2014

106-01 Biology of Aging

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Biology of Aging

INSTRUCTOR: Mike Gehner, Albers 110
Gehner@xavier.edu
745-2055 // 312-5864
Office Hrs.: Tues. 9:30 - 11:30

Course Description:

The fear of aging has preoccupied mankind since the beginning of time. It has driven the quest for the “fountain of youth” and has produced numerous quack remedies and fraudulent claims for extending life span. With the advent of the tools of molecular biology and modern genetics this quest to understand aging and extend life span has given way to serious scientific investigation, which has yielded important clues about the aging process and what might be realistically done to stop it. The “Biology of Aging” course will discuss and examine the current understanding of the aging process from the biological viewpoint with an emphasis on the anatomy and physiology.

Required books:


Class Requirements:

Your presence in class is mandatory! The class will be presented in an informal manner with discussion as an integral part of the learning experience. Participation and discussion will count towards 10% of the final grade. A short paper/presentation will be required and will count towards 25% of the final grade. Three exams will be given over the material that will count towards 65% of the final grade. The individual breakdown is as follows:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tests 1 &amp; 2</td>
<td>20% each</td>
</tr>
<tr>
<td>Final (part comprehensive)</td>
<td>25%</td>
</tr>
<tr>
<td>Group Project</td>
<td>25%</td>
</tr>
<tr>
<td>Participation / Attendance</td>
<td>10%</td>
</tr>
</tbody>
</table>

A = 100 - 93
A- = 92 - 90
B+ = 89 - 87
B = 86 - 83
C+ = 79 - 77
C = 76 - 73
D+ = 69 - 67
D = 66 - 60
F = 59 and below

Attendance:

You will not succeed in this class if you miss class. If you have to miss class, please email, call or text me before class. Remember, attendance along with participation is worth 10% of your grade.

Tests and Make-up Policy
Each of the 3 exams will consist of both multiple choice and written questions. The material will cover topics in lecture and in the texts. There are no make-up tests given. If you miss a test and have a legitimate excuse, there will be an exception. Failure to notify the instructor PRIOR to the exam eliminates the chance to make up the test no matter what the excuse.
CADAVERS: We have the wonderful opportunity to observe 2 cadavers in this course. We will view these as we end our book. All students are required to attend this observation.

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LECTURE SCHEDULE

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Assignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>M (1/13)</td>
<td>INTRODUCTION, Perspectives on Aging</td>
<td>Chapter 1</td>
</tr>
<tr>
<td>W (1/15)</td>
<td>Theories of Aging</td>
<td>Chapter 2</td>
</tr>
<tr>
<td>W (1/22)</td>
<td>Theories of aging continued</td>
<td>Chapter 2</td>
</tr>
</tbody>
</table>

[Anatomical Perspective]

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Assignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>M (1/27)</td>
<td>Cellular Aging</td>
<td>Chapter 3</td>
</tr>
<tr>
<td>W (1/29)</td>
<td>Cellular Aging continued</td>
<td>Chapter 3</td>
</tr>
<tr>
<td>M (2/3)</td>
<td>Integuments</td>
<td>Chapter 4</td>
</tr>
<tr>
<td>W (2/5)</td>
<td>Skeletal System &amp; Muscular System</td>
<td>Chapters 5 &amp; 6</td>
</tr>
<tr>
<td>M (2/10)</td>
<td>Skeletal System &amp; Muscular System</td>
<td>Chapters 5 &amp; 6</td>
</tr>
<tr>
<td>W (2/12)</td>
<td>Review and Group Project Assigned</td>
<td></td>
</tr>
</tbody>
</table>

M (2/17)  Test #1

W (2/19)  Nervous System                          Chapter 7
M (2/24)  Memory & Cognition                      Chapter 7
W (2/26)  Group Project Checklist #1 Due Alzheimer’s & Parkinsons

SPRING BREAK (3/3 - 3/7)

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Assignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>M (3/10)</td>
<td>Alzheimer’s &amp; Parkinsons</td>
<td></td>
</tr>
<tr>
<td>W (3/12)</td>
<td>Special Senses</td>
<td>Chapter 8</td>
</tr>
<tr>
<td>M (3/17)</td>
<td>Circulatory System</td>
<td>Chapter 9</td>
</tr>
<tr>
<td>W (3/19)</td>
<td>Circulatory System continued</td>
<td>Chapter 9</td>
</tr>
<tr>
<td>M (3/24)</td>
<td>Immune &amp; Respiratory System</td>
<td>Chapters 10 &amp; 11</td>
</tr>
</tbody>
</table>

W (3/26)  TEST #2

M (3/31)  Digestive System                        Chapter 12
W (4/2)   Nutrition                               |                          |
M (4/7)   Group Project Checklist #2 Due          |                          |
W (4/9)   Urinary System                          | Chapters 13 & 14         |
M (4/14)  Reproductive System                     | Chapter 14               |
W (4/16)  CADAVER OBSERVATION                     |                          |

EASTER

[Human Perspective]

W (4/23)  AGING Today: Hormones to Stem Cells    HANDOUT

M (4/28)  Groups 1 & 2: Memory / Cognition       (Individual Paper Due)
W (4/30)  Groups 3 & 4: Social Development / Health and Fitness (Individual Paper Due)

F (5/9)   10:00 - 11:50 Final (Part Comprehensive)