



Major Concepts of Biology
The University of Toledo
College of Natural Science and Mathematics
BIOL2010-002 CRN 60749

Instructor:	Dr. Sally E. Harmych	Term:	Fall 2015
Email:	sally.harmych@utoledo.edu	Class Location:	SM2110
Office Hours:	M/W 1:00-3:00 pm T/R 9:00-10:00 am	Class Day/ Time:	MW 3:30–4:45pm
Office Location:	WO1235K		
Office Phone:	419.530.4585	Credit Hours:	3

COURSE/CATALOG DESCRIPTION

This course will discuss topics related to the major concepts of biology such as evolution, the cell, the gene and homeostasis. This course is designed for students majoring in science, engineering or other fields that require biology as a prerequisite who have not had sufficient preparation to begin Fundamentals of Life Science I or II (BIOL 2150 or BIOL 2170).

STUDENT LEARNING OUTCOMES

Students who successfully complete this course will be able to:

- Generate a hypothesis from a set of observations and then design experiments to test the hypothesis.
- Describe the structure and function of prokaryotic and eukaryotic animal and plant cells.
- Describe the processes of cell communication.
- Outline the structure of proteins, nucleic acids, lipids and carbohydrates.
- Explain the flow of genetic information in the cell from DNA to RNA to proteins.
- Explain patterns of inheritance and describe the processes of mitosis and meiosis.
- Describe how natural selection has resulted in the diversity of life on earth.
- Explain the processes by which animals maintain homeostasis by monitoring the internal and external environments.

**Students are expected to gain a foundational level of understanding that will allow the students to be prepared for success in the major's biology Fundamentals of Life Science series.

TEACHING STRATEGIES

I expect that since you are taking this course you are interested in learning about the subject of biology. The best way to be successful is to read the text, attend lecture, take notes and do your online assignments. It is helpful if you read the text before attending lecture. When you come to lecture it is expected that your focus will be on the material covered, not your cell phone, latest email or Facebook postings, or today's news headlines. During lecture I will outline the subject matter and cover key points. In addition, attending lecture gives you an opportunity to ask questions about the material and helps me know when you are having difficulties. What is covered in lecture is much more likely to be seen on exams. I encourage you to ask questions if you are having difficulty. You can also ask me questions directly after class, during office hours, via email or over the phone. I am here to help you be successful, but I cannot do that if you do not ask.

PREREQUISITES AND COREQUISITES

None

REQUIRED TEXTS AND ANCILLARY MATERIALS

Principles of Biology with Sapling Access from Nature Education, MacMillian
(<http://nature.com/principles>)

- Access Card 9781942310761
Turning Technology's Response Card RF either 9781934931691 or 9781934931684



TECHNOLOGY REQUIREMENT

Turning Technology's Response Card RF either 9781934931691 or 9781934931684
Powerpoint
Principles of Biology with Sapling Access
Blackboard Access

UNIVERSITY POLICIES

The University is an equal opportunity educational institution. Please read The University's Policy Statement on Nondiscrimination on the Basis of Disability Americans with Disability Act Compliance (http://www.utoledo.edu/policies/administration/diversity/pdfs/3364_50_03_Nondiscrimination_o.pdf)

ACADEMIC ACCOMMODATIONS

The University of Toledo is committed to providing equal access to education for all students. If you have a documented disability or you believe you have a disability and would like information regarding academic accommodations/adjustments in this course please contact the Student Disability Services Office at (419)530-4981 or through the UT website at <http://www.utoledo.edu/offices/student-disability-services/index.html>

CLASSROOM EXPECTATIONS

Please bring a **#2 pencil, an eraser and your valid UT student ID card** to each examination. No student will be permitted to take the exam without proper identification.

Examinations start and end at specified times. Under no circumstances will students be admitted to an exam after the first student has left the exam. Extra time will not be given for students that show up late. If you must miss an exam you must contact me within 24 hours to schedule the make-up exam. When we meet you must have a written excuse. If proper documentation is not provided then the missed exam will be scored as your lowest exam score for the semester. If you know in advance that you must miss an exam for a legitimate reason then please see me to schedule an early exam.

Group Work: Students will be collaborating throughout the semester on in-class projects with other students. When working in a group it is expected that all students in the group will contribute and participate.

GRADING

Students will be assessed based on their performance on midterm exams, a final exam and in-class and online work as outlined below.

