

GRAYS HARBOR COLLEGE SYLLABUS
BIOLOGY 160-GENERAL BIOLOGY
5 CREDITS
MOHAMMAD IBRAHIM

CONTACT INFORMATION

- Instructor: Mohammad Ibrahim
- Office: 318 E
- Office Hours: See the attached office hour's schedule
- Phone: (360) 538-4178, 1-800-562-4830 ext. 4178
- E-mail: mibrahim@ghc.edu
- Class: MTWTh 12:00-12:50 PM
- Lab 1 : Wednesday 1:00-2:50 PM, Room No. 311
- Lab 2 : Thursday 1:00-2:50 PM, Room No. 311

COURSE DESCRIPTION

Biology 101 is an introduction to the processes and principles that are common to all living things. The chemistry of life; cell structure and function; molecular basis of heredity; Mendelian genetics; evolutionary theories are covered. This course is intended for, but not limited to, students intending to continue biology or the health sciences. Four lecture hours and two lab hours. Satisfies science or lab requirement area A distribution or specified elective for the AA degree.

PREREQUISITES

ENGL 095 or placement in ENGL 101; READ 090 or placement in READ 120; MATH 093 or placement in MATH 098 or higher or instructor permission

Concurrent enrollment in BIOL 160 Lab

TEXTBOOK

Ricki Lewis. 2007. Life. Sixth Edition. McGraw-Hill Companies Inc.

OUTCOMES

By the completion of this course students will develop abilities in the area of disciplinary learning, literacy, critical thinking, social and personal responsibility and using resources.

1. Disciplinary Learning (DSA rating 4)

- Describe the characteristics of life
- Explain the formation of various chemical bonds between atoms
- Describe the structure and function of cell
- Identify carbohydrates, proteins, lipids, and state their function.
- Describe the molecular structure of plasma membrane.
- Describe the process of cell reproduction
- Discuss enzyme activity in relation to its structure.
- Explain the transformation of energy in terms of laws of thermodynamics.
- Describe cellular respiration and photosynthesis in terms of chemical reactions.
- Relate cell division to development, growth, and reproduction in living things.
- Describe the principles of simple Mendelian genetics
- Describe the theories of evolution.

2. Literacy (DSA rating 2)

- Read the assigned topics, handouts, class activities, and develop appropriate answers and write responses
- Prepare list(s) of key terms and vocabulary
- Define/explain the key terms appropriately in your own words
- Describe the process, chemical cycles, and methods related to biology in your own words

3. Critical Thinking (DSA rating 3)

- Define the terms used in biology
- Explain the relationship between biotic and abiotic component of an ecosystem
- Construct/draw models of atoms and molecules
- Label parts of prokaryotic and eukaryotic cell and describe their function
- Relate the movement of substance across the plasma membrane to its molecular structure.
- Explain cellular transport based on fluid mosaic model of plasma membrane.
- Analyze the pros and cons of Darwin's theory of natural selection.
- Describe the impact of human on the environment using ecological principles
- Describe the structure of DNA, and RNA and their role in protein synthesis.
- Identify simple Mendelian traits in human.
- Analyze the outcome of simple Mendelian crosses.

4. Social and Personal Responsibility (DSA rating 1)

- Develop respect for life
- Recognize the existence of other species of living things
- Develop time management skills

5. Using resources (DSA rating 2)

- Search articles in the local libraries for your research project.
- Obtain information from the Internet on the global environmental issues.

METHODS OF TEACHING

I use lectures, lab exercises, videos, and PowerPoint presentation to teach this course. I encourage you to read the book, lecture notes, and handout material before the lecture and other activities. I welcome course related questions and like you to share subject related information in the class.

- **Lecture**

I use Microsoft PowerPoint, videos, transparencies, and the blackboard to deliver the lectures. I recommend that student cover lecture material, textbook, and online notes, before the lecture.

- **Videos**

I show videos on special topics through out the course. The selected videos contain information and examples from the daily life to simplify the concepts in human nutrition.

- **Laboratory Exercises, lab report, and attendance**

There are ten lab exercises in this course. The lab exercises are designed to strengthen student's understanding of scientific method and the basic principles of biology. I pass on lab handouts during the lab and explain the lab activity. It is very important that you read the handouts, follow the direction, and stay in the lab until you finish the work. Student will use scientific method to write lab report for several labs.

