

# BIO 100 – Fundamentals of Biology Online

## Spring 2010 Syllabus

CRN 20645

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**Course site:** <http://owl.net.harford.edu>

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### **Course Description**

In this introductory course for non-science majors, a general survey of the characteristics of life is presented, including such topics as cellular biology, metabolism, genetics, organ systems, genetics, development, evolution, behavior, and ecology. All forms of life including bacteria, protists, fungi, plants, and animals will be studied. An emphasis is placed on human organ systems. *BIO 100 will not satisfy the science requirement for science majors.*

### **Required Texts and Materials**

Krogh, David. Biology: A Guide to the Natural World, 4<sup>th</sup> ed., David Krogh, Prentice Hall. 2009. ISBN #0132254379 (book only)

Stabler, Timothy. Physio-Ex for Human Physiology, 8<sup>th</sup> edition, Benjamin Cummings. 2008. ISBN # 0-8053-8061-2

The text and lab CD may be purchased from the HCC Bookstore in the Student Center. View textbook selections online at: <http://bookstore.harford.edu/home.aspx>.

### **Student Learning Objectives & Academic Outcomes**

Upon successful completion of the course, the student will be able to:

1. Define and explain science, apply the scientific method and correctly use scientific terminology, both inside the classroom and laboratory setting. (*Outcomes – Critical Thinking, Communication, Information literacy*)
2. Apply basic biological principles and explain the functioning of biological systems. (*Outcomes – Critical Thinking, Science and Technology, Communication, Information Literacy*)
3. Explain embryology, genetics, behavior and evolution as they pertain to living systems. (*Outcomes – Critical Thinking, Science and Technology, Communication, Information Literacy*)

4. Demonstrate the ability to discuss current issues associated with our environment, aging, cloning, genetic engineering, and medical issues such as AIDS and cancer. (*Outcomes – Communication, Science and Technology*)
5. Identify and explain basic anatomical structures and physiological functions of living organisms. (*Outcomes – Critical Thinking, Science and Technology, Communication*)
6. Identify and describe the basic interrelationships between living organisms and their environments. (*Outcomes – Critical Thinking, Science and Technology, Communication, Information Literacy*)
7. Recall basic chemistry, types of reactions, and the functions of organic and inorganic molecules. (*Outcome- Critical Thinking*)
8. Use technology to investigate and experiment on biological principles via computer laboratory simulations. (*Outcomes – Science and Technology, Interpersonal Skills, Personal and Self-Management Skills, Critical Thinking*)
9. Identify and locate appropriate types of information for review, evaluate the information, and use the information effectively, ethically, and legally. (*Outcomes – Communication, Critical Thinking, Information Literacy*)

Measurement of academic outcomes shall include lecture, discussions, collaborative and independent exercises, laboratory investigations, reports, quizzes, and examinations.

### **Blackboard Learning System**

The course content is delivered online through OwlNet which is HCC's web portal at: <http://owlnet.harford.edu>. To learn how to access course content, visit the HCC eLearning page at [www.harford.edu/Online](http://www.harford.edu/Online).

### ***Blackboard Problems and Assistance:***

If you need technical assistance regarding the Blackboard program, web browser, or computer issues visit the HCC Distance Learning site [www.harford.edu/DistLearn](http://www.harford.edu/DistLearn) or Digital Help Line 410-836-4256 during library hours or [online@harford.edu](mailto:online@harford.edu). Please keep me informed if you are having technical difficulties. Questions regarding course content, quiz availability, grading, or other content specific questions should be directed to me.

### **Online Course Words of Wisdom**

For many of you, this is your first online course. For some of you, this is your first college course. There are several things that make online courses very different from traditional, classroom courses. Many of the expectations are the same, but there are some additional expectations as well. (*Adapted from Dakota State University*)

- **You will spend more time on an online course than a traditional classroom course.** Don't expect to spend less time. You won't have an instructor in front of the classroom each

week to tell you what is important, to explain difficult points and to guide you in the right direction during a laboratory experiment. Some of it you'll have to do on your own. That means extra time on your part. Expect to spend a minimum of 10 to 14 hours per week working on or attending your online class. You will need to spend at least 2 to 3 hours on each chapter. Laboratory assignments will take about 2 to 4 hours each.

