

Syllabus: BIO 309: Your Body, Health, Choices

Course number: BIO 309

Number of credits: 3

Course instructor: Josef Kren, e-mail: josef.kren@doane.edu

Description:

BIO 309 is an interdisciplinary course encompassing biology, chemistry, biotechnology, medicine and natural sciences for both science and non-science majors. The course examines the various environmental attacks his/her body is facing on 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.

Course Objectives:

1. Describe and discuss the health issues and potential health choices we encounter in our daily lives.
2. Analyze current issues in biomedical sciences, scientific research and their applications.
3. Develop problem solving and critical thinking skills essential to communication in biomedical science.
4. Critically evaluate biomedical information resources.
5. Interpret and communicate biomedical information for client audiences.
6. Research and communicate about current issues and emerging challenges in biomedical science.
7. Develop strategies to identify valid sources of emerging biomedical research.
8. Recognize and critique the personal and social perspectives of medical science.

After completing the course you should be able to describe and discuss health issues as related to daily lives and the choices we face.

I will present the 'scientific background' for each of the covered topics and will expect all of us (the community of active learners) to get involved in discussing the topics.

Course policies

Textbook:

There is no textbook for this course. Various journal articles will be assigned and provided during the course. You will receive power point presentation for each session.

Assignments:

Assignments are listed under each week module.

Attendance:

N/A - online class

Grading:

Your grade in this course will be based on:
See assignments under each module.

- Overall performance: 100-95 % = A+
94-90 % = A
89-85 % = B+
84-80 % = B
79-75 % = C+
74-70 % = C
69-60 % = D
< 59 % = F

Doane College Academic Integrity Policy:

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

Schedule of sessions:

Module 1

Topic 1: Human body and homeostasis

Define homeostasis and how the concept applies to human health.
Provide examples of how diet affects homeostasis.
Discuss wellness and homeostasis.

Module 2

Topic 2: Inflammation.

Summarize the major features of chronic inflammation.

Analyze the ways we can avoid chronic inflammation.

Propose (design) a table listing pro-inflammatory and anti-inflammatory food.

Module 3

Topic 3: Why do we get sick?

Define the immune system and its components.

Recognize how stressors in daily life impact the immune system.

Sketch how immune system is regulated by biodiversity from the natural environment.

Discuss how proper nutrients are important in immune function of infants.

Module 4

Topic 4: Obesity and type II diabetes mellitus

Explain the concept of diabetes mellitus.

Illustrate the health risks of being overweight.

Plan the lifestyle approaches which will help to avoid diabetes mellitus.

Examine how obesity leads to various diseases.

Session 5

Topic 5: Stress

Summarize the significance of stress in developing disease.

Identify the factors (stressors) leading to stress.

Examine the stressors affecting your health.

Recommend ways to cope with stress in daily life.

Session 6

Topic 6: Your friends in the gut

Explain the importance of healthy diet on promoting healthy bacteria in the gastrointestinal system.

Analyze how different types of bacteria are promoting health or disease.

Illustrate the impact of gut bacteria on mental health.

Session 7

Topic 7: The one miracle pill

Explain the consequences of drug overuse for an individual, community and society.

Summarize the trends in drug overuse over the past 20 years.

Examine the factors leading to excessive drug prescription in the United States.

Outline the major reasons for opioid epidemic in the United States.

Session 8

Topic 8: What about all the supplements and vitamins

Summarize the importance of vitamins and supplements in human health.
Compare different types of food as a source of vitamins and supplements.
Appraise the importance of traditional diet in maintaining good health.