

## General Biology

## BIOL 100

**MW 9:00-9:50**

**Instructor:**

Adam M. Hott, M.S.

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**Office:**

CL 270A

**Phone:** 285-8854

**Office Hours:**

Mon 10-11, Thrs 9-10

Others by Appt.

**Course Goal:**

This is a general biology course specifically designed for non-science majors. We will be concentrating on areas of biology that are relevant to today's societal concerns. The goal of this course is to familiarize you with the concepts of biology and how it affects **your** everyday lives.

**Course Objectives:**

- 1- Students will be able to compare and contrast living vs. non-living things
- 2- Students will be able to discuss the environmental impacts caused by humans
- 3- Students will be able to describe how a population grows and how that growth is regulated
- 4- Students will be able to discuss the relationship between cellular structure and function
- 5- Students will be able to relate mitosis and meiosis to sexual and asexual reproduction
- 6- Students will be able to determine simple Mendelian inheritance patterns
- 7- Students will be able to describe complex inheritance patterns
- 8- Students will be able to decipher pedigrees for inheritance patterns
- 9- Students will have an appreciation and understanding of chromosomal anomalies
- 10- Students will be able to calculate genotypic and allelic frequencies and account for evolution
- 11- Students will be able to describe human reproduction cycles for both males and females
- 12- Students will be able to describe modern human reproductive technologies
- 13- Students will understand and appreciate advances in modern biotechnology
- 14- Students will be able to comprehend and evaluate modern media representations of biology research

**Texts:**

Mader, S. *Inquiry into Life*, 10<sup>th</sup> edition. McGraw-Hill. 2003.

Rogers, B. *Biology 100 Laboratory Guide*. Hayden-McNeil Publishing, Inc. 1999.

### **Attendance Policy:**

Attendance will be taken at every meeting. This includes lectures as well as laboratory periods. You will be signing up for a seat in lecture during lab the first week. You are expected to be on time to class for both lecture and lab. If you are not present by the first 15 minutes of class, you will be counted as absent. Excessive absenteeism will be dealt with on an individual basis and may result in a lowered grade. Attendance in class is the only way to achieve in this class. Please be responsible and come to class.

### **Grading:**

Your grade will be determined on the university set 90, 80, 70, 60-grade scale. The +/- system **will** be used in the course. Examination scores and other lecture assignments will determine approximately 2/3 of the course grade. The other 1/3 will be accounted for by the quizzes, assignments, and lab reports from the laboratory period. Your grade will be determined using the below scales.

<b>Exam 1:</b>	100 points
<b>Exam 2:</b>	100 points
<b>Exam 3:</b>	100 points
<b>Exam 4:</b>	100 points
<b>Lecture Assignments:</b>	<u>15 points</u>
<b>Total:</b>	<b>415 points</b>

### **Structure:**

The structure of the course depends greatly on the students. There will be many times in class that small groups will be formed to discuss certain topics. A large group discussion involving all students in class will also take place on a regular basis. The class will **not** always undertake the classical lecture style of a course. Each student is expected to come to class with the expectation that he/she will participate in a variety of learning opportunities.

### **Class Philosophy:**

The material covered in this course can only be presented to the best of my ability, requiring the student to be engaged in his/her own learning. To put it simply, **you will get out of the class what you put into the class.**

### **Late or Missing Work/Exams:**

If you must miss an exam, you must contact me ([amhott@bsu.edu](mailto:amhott@bsu.edu)) prior to the time of the class you will miss. You may contact me by email (the best way) or by leaving a message at 285-8812. Please be sure to leave your name and section number. Makeup exams will only be given one week following the scheduled exam day. If the makeup exam has not been taken within one week, a grade of 0 will be assigned. Makeup exams will be more difficult, so it is in your best interest to take the exam on the day scheduled.

### **Class Policies and Regulations:**

There should be no reason that beepers or cellular phones are brought into a classroom. Because there is no efficient way to ensure that these disruptions are not brought into the classroom, students are asked to turn off cell phones and beepers while in the classroom. These can be very disruptive not only to the owner but also to everyone in the classroom.

