Course Description: Molecular aspects of aging and disease, including biological mechanisms and theories involving cells, tissues and organ systems. Pre-requisites: Biology 1407 and Chemistry 3411.

Supplies:
- PowerPoint slides printed from Blackboard
- Journal articles: printed from Blackboard
- Binder for notes, handouts, articles, etc.; bring your binder to class every day

Student Learning Outcomes And Assessment:
Assessment is a process used by instructors to improve learning. The process begins by describing student-learning outcomes (they focus on what you are expected to learn) like the ones described below for this course. By measuring how well you are accomplishing these student-learning outcomes, the instruction can take appropriate actions to enhance your learning.

At the conclusion of the course, the student will be able to:
1. Define aging;
2. Distinguish between life expectancy and life span;
3. Discuss the factors that have contributed to increased life expectancy;
4. Identify methods used to study aging;
5. Explain the physiological effects of aging in humans;
6. Describe the relationship between aging and disease;
7. Distinguish among, evaluate and synthesize theories of aging;
8. Relate sociological and psychological factors to aging;
9. Identify the signs, symptoms and causes of elder abuse;
10. Describe the perceptions and experiences of older people; and
11. Evaluate current interventions to promote healthy aging.

Course Requirements And Grading Points:
We have only eight days of instruction; our last meeting on Friday, January 16 is the final exam day. We will cover in these eight days what I would normally cover in 16 weeks. I do not leave anything out because it is only eight days of instruction.
You must be committed to doing a semester’s worth of work in eight days. There is no opportunity to make up tests or class work if you are absent. If you know you will be absent for a class (wedding, vacation, etc.), you should drop the course before classes begin. Biological Basis of Aging is one of many upper level biology/biomedical sciences electives, so you do not have to take this course.

YOU CANNOT AFFORD TO BE ABSENT FOR A CLASS. ONE AFTERNOON OF CLASS IS EQUIVALENT TO MORE THAN ONE WEEK IN THE FALL OR SPRING SEMESTER. THERE IS NO MECHANISM FOR MAKING UP MISSED ASSIGNMENTS OR TURNING IN WORK THAT IS LATE. IF YOU CANNOT AGREE TO THE TIME AND EFFORT COMMITMENT REQUIRED IN THIS MINIMESTER COURSE, THEN YOU SHOULD DROP THE COURSE.

GRADED ACTIVITIES:
Work is due on the day/time indicated in the table below and in the agenda table.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Due Date</th>
<th>Points</th>
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<tr>
<td><strong>Tests</strong></td>
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<tr>
<td>Test 1</td>
<td>Thursday Jan 8</td>
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<td>Test 2</td>
<td>Tuesday Jan 13</td>
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<td>Test 3</td>
<td>Friday Jan 16</td>
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<td><strong>Papers</strong></td>
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<tr>
<td>Living to 100</td>
<td>*Tuesday Jan 6</td>
<td>25</td>
<td>120</td>
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<tr>
<td>Oral History Project</td>
<td>*Wednesday Jan 7</td>
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<td>Oral History Conclusions</td>
<td>Thursday Jan 15</td>
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<td><strong>Exercises</strong></td>
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<td>Exercise 1: Anti-Aging Medicines?</td>
<td>Tuesday Jan 6</td>
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<td>Exercise 2: Apolipoprotein E and Familial Longevity</td>
<td>Wednesday Jan 7</td>
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<td>Exercise 3: Aging is Not A Disease: Implications for Intervention</td>
<td>Thursday Jan 8</td>
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<td>Exercise 4: Some Animals Age, Some Do Not</td>
<td>Monday Jan 12</td>
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<td>Exercise 5: Mediterranean Diet, Healthy Eating Index-2005, and Cognitive Function in Middle-Aged and Older Puerto Rican Adults</td>
<td>Wednesday Jan 14</td>
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<td><strong>Total</strong></td>
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*Due at noon; papers submitted after noon lose 5 points/hr of lateness

The Points Required for Each Letter Grade Are:

- 500 - 450 = A
- 449 - 400 = B
- 399 - 350 = C
- 349 - 300 = D
- 299 and below = F

TESTS:
Each exam may contain questions in the following formats: multiple choice; true/false; matching; fill in the blank; extracting information from tables and graphs; short answer questions; and essay questions. Everything that is discussed in class may on the test. This includes information from lecture, class discussions, handouts, journal articles, presentations, exercises and videos.
**PAPERS:**

1. **Living to 100:** Go to [www.livingto100.com/](http://www.livingto100.com/), the Life Expectancy Calculator. Complete the questionnaire. When you finish, you will be asked to register your email address and create a password to access your results. I have used this site for many years and have never had a problem receiving junk email, so I consider it safe. Once you register, you will receive your life expectancy; print out this page to include with your essay. Then click on **Retrieve Feedback** to see how many years you can add to your life by changing your behaviors. Print out these one to two pages to use as a reference when doing your homework, but do not submit these pages with your homework.