Midterm exams	40%
Final exam	20%
In-class work and assignments	30%
Online homework	10%

Midterm exams: Students will be given 4 midterm exams worth 100 points each. The exams will be worth 40% of the final grade. The lowest midterm score will be dropped at the end of the semester.

Final Exam: The final exam will be comprehensive and will count for 20% of the grade. This exam will consist of 75 multiple choice questions worth 2 points each and will be worth 150 points.

In-class work and assignments: This portion of the grade will include in-class group assignments as well as clicker points. Students will be divided into class groups by the instructor at the beginning of the semester. These groups will be asked to work together on in-class assignments and discussions over the material. Assignments will include both group assignments that all members of the team will contribute to as well as individual assignments. Each team member is expected to take an active part in

the work that is assigned and will be asked to sign a contract with the other members of the team. Members of a team will be asked to assess each other's contributions to the work throughout the semester. These assignments and clicker points will be worth 30% of the final grade.

*****DEADLINE TO REGISTER CLICKERS IS SUNDAY, AUGUST 30 AT NOON*****

Online Homework: Students will be assigned material to read before each class meeting. This information can be found in the Topic Schedule below. It is the student's responsibility to look ahead on the schedule and see which module we will be covering in the next class so they can read the material. In addition to reading, students will be assigned a short online quiz to complete before each class over the material that will be covered that day. These quizzes will be worth 10 points each and need to be completed before walking into lecture for that day. The online homework will be worth 10% of the final grade.

Final Grade Calculation: Your final grade will be calculated from a combination of In-class work and assignments (30%), your online homework (10%), the **best three (3)** of four (4) midterm exams (40%) and the final comprehensive exam (20%)

*****Academic dishonesty may lead to failure of this course. Read the University policy about this subject*****

Grading Scale: Exams will be scored as % correct points, which will correspond to a letter grade according to the table below. This scale is based on the assumption that knowledge of more than 50% of the material is needed to pass this course.

<u>GRADE</u>	<u>% CORRECT</u>	<u>GRADE</u>	<u>%CORRECT</u>
A	90 – 100	C	67 - 70
A-	87 – 89	C-	63 - 66
B+	83 – 86	D+	59 - 62
B	79 – 82	D	55 - 58
B-	75 – 78	D-	51 – 54
C+	71 – 74	F	0 - 50

*****Any student listed in the course after NOVEMBER 20 can only receive a grade of A – F.**

Any student who stops attending class after taking the first exam will receive a grade of F for all the missed exams, ***unless that student withdraws from the course by NOVEMBER 20.***

I will only assign **IN** grades in extraordinary cases when unexpected conditions prevent a student from completing the course within the term of enrollment. An IN grade must be removed by the end of the following semester.



Schedule of Lectures (Schedule is subject to change. Any changes will be announced in class)

Week	Date	Topic	Module
1	August 24	Intro to Course and Overview	
	August 26	Practicing Biology	3
2	August 31	Atoms, Elements and Matter	4
	September 2	Structure of Molecules and Compounds	5
3	September 7	No Classes - Labor Day	
	September 9	Carbohydrates and Lipids	8, 9
4	September 14	Proteins and Nucleic Acids	10, 12
	September 16	Exam 1 (Modules 1, 2, 3, 4, 5, 6, 7)	
5	September 21	Cells & Eukaryotic Cells	13, 14
	September 23	Cell Membranes	17
6	September 28	Cell Division (mitosis)	32
	September 30	Cell Division & Cell Cycle Control	33
7	October 5	No Classes - Fall Break	
	October 7	Meiosis & Sexual Reproduction	36
8	October 12	Exam 2 (Modules 8, 9, 10, 11, 12, 13)	
	October 14	Mendel's Principles and Inheritance	37, 38
9	October 19	Mendel's Principles and Inheritance	37, 38
	October 21	DNA Replication	45
10	October 26	Gene Expression	48
	October 28	Gene Expression	48
11	November 2	Exam 3 (Modules 14, 15, 17, 18)	
	November 4	Animal Structure and Function	123
12	November 9	Homeostasis and Thermoregulation	124, 125
	November 11	No classes - Veteran's Day	
13	November 16	Nervous systems and Action potentials	126, 127
	November 18	Nervous systems and Action potentials	126, 127
14	November 23	Hormones as signaling molecules	137
	November 25	Hormones and the body	138
15	November 30	Exam 4 (Modules 19, 20, 21, 22, 23, 24, 25)	
	December 2	Osmoregulation and the Nephron	154, 156
16	December 7	Osmoregulation and the Nephron	154, 156
	December 9	Final Review Day	
	December 15	Final Exam: 2:45-4:45 PM, SM2110 (Tuesday)	



