BIO 309 Syllabus
Your Body, Your Health, Your Choices
SUMMER 2014

Instructor: Susan Milner
Email: susan.milner@doane.edu
Number of credits: 3

Course Description:

BIO 309 is an interdisciplinary course encompassing biology, chemistry, biotechnology, medicine and natural sciences. The course examines controllable factors that influence human health and wellness and the various environmental attacks his/her body is facing on a daily basis. Students will use critical thinking, problem solving, and the scientific method to examine selected topics as they relate to everyday life. After course completion everyone should be able to make more educational choices regarding his/her life style.

Class Dates: May 28, June 4, June 11, June 18, June 25, July 2, July 9, and July 16th.

Class Times: 6-10:30 pm

Course Objectives:

- Introduce the student to current issues in biomedical sciences, scientific research and its applications.
- Develop a basic knowledge of the major information resources for scientific disciplines and the research skills to use them.
- Develop problem solving and communication skills essential to communication in health and science.
- Become informed of current science issues and how they relate to your health.
- Understand current issues related to the importance of science education and the public understanding of science. Know how to “keep-up” with biomedical sciences.
- Understand the consequences of biomedical applications to our lives.
- Understand medical science in personal and social perspectives.
- Be able to “apply” what you learn to your life.
Course Activities:

The basic format of the class will be class discussion and participation. Students will be assigned topics (see schedule) to research and present during class. Each week a topic is assigned and then the student is required to determine why that is important for us to learn about, what is relevant for us to know, latest research and theories, and how we can apply their findings to our lives. It is up to the student to determine the best way to present it to the class. The following are methods the student can use to present their findings: PowerPoint, handouts, videos, research articles, and lecture or presentation. The basic principle is to get you (the student) thinking about what is important to know about the topics and how we can apply it to our lives. A final journal of the course will anchor the learning and provide opportunities of reflection, questioning and further study.

Required Text:

There is no required textbook for this course. Students will be responsible for finding and presenting information in class.

Doane College Academic Integrity Policy:

The Doane College Academic Integrity Policy will be adhered to in this class. All projects/presentations must represent your own work. Any use of other’s ideas and words without proper citation of sources is plagiarism and will result in penalties to be determined by the instructor and/or dean of undergraduate studies.

Attendance:

Students are expected to attend every class. Each class is highly interactive and the learning is impossible to recreate in a make-up assignment. Attendance is a large part of your grade (see grading). Doane understands that sometimes, life “happens” and due to circumstances that are out of our control you may not be able to make it to class. In such an event, you must contact the instructor prior to class to explain your absence and make arrangements. Failure to do so will result in the inability to “make-up” the class and impact your grade (see grading). You will be required to complete an additional assignment due the following class. In the event that you miss two or more classes, special arrangements must be made with the instructor to determine if the requirements for passing the course can be met.
Grading:

Grading will be based on attendance, participation/presentation, and write-ups. There will be a total of 300 points for the entire class divided up as follows:

<table>
<thead>
<tr>
<th>Graded Activity</th>
<th>Points each class (total)</th>
<th>Approximate % of Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attendance</td>
<td>10 (80)</td>
<td>26.66%</td>
</tr>
<tr>
<td>Participation/ presentation</td>
<td>10 (80)</td>
<td>26.66%</td>
</tr>
<tr>
<td>Journal</td>
<td>20 (140)</td>
<td>46.66%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>40 (300)</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
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**Attendance:**
If students show up on time and stay for the entire class they will get full credit for that day. This is not dependent on participation/presentation, or write-ups. If they are late they can be docked a predetermined amount of points. Due to the structure of this class, it is imperative that students come to class and show up on time. Missed material cannot be made up as the class is based on class discussion. If you are not there you cannot “discuss”.

**Participation/Presentation:**
The most important thing is to come to class. Once you are there it is critical to be interactive and participate. You will be graded on how you present your material and how you participate with others presentations. Participation will be considered: asking questions, providing suggestions, offering different points of view, etc. To put it simply, you must “speak”. I expect everyone to get involved in discussion and present their political, religious, social, and economic views of the covered topics. There are no “wrong” points of view.

**Papers or “Write-ups”:**
Format for journal & presentations will be covered first night of class.

**Grading Scale:**

95 - 100 A+
90 - 94 A
85 - 89 B+
80 - 84 B
75 - 79 C+
70 - 74 C
65 - 69 D+
60 - 64 D
59 and below F
Class Schedule:

Session 1
Topic: Our Health: Environmental insults you may not know about.
In this class we will discuss some basic health facts and we'll talk about the environmental issues impacting us daily. The most important thing we need to do is decide on future topics and plan out the remainder of the course. Future topics are suggested but can be changed with class input at instructor discretion.

Session 2
Is this a problem? Why? What is fact and fiction regarding obesity? Can it be genetic? Is it in our control? Do pills work? Is medication and surgery the solution? What are the various types of surgery available and what are the risks? What are the diets that work and don’t work and why? Is diet the problem? What are the dangers if any to diets?

Session 3
Topic: Diabetes: Why should we be concerned?
What is diabetes mellitus? Why is it on the rise? What are the short and long term consequences of DM? What are the treatments for DM? People with diagnosed diabetes have health care costs 2.3 times higher than what expenditures would be in the absence of diabetes. How do we decrease diabetes when 1 in 5 health care dollars is spent caring for people with this disease?

Session 4
Topic: Stress & Mental Well-Being: Is it all in your head?
Stress – it’s a killer or is it? What kinds of stress are actually good for us? This session will touch on how to find “balance” in life and how to best cope with the stress of our daily lives. What about children? Approximately 1 in 5 children in the U.S. this year will experience a mental, emotional, or behavioral disorder (MEB) with an overall economic impact of $247 billion annually. MEB disorders are associated with poor school and health outcomes, and greater demands on the health, education, juvenile justice, and welfare systems.

Session 5
Topic: Cancer: What can we do to avoid it?
A look at new cancer cases and deaths in 2013 as well as current cancer incidence, mortality, and survival statistics and information on cancer symptoms, risk factors, early detection, and treatment. About 1,660,290 new cancer cases are expected to be diagnosed in 2013, and in 2013 about 580,350 Americans are projected to die of cancer, almost 1,600 people a day. Cancer remains the second most common cause of death in the US, accounting for nearly 1 of every 4 deaths. Are there ways to limit a future diagnosis?
Session 6
Topic: Heart Disease: Is it an American issue?
What makes Heart Disease in America different from other countries? About 600,000 people die of heart disease in the United States every year—that’s 1 in every 4 deaths. Heart disease is the leading cause of death for both men and women. More than half of the deaths due to heart disease in 2009 were in men.

Session 7: Your Microbes, Your Health: What your gut is trying to tell you.
Researchers have found that the trillions of bacteria living inside the human body play vital roles in determining how the body responds to challenges as different as malnutrition and cancer. Learn how to increase your own microbe health.

Session 8
Topic: The Blue Zones: Lessons on how to live to 100.
Blue Zone is a concept used to identify a demographic and/or geographic area of the world where people live measurably longer lives. We’ll take a look at those regions, cultures, diets and lifestyle to determine how to bring the “blue zone” into our own lives.