

BIO 1070 Semester Syllabus

1. Course Information

College: College of Science and Mathematics
Department: Biological Sciences
Course Title: Health and Disease
Course Designation and Number: BIO 1070
Core Element(s): Area VI – Natural Sciences

Writing Intensive: Yes No

Method(s) of Instruction: Lecture
 Discussion
 Web-enhanced
 Web-only
 Other

Includes Lab: Yes No
One two- hour lab per week.

Prerequisites: None

2. Objectives

Natural Science Learning Outcomes

This course addresses the following University Learning Objectives. At the end of the course, students will have opportunities to learn to:

- communicate effectively
- demonstrate mathematical literacy
- evaluate arguments and evidence critically
- apply the methods of inquiry of the natural sciences
- demonstrate global and multicultural competence
- demonstrate understanding of contemporary social and ethical issues

BIO 1070 is a Natural Science course for the Core Element program. Learning outcomes are:

- a. Understand the nature of scientific inquiry.
- b. Critically apply knowledge of scientific theory and methods of inquiry to evaluate information from a variety of sources
- c. Distinguish between science and technology and recognize their roles in society
- d. Demonstrate an awareness of theoretical, practical, creative and cultural dimensions of scientific inquiry
- e. Discuss fundamental theories underlying modern science

Course Content Objectives

1. Examine the scientific method of inquiry in health-related research
2. Examine general theories of health and disease
3. Describe the basic mechanisms of disease causation
4. Discuss the effects of culture, health beliefs and values on disease manifestation, disease management, and health promotion.
5. Examine emerging diseases identified by Public Health authorities
6. Consider the relationship of Health Promotion and Wellness Programs to prevention strategies
7. Explore alternative therapies to disease treatment
8. Identify the impact of technology in genetic engineering and disease management.

Course Description

This course will introduce undergraduate non-science majors to insights into why we get sick and the ways in which we heal. In addition to a scientific exploration of how the human body functions, it will also address social, political, and cultural aspects of public health. Students will gain a deeper appreciation about health promotion and disease prevention, and acquire information that may help them to make health care decisions for themselves and their families.

<u>Week</u>	<u>Lecture Outline</u>	<u>Lab Exercises</u>
1	Scientific Method of Inquiry & Homeostasis	Lab Safety, Microscopy
2	General Concepts of Health and Disease	Gram staining; observing bacteria
3	How the human body works	Antibiotics
4	How the human body works <i>Exam 1</i>	Disease Transmission
5	Factors affecting health	Testing for antibody production
6	Indices and Evaluation of Health	Health assessment
7	Types and Causes of Infectious Diseases	Food poisoning
8	Types and Causes of Noninfectious Diseases <i>Exam 2</i>	Parasites & Fungi that cause disease
9	Types and Causes of Genetic Diseases	Human & Population Genetics
10	Types and Causes of Cancer	Heredity and Gene Mutations
11	<i>Health Promotion and Wellness Programs</i> <i>Exam 3</i>	<i>Energy Balance Sheet</i>
12	Public Health Services	Water testing
13	Cultural, social & political impacts on healthcare	Survey of healthcare attitudes
14	Impact of technology on disease management	DNA Isolation & testing
Finals	<i>Exam 4</i>	

Textbook

Lecture: *Human Diseases: A Systemic Approach*, 7th Ed; Pearson Prentice Hall, 2009

Lab: *BIO1070 – Biology of Disease Lab Manual*

Online resources (websites, journal articles) will be posted on WebCT as supplemental information.

Laboratory

Laboratory experience is an important and integral part of biology and accounts for about 30% of the course grade. Weekly lab participation is required. Points earned in lab will count toward the course grade. Lecture and lab are linked and cannot be taken separately.

For your protection and safety, you must wear long pants (for men and women) and closed toe shoes (no sandals). Some exercises may require safety goggles and disposable gloves. Check the section entitled “What You Will Need” at the beginning of each exercise to find out what will be required for your participation in that lab. Most lab sessions will begin with a short quiz over the work to be done that day. Prepare for these quizzes by reading over the exercises to be completed each week.

Specific written work will be required for every lab session. In most cases, this will be submitted at the end of the lab and returned to you the following week. Occasionally you will be given a week or more to

complete certain reports. Reports will be graded on the basis of completeness, accuracy, and thoughtful content. Unfortunately, we must impose a penalty for late papers unless prior arrangement is made with the instructor.

In general, no lab can be made up after the week for which it is scheduled. However, alternative activities can sometimes be substituted for missed labs. Check with your lab instructor within 2 days of a missed lab for advice regarding possible makeup work. NO make-ups work will be allowed if you communicate after the specified time period!

Lecture exams

There will be four multiple choice exams. The last exam will be given during final exam week. Students who miss a scheduled exam must communicate with the instructor PRIOR to the start of the exam in order to be eligible for a make-up exam.

Attendance Policy

Regular attendance in class is strongly encouraged. Your attendance will not be recorded, but you will not be able to make up any work that is missed in lecture due to non-attendance. The only exception to this is for varsity athletes who submit excused absences in advance and make arrangements to complete work as soon as they return to campus.

Students with disabilities

If you require special accommodations for lecture, lab or testing, please contact me AND the Office of Disability Services (023 Student Union) as soon as possible. An adapted lab section will be available for students with physical disabilities.

Grading

Points toward a final grade can be earned as follows:

4 lecture exam scores @ 100 pts each	400	
12 pre-lab quizzes @ 5 points each		60
14 lab reports @ 10 points each	<u>140</u>	
	TOTAL POINTS	600

Assignment of letter grades will be based on the total points earned in lecture and lab.

537 - 600 pts	A	(90-100%)
477 - 536	B	(80-89%)
417 - 476	C	(70-79%)
357 - 416	D	(60-69%)
< 357	F	<60%

Academic Integrity

Students are expected to uphold standards of personal honesty at all times. The WSU policy on academic integrity can be viewed at <http://www.wright.edu/students/judicial/integrity.html>.

The following actions will not be tolerated and may result in failure in the course:

1. Cheating on quizzes or exams in lecture or lab.
2. Submitting lab work, in whole or part that is written by someone else. This is plagiarism.
You may collaborate on collecting data, but lab reports must be independently written.