Policy Statement on Academic Dishonesty

Academic dishonesty will not be tolerated. Among the aims of education are the acquisition of knowledge and development of the skills necessary for success in any profession. Activities inconsistent with these aims will not be permitted. Students are responsible for knowing what constitutes academic dishonesty. If students are uncertain about what constitutes plagiarism or cheating they should seek the instructor's advice. Examples of academic dishonesty include, but are not limited to:

- Plagiarizing or representing the words, ideas or information of another person as one's own and not offering proper documentation;
- Giving or receiving, prior to an examination, any unauthorized information concerning the content of that examination;
- Referring to or displaying any unauthorized materials inside or outside of the examination room during the course of an examination;
- Communicating during an examination in any manner with any unauthorized person concerning the examination or any part of it;
- Giving or receiving substantive aid during the course of an examination;
- Commencing an examination before the stipulated time or continuing to work on an examination after the announced conclusion of the examination period;
- Taking, converting, concealing, defacing, damaging or destroying any property related to the preparation or completion of assignments, research or examination;
- Submitting the same written work to fulfill the requirements for more than one course.

While academic integrity is particularly the responsibility of the student, the faculty members also have a responsibility. Assignments and tests should be constructed and proctored so as to discourage academic dishonesty. Faculty members are expected to inform their students explicitly as to what materials and procedures are authorized for use in the preparation of assignments or in examinations (e.g., the use of calculator, computer, text materials, etc.). Should cases of academic dishonesty be found among students, the instructor may choose to counsel the student, or the following sanctions may be imposed:

- The student may be assigned an F for the work in question.
- The student may be assigned an F for the course. In this case the instructor should inform the Dean and the student of this action. The Dean will make certain that the student receives the F grade and is not permitted to withdraw from the course.
- The student may be placed on probation or suspended for some definite period of time, dismissed or expelled by the Dean if either the seriousness of the offense or a record of repeated offenses warrants it. A notation that such a sanction has been imposed will be made part of the student's permanent record. It is expected that the Dean will consult with the instructor and the student in making such a judgment, and that the Dean will notify the student of the sanction imposed and of the appeals procedure.

A student found to be academically dishonest by a faculty member may appeal according to procedures approved by the respective colleges. The procedures for making a final appeal to the Student Grievance Committee may be found in the Student Handbook.

Principles of Biology Enrollment Instructions

1. Go to saplinglearning.com and click on the **Higher Ed** option for your country at the top right.
2. Log in with your existing account or click **Create an Account**.
 - If you have a Facebook account, you can use it to quickly create a Sapling Learning account. Click Create my account through Facebook. You will be prompted to log into Facebook if you aren't already. Choose a username and password, then click Link Account.
 - Otherwise, supply the requested information and click Create My Account. Check your email (and spam filter) for a message from Sapling Learning and click on the link provided in that email. If you don't get the email within 30 minutes, contact support@saplinglearning.com.

**** Make sure you use your University of Toledo email when signing up****

3. Look for the gray bar entitled **Enroll in a new course**.
4. Click on your subject to expand the menu.
5. Click on the term to expand the menu further (**note** that Semester 1 refers to the first course in a sequence and not necessarily the first term of the school year).
6. Once the menus are fully expanded, you'll see a link to a specific course. If this is indeed the course you'd like to register for, click the link. Otherwise, continue expanding the other menus until you locate the correct link and click it.
7. You may be asked to enter a **Key code**, which is not the same thing as an **Access Card Code** from a scratch-off card. The key code (if necessary) should have been provided to you by your instructor.
8. Pay if necessary. Most courses require payment using a credit card, a PayPal account, or an **Access Card Code** (<http://www2.saplinglearning.com/help/how-do-i-enter-code-my-scratch-card>) from a scratch-off card purchased at your bookstore. In some cases, you may have additional options to [enter the course for free for x days](#) or to use your [Sapling Learning credit](#).

When you return from paying, you will be enrolled in your course. If your credit card is not accepted or you have other difficulties with the payment process, contact [PayPal customer service](#) (they handle all of our payments, including credit cards).

Once you have registered and enrolled, you can log in at any time to complete or review your homework assignments. If you have any problems, send an email to support@saplinglearning.com explaining your issue.