- **You must stay in contact with the instructor.** It's very easy to get lost. In a regular classroom, the instructor sees you several times a week and will notice when you're not there. Stay in touch, especially if you are struggling with the information.
- **You will not be able to work at your own pace.** This is not a self-paced course. There are deadlines and you must adhere to them. Do not expect to finish the course in the first four weeks or to do all the work in the last four weeks. Each assignment, quiz, and test has a deadline. If you miss a deadline expect to suffer the consequences.
- **You will be able to schedule your own time.** The biggest advantage of an online course is its flexibility. You can work on projects and assignments, take quizzes, view lectures, almost anything on your own time. Just watch the deadlines.
- **Email isn't instantaneous.** While e-mail is great, it isn't instantaneous. Sometimes it takes minutes or even hours for it to get through and the professor isn't sitting in front of the computer waiting for messages. Expect to receive a response within one to two days.

### **Grade Determination**

Your final grade in this course is calculated from the following:

Lecture Exams (5 @ 75 points each)	375 points
Online Quizzes (12 best @ 10 points each)	120 points
Online Laboratory Assignments (13 @ 10 points each)	130 points
Discussion Responses (5 @ 10 points each)	50 points
<b>Total Points</b>	<b>675 points</b>

Grading Scale: A = 90 -100%; B 80 to 89%; C = 70 to 79%; D= 60 to 69%; F = ≤59%

Grades will be posted on the Blackboard course site. The program tracks all quizzes taken during the course; dropping of the lowest quiz grades for the final grade calculation must be done manually. Grades for online assessments will post immediately following the quiz. I will make every attempt to grade exams and discussions within one week of the due date. If you have any questions regarding your grades or assignments, please always ask. Midterm deficiencies of D or F and Final Grades will be posted on SOLAR and Blackboard.

**Exams:**

Five exams worth 75 points each will be delivered online at the end of each unit. You will have 75 minutes to complete each exam. The exams are not cumulative. ☺ They will be composed of multiple-choice, fill-in, true/false, or matching format in any proportion. It is your responsibility to take the exams during the assignment timeframe. If an emergency occurs, please contact me as soon as possible. Scheduled conflicts must be brought to my attention during the first week of the semester.

**Online Laboratory Assignments:**

Online laboratory assignments are worth 10 points each. There are 13 laboratory assignments/quizzes. Complete the corresponding readings prior to working on the lab. Click on the Assignments link located on the homepage or from the Unit page. Lab assignments may consist of a graded quiz or lab report. Details for completion and grading of lab reports are posted with the assignment.

You may work with a lab partner and your partner's name must be included with the final assignment. Completed lab assignments should be cut and paste into the assignment block. Please do not submit your lab as an attachment. Late submittals lose one point per day.

**Online Quizzes:**

Online quizzes are assigned and are worth 10 points each. The highest twelve quiz grades will be used to calculate the final quiz grade for a total 120 possible points. Quizzes are accessed from the Assessments link and under the Learning Modules link. Quizzes will consist of ten questions in multiple choice, true/false, or matching format. You have 10 minutes to complete each quiz. Be sure to save each answer before submitting your quiz.

**Online Discussions:**

Five discussion topics will be posted under the Discussions link and are worth 10 points each for a total of 50 points. Topics will be related to textbook readings and current events in the news. You will be asked to post responses on a given topic and are expected to respond to posts made by other students. You are required to use academic sources to support your statement and to document your source with a citation. Each topic will be available during the unit assigned. Posts submitted after the close of the unit will receive a grade of zero.

The discussion forum is a peer-focused learning environment, not instructor led. Although I will not respond to all of your online postings, I will read all of them. I may facilitate discussion at times, but you are expected to discuss issues, ask each other questions, and contribute to the discussion.

Additional discussion boards are posted for questions on Blackboard, exams, and lab projects. I encourage you to post your questions here, as another student probably has the same question and can benefit from my response. Questions about grades should be sent via email.

<b>Grading Rubric for Online Discussions</b>				
	<b>3-4 points</b>	<b>2 points</b>	<b>1 point</b>	<b>0 points</b>
<b>Quality of information (3-4 points)</b>	Response is well thought out with supporting documentation, poses questions; extends discussions already taking place, or poses new possibilities or opinions not previously voiced.	Response is well thought out with supporting documentation, but does not extend discussions already taking place or pose new ideas.	Response makes limited, vague connections between topic and student posts.	Response not made within due date.
<b>Resources consulted (2 points)</b>		Postings refer to textbook material or other reliable sources (books, journal articles, web sites).	Postings show evidence of having read textbook or other sources and include at least one reference.	Postings include opinions only, no evidence of reading any reliable source.
<b>Participation (2 points)</b>		Participated 2 to 3 times, minimum of 3 posts.	Participated 1 time, minimum of 2 posts.	Does not participate in discussion.
<b>Posts on time (1 point)</b>			Initial post made <b>within first week</b> of unit, giving others an opportunity to respond.	Initial post is not made within first week.
<b>Quality of writing (1 point)</b>			Response is written in proper English.	Grammatical errors exist.
<b>Discussions posted after the unit deadline receive a zero grade.</b>				