Your homework is to:

   a. Determine how many more years you could add to your life expectancy by changing your behaviors (Simply add up the additional years cited on “Add Years to Your Life” page)
   b. Discuss which behaviors you are willing to change and how many more years you can add to your life expectancy by changing these behaviors.
   c. Discuss which behaviors you are not willing to change and why

**Producing your paper**

Use these subheadings in your paper:

**My Life Expectancy**

- Cite what Living to 100 estimated for your life expectancy
- Cite how many more years you could add to your life expectancy by changing all of your behaviors

**My Behavioral Modifications**

- Briefly discuss which behaviors you are willing to change and how many more years you can add to your life expectancy by changing these behaviors (b above)
- Briefly discuss which behaviors you are not willing to change and why you are not willing to modify these behaviors (c above)

Format: Computer generated; 1” margins; double spaced; ≤12 pt.; at least three full pages, plus the one-page printout from the website; stapled

2. **Oral History Project:** The purpose of this project is to give you an understanding of aging from the perspective of those who have experienced it – older people. We are interested in finding the similarities and differences among the people interviewed. You will interview two people who are at least 65 years old; the interviews are to be conducted separately, just you and the interviewee. You can interview relatives, neighbors, family friends or any combination. It will probably be more interesting for you to interview relatives.

You will ask each person the same set of questions. Depending on your interviewee’s responses, you should ask follow up questions. Interviews should be conducted in person, not via email or phone. You should interview the person privately. You will write down the person’s answers. While it is convenient to record the answers, many people are very uncomfortable being recorded, so do not record the interview.

You will ask all your questions in the first session. Be prepared that some people are a little hesitant at first, so give them time to get comfortable talking about themselves. Then, a day or two later, visit the person again to see if he/she has something else to add. Generally, after thinking about the interview, the interviewee has remembered something else to share with you.

We want to preserve anonymity, so do not give the person’s name in your paper. We do need to know sex, age, race and ethnicity.
Questions to ask each interviewee:
1. What was it like when you were 20 years old? What did you do for fun? What was happening in the world?
2. What is the biggest change you see in the world today compared to the world when you were 20 years old?
3. Looking back on your life, what is the best thing that happened to you? Why?
4. Looking back on your life, what is something you wanted to do, but did not/could not do? Why?
5. What do you think the world will be like in 20 years?

A. Producing your Oral History Paper

Your paper should be in three parts, using the headings and subheadings listed below. You should summarize your interviewee’s responses, do not include verbatim responses in your paper.

I. Interviewee 1
   - Demographic information: One sentence citing sex, age, race and ethnicity
   - Responses to questions: Write the question, then discuss the interviewee’s answer.
   - Provide your impression/evaluation of the interview

II. Interviewee 2
   - Demographic information: One sentence citing sex, age, race and ethnicity
   - Responses to questions: Write the question, then discuss the interviewee’s answer
   - Provide your impression/evaluation of the interview

III. Compare and contrast the two interviews
   - Similarities discussed
   - Differences discussed
   - Conclusion

Format: Computer generated; 1" margins; double spaced; ≤12 pt.; at least eight pages; stapled

B. Oral History Conclusions

We will have a class discussion on the results of your projects. Each person will briefly present his/her results. You are not expected to deliver a PowerPoint presentation, just tell us about your interviewees. We will discuss and compare and contrast the results of class members. At the end of our discussion, you will provide conclusions that synthesize what we learned.

EXERCISES:
You will choose a partner with whom you will do five exercises in class. The exercises will be based on journal articles, which are available on Blackboard. You must read and understand the article before coming to class. You do not have time to read the article and answer the questions in class. I suggest that you print out the article, read and highlight it, then bring it to class to help you answer the questions. You are to answer the questions in your own words – do not copy sentences verbatim from the article.

Class Standards:
The student is expected to attend each class. If absent, it is the responsibility of the student to obtain missed information from a classmate. Missed information includes not only missed lecture notes, but also any information regarding possible syllabus changes.

The student has several opportunities to demonstrate competency in the course. Assessment and computation are performed by the instructor according to objective criteria. If a student experiences difficulty in the course, the instructor is available for consultation. However, it is the
responsibility of the student to seek help, preferably when the investment made by the student can still be salvaged.

Academic integrity is expected. Cheating is not acceptable behavior and the student is not to give or receive help during testing. All students are expected to conform to University standards of ethics, academic integrity, grammar and spelling; review the 2014-2015 A&M-CC catalog for more information.