Talking in class at certain times is a very constructive and useful way to communicate ideas about the course topics. Talking during class at inappropriate times disrupts all students in the area and can make it very difficult for the information being covered to be communicated efficiently. Disruptive talking during class will be addressed at that time. If the disruption continues or becomes a constant problem, action will be taken to remove the cause of the disruption from the class permanently.

Academic dishonesty, plagiarism, cheating or copying material that is not your own will be dealt with in two ways. The first time academic misconduct is discovered, **all students involved** will receive a 0 for the assignment or exam. If a second occurrence is discovered, both instances will be taken to the dean and the actions set forth in the Student Code of Conduct for Ball State University will be followed. This is a serious offense and it will not be tolerated in this course.

Respect is a necessity when working in any group environment. I will give each student the utmost respect and courtesy that he or she deserves. I expect in return only the same. We will be discussing many issues that may facilitate personal feelings and sharing of personal beliefs. We will all be respectful of each individual's opinion and there will be no attacking of personal ideas or beliefs. We will maintain respect for everyone in the class. If a respectful relationship is maintained, the class will run much more smoothly which will benefit all who are involved. If there are individual questions or problems feel free to see me at anytime during the semester to discuss these issues.

### **Special Needs**

If you have special circumstances that need to be brought to my attention, please do so at the beginning of the quarter. I will be happy to make any accommodations necessary.

### **Final Comments**

All information contained here is subject to change according to the pace and expectations of the class, or at the instructor's discretion. I hope to have a meaningful and successful quarter.

<b>Date</b>	<b>Topic</b>	<b>Chapters</b>
1/6	Introduction, The Process of Science	1
1/8	Characteristics of Life	1
Lab	<i>Lab does not meet</i>	
1/13	The History and Diversity of Life	1,27
1/15	Cells: An Overview	3,6,7,8
Lab	Biological Kingdoms	
1/20	<b>No Class MLK Jr. Day</b>	
1/22	Cell Functions	3,6,7,8
Lab	Microscopy, Cell Structure ( <b>Lab Quiz</b> )	
1/27	Cell Membranes: Structure and Functions	4
1/29	Cell Cycles, Mitosis	5
Lab	Cell Structure, Cell Functions ( <b>Lab Quiz</b> )	
2/3	Life Cycles, Meiosis	5
2/5	<b>Exam 1</b>	
Lab	Scientific Method	
2/10	Chromosomal Inheritance, DNA Structure	24
2/12	Reproduction, Human Reproduction	21
Lab	Reproduction, Development	
2/17	Human Reproduction	21
2/19	Human Development	22
Lab	Modern Biology: Ethical Considerations	
2/24	Assisted Reproductive Technologies	21
2/26	<b>Exam 2</b>	
Lab	System of International Units	
3/3	Biotechnology: Processes & Considerations	26
3/5	Biotechnology: Processes & Considerations	26
Lab	Human Genetics ( <b>Lab Quiz</b> )	

<b>Date</b>	<b>Topic</b>	<b>Chapters</b>
<i>3/10-3/14</i>	<i>Spring Break No Class</i>	
Lab	<i>Lab does not meet</i>	
3/17	DNA Structure, Gene Expression/Regulation	25
3/19	Patterns of Inheritance	23
Lab	Population Genetics	
3/24	Population Genetics, Natural Selection	27
3/26	Process of Evolution	27
	Bacteria	
3/31	Infectious Disease	28
4/2	<b>Exam 3</b>	
Lab	Bacteria	
4/7	Infectious Disease, Defenses Against Disease	28,14
4/9	Defenses Against Disease	14
Lab	Ecosystems/Indiana's Woodlands ( <b>Lab Quiz</b> )	
4/14	How Do Ecosystems Work?	34
4/16	Human Ecology, Environmental Concerns	34
Lab	Environmental Biology	
4/21	Human Ecology, Environmental Concerns	34
4/23	Population Growth and Regulation	33
Lab	Environmental Biology	
4/30	<b>Final Exam/Exam 4 (9:45-11:45)</b>	