***Tips for an excellent discussion post:***

- Postings should be evenly distributed throughout the discussion period, not concentrated all on one day or at the beginning and/or end of the period.
- Posting should be a minimum of one short paragraph or a maximum of two paragraphs.
- Avoid postings that are limited to “I so agree” or “hey, great idea.” If you agree or disagree with a posting, explain why with supporting evidence.

- Address the topic as much as possible, don't let the discussion stray.
- Document all supporting evidence with a citation.
- If quoting from a source to support your postings, use quotations and include page numbers from the source.
- Build on the responses of others to create threads. Incorporate quotes from other student responses as a way of synthesizing and extending the conversation.
- Bring in related prior knowledge (work experience, prior coursework, readings.)
- Postings should be written using proper English, spelling, grammar, and punctuation. No 'txt' abbreviations.
- Be respectful of the opinions of your fellow student, even if they differ greatly from your own. We can learn a lot from looking at issues from a different viewpoint.
- **Discussions posted after the unit deadline will receive a zero grade.**

### ***Online Chats:***

Optional online chats will be held during the semester. The dates and times will be posted on the course site. I recommend joining as many chats as possible, and at least one per unit to review for an upcoming exam. The chats allow me to explain material and hold discussions in real time. Students have found these to be extremely valuable.

### **Communication**

Announcements will be posted on the course site to relay important information and upcoming deadlines. I prefer all email communication regarding this course to be made through the Blackboard course site Mail link. If the Blackboard is down, contact me at my campus email: [timbiero@harford.edu](mailto:timbiero@harford.edu) and reference BIO 100 online.

I check into the course site every two to three days and I have the same expectation of you. I do check my campus voice mail, just not as frequently as email. Technology does sometimes fail. If you do not receive a response within two days, please contact me again.

### **Academic Dishonesty**

Students shall be familiar with and adhere to the policy governing academic dishonesty and its sanctions as written in the current HCC Catalog ([www.harford.edu/catalog](http://www.harford.edu/catalog)). Students who commit acts of dishonesty (e.g., cheating, fabrication, facilitating academic dishonesty, and plagiarism) will be subject to formal disciplinary action and shall receive a grade of zero on the test, quiz, or assignment involved. At the discretion of the instructor, the student may also receive an F for the course. This includes incidents that occur in the Test and Assessment Center. In addition, the student may be referred to the Associate Vice President for Student Development for a student code violation.

## **Student Conduct**

Students shall follow the rules and conduct themselves in the appropriate manner outlined in the current *HCC Student Handbook*. A copy of the handbook may be found in the Student Center or at [www.harford.edu/CollegeLife/StudentHandbook](http://www.harford.edu/CollegeLife/StudentHandbook).

## **Disability Support Services**

HCC is committed to serving students who have documented physical, learning, psychological, or other disabilities. Students who have a disability are responsible for contacting Disability Support Services at 443-412-2402 to discuss their needs for accommodations. All information shared with Disability Support Services will be held in confidence. Please notify the instructor in advance of any required accommodations. Web link: [www.harford.edu/dss](http://www.harford.edu/dss)

## **Tutoring Support Services**

If you find that a tutor would help with your success in this class, you have two options. HCC provides free tutoring for students who demonstrate an academic need. For more info go to <http://www.harford.edu/Tutoring> or call 443-412-2149. Walk-in tutoring for biology and chemistry is provided by the Math Center in Fallston Hall, Room 101. For the Math Center walk-in schedule go to: <http://www.harford.edu/Tutoring/math.asp?FA=Welcome>.

## **Important Dates for Spring 2010 15-week courses:**

January 25	Spring semester begins
February 1	Refund deadline for 15-week classes
March 21-27	College Closed – Spring Break
April 4	College Closed – Easter
April 6	Withdrawal deadline for 15-week classes
May 10	Final exams begin (May 10-15)
May 15	Spring semester ends

## **Course Schedule**

The instructor reserves the right to modify and/or change the course syllabus as needed during the term with reasonable notification to students. If the college closes or Blackboard is down at the time an exam or assignment is due, the date will be extended.