Classroom/Professional Behavior
Some general considerations include:
• Arrive on time for class;
• Allow others to speak; do not monopolize the discussion;
• Focus on the discussion; do not do other work during our meetings;
• Evaluate other points of view; and
• Respect others’ opinions.

Cell Phone/Electronic Device Usage: No cell phone conversations use during class. Internet can be used for class work only.

Academic Integrity/Plagiarism
University students are expected to conduct themselves in accordance with the highest standards of academic honesty. Academic misconduct for which a student is subject to penalty includes all forms of cheating, such as illicit possession of examinations or examination materials, falsification, forgery, complicity or plagiarism. (Plagiarism is the presentation of the work of another as one’s own work.) In this class, academic misconduct or complicity in an act of academic misconduct on an assignment or test will result in a grade of 0 for the work.

Dropping a Class
I hope that you never find it necessary to drop this or any other class. However, events can sometimes occur that make dropping a course necessary or wise. Please consult with me before you decide to drop to be sure it is the best thing to do. Should dropping the course be the best course of action, you must initiate the process to drop the course by going to the Student Services Center and filling out a course drop form. Just stopping attendance and participation WILL NOT automatically result in your being dropped from the class. August 18, 2014 is the last day to drop a class with an automatic grade of “W” this term.

Classroom/Professional Behavior
Texas A&M University-Corpus Christi, as an academic community, requires that each individual respect the needs of others to study and learn in a peaceful atmosphere. Under Article III of the Student Code of Conduct, classroom behavior that interferes with either (a) the instructor’s ability to conduct the class or (b) the ability of other students to profit from the instructional program may be considered a breach of the peace and is subject to disciplinary sanction outlined in article VII of the Student Code of Conduct. Students engaging in unacceptable behavior may be instructed to leave the classroom. This prohibition applies to all instructional forums, including classrooms, electronic classrooms, labs, discussion groups, field trips, etc.

GRADE APPEALS
As stated in University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures, a student who believes that he or she has not been held to appropriate academic standards as outlined in the class syllabus, equitable evaluation procedures, or appropriate grading, may appeal the final grade given in the course. The burden of proof is upon the student to demonstrate the appropriateness of the appeal. A student with a complaint about a grade is encouraged to first
discuss the matter with the instructor. For complete details, including the responsibilities of the parties involved in the process and the number of days allowed for completing the steps in the process, see University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures. These documents are accessible through the University Rules website at http://www.tamucc.edu/provost/university_rules/index.html, and the College of Science and Engineering Grade Appeals webpage (http://sci.tamucc.edu/students/GradeAppeal.html). For assistance and/or guidance in the grade appeal process, students may contact the chair or director of the appropriate department or school, the Office of the College of Science and Engineering Dean, or the Office of the Provost.

Disabilities Accommodations
The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please call or visit Disability Services at (361) 825-5816 in Corpus Christi Hall 116.

If you are a returning veteran and are experiencing cognitive and/or physical access issues in the classroom or on campus, please contact the Disability Services office for assistance at (361) 825-5816.

Statement of Academic Continuity
In the event of an unforeseen adverse event, such as a major hurricane and classes could not be held on the campus of Texas A&M University–Corpus Christi; this course would continue through the use of Blackboard and/or email. In addition, the syllabus and class activities may be modified to allow continuation of the course. Ideally, University facilities (i.e., emails, web sites, and Blackboard) will be operational within two days of the closing of the physical campus. However, students need to make certain that the course instructor has a primary and a secondary means of contacting each student.

References:
Austad, Steven. 1997. Why We Age. John Wiley & Sons
Hayflick, Leonard. 1996. How and Why We Age, Random House, Inc
Healthy Brain Initiative. 2007. CDC
Merck Manual of Geriatrics, 2005
Timiras, Paola. 2007. Physiological Basis of Aging and Geriatrics. Informa Health Care
www.bsl.gov
www.cdc.gov
www.caregiver.org/caregiver/jsp/publications.jsp?nodeid=345
www.livingto100.com
www.mayoclinic.com
www.nia.nih.gov
AGENDA: REFER TO THE EXPANDED, COLOR CODED AGENDA FOR MORE DETAIL

M5: Course Introduction
Definitions & Measurement
Video: Identifying Mild Cognitive Impairment

T6: Due: Living to 100 paper
Definitions & Measurement
Class Interview: Old Person
Exercise 1: Anti-Aging Medicines?