- **Presentation**

See the methods of assessment and the guidelines for PowerPoint presentation at the end of the syllabus

METHODS OF ASSESSMENT

I use several methods to assess the outcomes of this course. The assessment process includes the traditional way of testing and collaborative learning through group projects and presentation. It includes the following:

- **Quizzes 300 Points**

There are three tests in this course. Each test will have 50 questions and is worth 100 points. The time, date, and location of the quizzes are given below, unless stated otherwise. The format of the quizzes will include multiple choice, matching word, and yes or no questions. The test material will come from the **TEXTBOOK, LECTURE NOTES, AND THE LECTURES.**

TEST SCHEDULE

TEST 1: Date, time, and location will be specified here

TEST 2: Date, time, and location will be specified here

TEST 3: Date, time, and location will be specified here

- **Comprehensive Final Exam 200 Points**

There is one final comprehensive exam in this course. The final exam will be according to the quarterly schedule. The format of the test will include multiple choice, matching word, and yes or no questions. The test material will come from the **TEXTBOOK, LECTURE NOTES, AND THE LECTURES. Do not ask for early or late final exam.**

- **Laboratory Attendance 20 points**

There are ten lab exercises in this course. There are 2 points/lab attendance and completing the work. Any missed lab will not be made up and student will lose 2 points.

- **Laboratory Final 80 points**

Administered in Room 311 at the end of the quarter. It is a comprehensive exam and is composed of questions from the lab handouts, laboratory procedures, as well as identification of lab equipment/supplies and their proper use.

- **PowerPoint Presentation 100 Points**

Each student will prepare a 5-10 minutes PowerPoint presentation on a topic related to human nutrition and deliver it to the class in the last week of this quarter. The guidelines for term paper and the presentation will be discussed in the class. For more information, follow the guidelines for preparing the PowerPoint presentation, at the end of the syllabus.

GRADE EVALUATION and DUE DATES

The grades are evaluated based upon the following:

<u>ACTIVITY</u>	<u>POINTS</u>
Test 1	100 points
Test 2	100 points
Test 3	100 points
Final exam	200 points
Labs	100 points
TOTAL	600 points

GRADING SCALE

92-100% A	89-91% A-	85-88% B+	82-84% B	79-81% B-
75-78% C+	72-74% C	69-71% C-	65-68% D+	62-64% D
0-61% F				

TENTATIVE LESSON PLAN

<u>CHAPTER</u>	<u>TOPICS</u>
2	LIFE'S CHEMICAL BASIS
3	MOLECULES OF LIFE
4	CELL STRUCTURE AND FUNCTION
5	A CLOSER LOOK AT THE CELL MEMBRANES
6	GROUND RULES FOR METABOLISM
7	PHOTOSYTHESIS

- 8 HOW CELL RELEASE CHEMICAL ENERGY
- 9 HOW CELL REPRODUCE
- 10 MEIOSIS AND SEXUAL REPRODUCTION
- 11 OBSERVING PATTERNS IN INHERITED TRAITS
- 12 CHROMOSOMES AND HUMAN INHERITANCE
- 13 DNA STRUCTURE AND FUNCTION
- 14 FROM DNA TO PROTEIN
- 21 EVIDENCES OF EVOLUTION
- 45 POPULATION ECOLOGY
- 46 COMMUNITY STRUCTURE AND BIODIVERSITY
- 47 ECOSYSTEMS

TENTATIVE LAB SCHEDULE-SUBJECT TO MODIFICATION

LAB #	WEEK	TOPICS
1	1	Introduction, Safety Rules, Scientific Method
2	2	Using Microscope
3	3	Biological Molecules
4	4	Cell Structure under Light Microscope
5	5	Diffusion and Osmosis
6	6	Photosynthesis
7	7	Mitosis and Meiosis, Genetics
8	8	Genetics
9	9	DNA extraction, biotechnology
10	10	Ecology lab

POLICIES:**Expectations from the student**

- Come to the class on time and stay for the entire period.
- Do not whisper or talk to one another when lecture is in progress.
- Do not pack your bags before the class is over.
- Turn off the cellular phone/ pager during the class.
- Do not do homework for other classes in this class.

American Disability Act

Any individual who has a documented disability, which might interfere with his or her ability to fully participate in the class, may be eligible for accommodations. Feel free to contact the Disability Support Services program located in the Student Services, room 119. Any information regarding disability will be kept confidential.

Attendance

Attendance is important in this class but is not part of the grades. I will pass on attendance sheet every day in the class for the record.

Academic dishonesty

Academic dishonesty, as mentioned and described in the G.H. College General Catalog 2001, will not be tolerated.