## **HCC Green Initiatives**

Harford Community College is a green campus. Please consider using the recycle bins located in all buildings and outside areas for your recyclable materials: glass, plastic, and paper.

# BIO 100 Online – Imbierowicz – Course Schedule – Spring 2010

## Getting Started!

Complete these introductory activities first and no later than Sunday, January 31:

- Read Start Here! Module
- Print and read completely the course syllabus and schedule
- Read the Introduction to Learning Modules
- **Post Discussion 1: Introduction Yourself**
- **Take the Bonus Quiz:** Test your knowledge of course requirements! (5 pt bonus)

*Complete the following activities during the unit time frame. Each unit runs for three weeks and closes on a Sunday. The exams remain open 2 days after the unit closes.*

## Unit One: January 25 – February 14

<b>Text Readings</b>	Chapter 1: Science as a Way of Learning Chapter 2: Fundamental Building Blocks Chapter 3: Life's Components Chapter 4: The Cell Chapter 5: The Plasma Membrane Chapter 6: An Introduction to Energy Chapter 7: Deriving Energy from Food Chapter 8: Photosynthesis
<b>Web Animations &amp; BioFlix</b>	<b>See Text Website (<a href="http://www.aw.com/krogh4">www.aw.com/krogh4</a>) to view animations</b> <b>BioFlix:</b> Tour of Animal Cell; Tour of Plant Cell (Ch.4), Cell Respiration (Ch.7), Photosynthesis (Ch.8) <b>Discovery Videos:</b> Early Life (Ch.1), Cells (Ch.4), Nutrition (Ch.7)
<b>Laboratory Assignments</b>	<b>Lab 1: The Scientific Method</b> (after reading chapter 1) – <b>submit report</b> <b>Lab 2: The Cell</b> (after chapter 4) – take <b>Lab Quiz 2</b> <b>Lab 3: Cell Transport (Physio-Ex CD)</b> (after chapter 5) – take <b>Lab Quiz 3</b>
<b>Quizzes</b>	<b>Quiz 1:</b> covers chapters 1-3 <b>Quiz 2:</b> covers chapters 4-5 <b>Quiz 3:</b> covers chapters 6-8
<b>Discussion</b>	<b>Discussion Topic 1 – Introduce Yourself</b> <b>** Make first post by 1/31**</b>
<b>Exam</b>	<b>UNIT EXAM 1 will be available online from Wednesday 2/10 to Tuesday 2/16</b>

## Unit Two: February 15 – March 7

<b>Text Readings</b>	Chapter 9: Genetics & Cell Division Chapter 10: Meiosis Chapter 11: Mendel & His Discoveries Chapter 12: Units of Heredity Chapter 13: DNA Structure & Replication Chapter 14: How Proteins are Made Chapter 15: Biotechnology
<b>Web Animations &amp; BioFlix</b>	<b>See Text Webpage (<a href="http://www.aw.com/krogh4">www.aw.com/krogh4</a>) to view animations by chapter.</b> <b>BioFlix:</b> Mitosis (Ch.9), Meiosis (Ch.10), Protein Synthesis (Ch.14) <b>Discovery Videos:</b> Fighting Cancer (Ch.9), Colored Cotton; Novelty Gene (Ch.12), DNA Forensics (Ch.13), Cloning; Transgenics (Ch.15)
<b>Laboratory Assignments</b>	<b>Lab 4: Mitosis/Meiosis</b> (complete after reading chapters 9-10) <b>Lab 5: Genetic Problems</b> (complete after reading chapters 11-12) <b>Lab 6: Genetic Assignment</b> (complete after reading chapters 11-12)
<b>Quizzes</b>	<b>Quiz 4:</b> covers chapters 9-10 <b>Quiz 5:</b> covers chapters 11-12 <b>Quiz 6:</b> covers chapters 13-15
<b>Discussions</b>	<b>Discussion Topic 2: Biotechnology</b> <b>**Make first post by 2/21**</b>
<b>Exam</b>	<b>UNIT EXAM 2 will be available from Wednesday 3/3 to Tuesday 3/9</b>