W7: Due: Oral History Paper
Human Aging
Video: How Far Have We Come in Alzheimer’s Research
Exercise 2: Apolipoprotein E and Familial Longevity

R8: Test 1: Definitions & Measurement
   • PowerPoints
   • Exercise 1
Human Aging
Video: Inflammation, Immune System and Alzheimer’s Disease
Exercise 3: Aging Is Not A Disease: Implications for Intervention

M12 Human Aging
Theories of Aging
Video: Cognitive Reserve: What the Religious Orders Study Is Revealing about Alzheimer’s
Exercise 4: Some Animals Age, Some Do Not

T13 Test 2: Human Aging
   • PowerPoints
   • All videos
   • Exercises 2 & 3
Theories of Aging
Elder Abuse

W14 Elder Abuse
Healthy Aging
Exercise 5: Mediterranean Diet, Healthy Eating Index-2005 and Cognitive Function in Middle-Aged and Older Puerto Rican Adults

R 15 Healthy Aging
Oral Histories Discussion
Oral Histories Conclusion Paper

F16 Test 3: Theories of Aging, Elder Abuse, Healthy Aging and Oral Histories
   • PowerPoints
   • Exercise 5
Scoring your papers:

I. Living to 100 (25 points total)
   • Stated life expectancy (1 point): Page printed out from website
   • Calculated life expectancy (1 point): The total number of years you add by modifying all behaviors
   • Lifestyle Changes (18 points)
     o How many more years will you try to add
     o Explain behaviors you are willing to change
     o Explain why you choose not to change other behaviors
   • Length (1 points): At least three full pages
   • Format (1 point): 1" margins, double spaced, ≤12 pt.
   • English usage (3 points)

II. Oral History Project (75 points total)
   • Interviewee 1 (20 points)
     o Demographic information
     o Responses to questions
     o Your impression/evaluation of interview
   • Interviewee 2 (20 points)
     o Demographic information
     o Responses to questions
     o Your impression/evaluation of interview
   • Compare and Contrast Interviewees (25 points)
     o Similarities discussed
     o Differences discussed
     o Conclusions
   • Length (3 points): At least eight full pages; Used prescribed headings and subheadings
   • Format (1 point): 1" margins, double spaced, ≤12 pt
   • English Usage (6 points)
III. Oral History Conclusions (20 points total)

- Table to record your data (4 points)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Interviewee 1</th>
<th>Interviewee 2</th>
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<tbody>
<tr>
<td>Demographic info: sex, age, race and ethnicity</td>
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<tr>
<td>At 20 y/o: What was it like? Do for fun? Happening in world</td>
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<td>Biggest change today</td>
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<td>What was the best thing</td>
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<td>Wanted to do, but did not</td>
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<td>Prediction of world in 20 yrs</td>
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<tr>
<td>A difference* in interviewees</td>
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<tr>
<td>A similarity* in interviewees</td>
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*Not sex, age, race or gender

- Your notes on classmates’ data (4 points):
- Based on the discussion of the data today:

A. Briefly summarize the general results related to the elderly’s responses to each of these statements: (6 points)
   1. Best thing in life
   2. Something wanted to do, but did not
   3. Prediction of world in 20 years

B. We gathered data from elderly people of various races, ethnicities, countries of origin, education levels and socioeconomic status. Reflect on the responses from this diverse group of elderly people. What conclusions can you draw from these data? (6 points)
<table>
<thead>
<tr>
<th>Time</th>
<th>M 5</th>
<th>T 6</th>
<th>W 7</th>
<th>R 8</th>
<th>M 12</th>
<th>T 13</th>
<th>W 14</th>
<th>R 15</th>
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<tr>
<td>12:00</td>
<td>Course Intro</td>
<td>Syllabus</td>
<td>Due: Oral</td>
<td>Due: Test 1</td>
<td>Human Aging</td>
<td>Test 2</td>
<td>Elder Abuse</td>
<td>Healthy Aging</td>
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<td>Due: Oral History Paper</td>
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<td>Test 1 Definitions &amp; Measurement</td>
<td>Human Aging</td>
<td>Test 2 Human Aging</td>
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<td>Test 2 Elder Abuse</td>
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<td>Definitions &amp; Measurement</td>
<td>Human Aging</td>
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<td>Theories of Aging</td>
<td>Healthy Aging</td>
<td>What did we learn from the oral histories?</td>
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<td>Definitions &amp; Measurement</td>
<td>Class Interview: Old Person</td>
<td>Videos: How Far Have We Come in AD Research</td>
<td>Video: Cognitive Reserve: What The Religious Orders Study is Revealing about AD (20 m)</td>
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<td>Elder Abuse</td>
<td>Healthy Aging</td>
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<td>Definitions &amp; Measurement</td>
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<td>Definitions &amp; Measurement</td>
<td>Video: Cognitive Reserve: What The Religious Orders Study is Revealing about AD (20 m)</td>
<td>Human Aging</td>
<td>Exercise 4: Some Animals Age, Some Do Not</td>
<td>Elder Abuse</td>
<td>Exercise 5: Mediterranean Diet, Healthy Eating Index 2005, and Cognitive Function in Middle-Aged and Older Puerto Rican Adults</td>
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