GUIDE LINES FOR POWERPOINT PRESENTATION

- Collect information about your topic from the library/internet
- Prepare an outline of the information
- The next step is how to use the Microsoft PowerPoint program to make a presentation

I recommend:

- Go to the library media center and make an appointment with Anna Patrick. She will give you some guidelines.
- Make an appointment with me and I will walk you through the whole process.
- Get help from one of your class fellow who knows how to use Microsoft PowerPoint.
- Go to the computer lab and ask the computer lab attendant for help.
- Go to the World Wide Web and type power point tutorial in the address bar and hit enter.
- Search for the PowerPoint tutorial with step-by-step instructions on the world wide web

Once you know (or if you already know) how to use Microsoft PowerPoint program do the following:

- On the first slide put the title of your presentation, your name (group names)
- On the second slide, include the summary of your presentation
- Use 32 size font for titles and 30-size font for the subtitles on each slide.
- Choose a background color and font color that is easy to see.
- Print the summary of your presentation and give it to the audience before the presentation.
- If you like to scan a picture etc. and like to include it in your presentation, go to the media center in the library, or talk to me.
- Include a clip art, picture, and diagram in your presentation.
- Save your presentation to a floppy disc or email it to me for editing.

Rubrics for PowerPoint Presentation

Student name _____ Date _____ Course _____ Score _____

Activity	Exemplary	Proficient	Some what proficient	Incomplete	Score
Title slide	6 points Contain title, date, name(s), course #, teachers name	4 points Missing one of the item except title or name	2 points Missing two of the item except title or name	0 points Missing three of the item except title or name	
Summary slide	6 points All slides represented	4 points 1-2 slide not represented	2 points 3-4 slide not represented	0 points More than 4 slides not represented	
Introduction	6 points Introduction is clearly stated and represent the overall title or topic; with question or goal	4 points Introduction is clearly stated and relates to the topic or title	2 points Introduction is somewhat related to the topic or title and not appealing to the audience	0 points Introduction poorly represents the topic or title and has no relevancy to the audience	
Grammar	6 points No spelling, grammar, capitalization or punctuation errors	4 points 1-2 errors	2 points 2-3 errors	0 points Full of errors	
Text, background, graphics, sound, animations	6 points Text is large seen with ease against the background; graphics, sound and animation enhances the clarification of complex ideas or concepts	4 points Text is large seen with ease but does not stand out from the background color; graphics, sound and animation enhances the helps the audience in understanding the information	2 points Some text is too large in relation to other and not seen with ease against the background; graphics, sound, animation does not enhance the clarification of ideas and concepts	0 points Text is difficult to read, graphics, sound or animations not properly done or absent	
Organization	6 points Student was well prepared, researched the topic well and presented information in a logical and interesting manner	4 points Student was prepared somewhat researched the topic and presented the information in a sequence that audience can follow	2 points Student was somewhat prepared and presented some of the information that audience can follow	0 points Student was not well prepared and there was no sequence that audience can follow	
Eye contact	6 points Student engage the audience, made eye contact and seldom return to the computer screen	4 points Student somewhat engaged the audience, maintained eye contact and often returned to computer screen to read the notes	2 points Student did not engage the audience, occasionally made eye contact and read mostly from the notes	0 points Student did not make eye contact and read the notes the entire time.	

Voice	6 points Clear voice, correct pronunciation of terms, audience can hear easily	4 points Clear voice, correct pronunciation of most terms, most audience can hear easily	2 points Low voice, incorrectly pronunciation of most terms, difficulty hearing	0 points Mumbling voice, incorrect pronunciation, audience in the back could not hear	
Subject knowledge	6 points Student know the subject well, answered all the questions with explanation, examples and elaboration	4 points Student know the subject well, answered most questions with explanation, examples and elaboration	2 points Student does not know enough about the subject, answered some questions little or no explanation, examples and elaboration	0 points Student does not know the subject and cannot answer any question	

Rubrics for Lab Report

Student name _____ Date _____ Course _____ Score _____

Activity	Excellent	Good	Satisfactory	Need improvement
Title page	Contain title, date, name(s), course #, teachers name	Missing one of the item except title or name	Missing two of the item except title or name	Missing three of the item except title or name
Hypothesis/purpose	Purpose or hypothesis is clearly stated			
Material/supplies	List of all the necessary material and supplies for the experiment is provided	List of most of the material and supplies provided	Some of the necessary material and supplies for the experiment missing from the list	List contain some wrong material and supplies
Method/procedure	All steps are in detail and logical order. All safety precautions followed	All steps are there in logical order. All safety precautions followed	Some steps are missing and some not in logical order. All safety precautions not followed	Most steps are missing, no logical order, no safety precautions
Results	All data recorded both in table and graphic form, correct and complete analysis of data is provided	All data recorded both in table and, correct and complete analysis of data is not provided	Most data not recorded, correct and complete analysis of data is provided	Incorrect data is provided