## Unit Three: March 8 – March 28

<b>Text Readings</b>	Chapter 16: An Introduction to Evolution Chapter 17: Microevolution Chapter 19: History of Life on Earth Chapter 21: Viruses, Bacteria, Archaea, Protists Chapter 22: Fungi & Plants Chapter 23: Animals Chapter 24: The Angiosperms
<b>Web Animations &amp; BioFlix</b>	<b>See Text Webpage (<a href="http://www.aw.com/krogh4">www.aw.com/krogh4</a>) to view animations by chapter.</b> <b>BioFlix:</b> Mechanisms of Evolution (Ch.17) <b>Discovery Videos:</b> Cells; Fighting Cancers (Ch.16), Introduced Species (Ch.17), Fungi ; Leafcutter Ants (Ch.22), Invertebrates (Ch.23), Plant Pollination (Ch.24)
<b>Laboratory Assignments</b>	<b>Lab 7: Antibiotic Resistance</b> (complete after reading chapter 17) <b>Lab 8: Applied Botany</b> (complete after reading chapters 22 & 24)
<b>Quizzes</b>	<b>Quiz 7:</b> covers chapters 16-19 <b>Quiz 8:</b> covers chapters 21-22 <b>Quiz 9:</b> covers chapter 23 <b>Quiz 10:</b> covers chapter 24
<b>Discussions</b>	<b>Discussion Topic 3: Biodiversity</b> <b>**Make first post by 3/14**</b>
<b>Exam</b>	<b>UNIT EXAM 3: will be available from Wednesday 3/24 to Tuesday 3/30</b>
<b>**Note: November 9 – Withdrawal Deadline for 15-Week Classes**</b>	

## Unit Four: March 29 – April 18

<b>Text Readings</b>	Chapter 26: Integumentary, Skeletal, & Muscular Systems Chapter 27: Nervous & Endocrine Systems Chapter 28: Immune System Chapter 29: Blood & Breath
<b>Web Animations &amp; BioFlix</b>	<b>See Text Webpage (<a href="http://www.aw.com/krogh4">www.aw.com/krogh4</a>) to view animations by chapter.</b> <b>BioFlix:</b> Muscle Contraction (Ch.26) & How Neurons Work (Ch.27) <b>Discovery Videos:</b> Intro to Human Body; Muscles & Bones (Ch. 26), Endocrine System ; Teen Brains (Ch.27), Vaccines (Ch.28), Blood (Ch.29)
<b>Laboratory Assignments</b>	<b>Lab 9: Human Tissues</b> (complete after reading chapter 26) <b>Lab 10: Neurophysiology</b> (complete after reading chapter 27) <b>Lab 11: Cardiovascular Physiology (Physio-Ex CD)</b> (complete after chapter 29)
<b>Quizzes</b>	<b>Quiz 11:</b> covers chapter 26 <b>Quiz 12:</b> covers chapter 27 <b>Quiz 13:</b> covers chapter 28 <b>Quiz 14:</b> covers chapter 29
<b>Discussions</b>	<b>Discussion Topic 4: Vaccinations</b> <b>** Make your first post by 4/4**</b>
<b>Exam</b>	<b>UNIT EXAM 4: will be available from Wednesday 4/14 to Tuesday 4/20</b>

## Unit Five: April 19 – May 9

<b>Text Readings</b>	<b>Chapter 30: Digestion, Nutrition, &amp; Elimination</b> <b>Chapter 31: Animal Development</b> <b>Chapter 32: Human Reproduction</b> <b>Chapter 33: Populations in Ecology</b> <b>Chapter 34: Communities</b> <b>Chapter 35: Ecosystems &amp; Biomes</b>
<b>Web Animations &amp; BioFlix</b>	See Text Webpage ( <a href="http://www.aw.com/krogh4">www.aw.com/krogh4</a> ) to view animations by chapter. <b>Discovery Videos:</b> Nutrition (Ch. 30), Rain Forests (Ch. 35)
<b>Laboratory Assignments</b>	<b>Lab 12: Chemical Digestion (Physio-Ex CD)</b> (complete after reading chapter 30) <b>Lab 13: Human Sperm Counts</b> (complete after reading chapter 17)
<b>Quizzes</b>	<b>Quiz 15:</b> covers chapter 30 <b>Quiz 16:</b> covers chapter 31-32 <b>Quiz 17:</b> covers chapter 33-35
<b>Discussions</b>	<b>Discussion Topic 5: Population Growth</b> <b>** Post your first post by 4/25**</b>
<b>Exam</b>	<b>UNIT EXAM 5: will be available from Wednesday 5/5 to Tuesday 5/11</b>