

# **BIO1030 Biology Today**

## **Course Syllabus**

### **Winter Semester, 2020**

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#### **CLASS MEETING LOCATION**

1109 Science Hall

#### **CLASS MEETING TIME**

Tuesday and Thursday, 10am – 11:15am

#### **COURSE DESCRIPTION AND OBJECTIVES**

Challenges to modern society from population growth, new diseases, environmental degradation, urban pollution; medical advances and ethical dilemmas in decoding human genome; impact of biological findings on political and personal decisions; issues considered in context of principles and strategies of modern biological research.

Starting with basic concepts of biology, we will advance to understanding more complex topics relevant to modern society. The objective is to provide non-science major students with a broad-based and fundamental understanding of the basic biology relating to biodiversity, relationships that exist between all life forms from the prokaryotic to eukaryotic systems.

#### **Students will be able describe:**

1. How **science is based on evidence** and makes predictions and interpret biological data **qualitatively, quantitatively, and with graphs.**
2. How **structures** of molecules, cells and tissues relate to their **functions**
3. How **information** flows in cells, from DNA to RNA to proteins, and in the mitotic and meiotic cell cycles.
4. How **energy and matter are transformed** in cellular respiration and photosynthesis.
5. How the components of cells interact as **systems** to generate emergent properties
6. How biological information can be **modified by mutations** and **biotechnology.**
7. How inheritance and mutations are critical for **evolution.**
8. How **microorganisms** impact on **technology** and **health.**
9. How science informs the decisions of a **society**, and how science, such as biological engineering, creates opportunities that require informed citizens and policies.

Course assignments will illustrate the impact that human populations can have on altering biosystems that we share with other organisms. Following this course it is expected that students will have an increase in understanding of what Biology is, and a greater appreciation of how their personal, political, ethical choices can have an enormous global impact.

#### **COURSE PREREQUISITES**

There are no prerequisites for this course. This course is designed for non-science majors.

## OFFICE HOURS

Days and times: **Tuesday and Thursday 1:30 – 3:00 (may adjust days and time) in room 5107 Biological Sciences Bldg.** Office hours will be held only on those days when Wayne State University is open.

A mutually convenient appointment at other times may also be arranged by emailing Dr. Fan at: **cfan@wayne.edu**. Dropping in unannounced may work on occasion but will not be successful and students may be asked to wait and/or to come back at some appointed time. Dr. Fan will be happy to help students learn the material they are having trouble understanding. However, **office hours are NOT a substitute for lectures**. In addition, students are welcome to e-mail Dr. Fan for questions or comments. Emails are generally answered within 24 hours.

## EXAMS

There will be four (4) 75-minute Midterm Lecture Exams and a Final Exam. All exams are multiple choice questions. Final exam will be comprehensive, i.e. it will cover material presented in the entire course. I will show you how to calculate your grade to determine your standing in the class at all times. **If at any time you drop below 68% (C-) average, please make a point to come and see me to discuss your progress in the class.**

If you miss an exam, there are no makeup exams **under any** circumstances. **So don't ask!!!!!!**

## COURSE CREDITS

This is a 3 credit course for both non-honors (20987) and honors (20265) students.

## TEXT BOOK AND LECTURE SLIDES:

**Textbook (Required):** Essentials of Biology by Mader and Windelspecht 5<sup>th</sup> Edition 2018. ISBN10: 1259660265. ISBN13: 9781259660269. McGraw-Hill Education.

Lecture slides: Every effort will be made to provide the lecture slides on Canvas sometime before the class meets. I recommend that you look over slides, and print handouts to bring to class.

## EXAM DATES

**EXAM I - Thursday, January 30, 2020**

**EXAM II - Thursday, February 27, 2020**

**EXAM III - Thursday, March 26, 2020**

**EXAM IV - Thursday, April 16, 2020**

The **Final Exam** will be held on **Tuesday April 28<sup>th</sup> at 8:00am – 10:00am** in **1109 Science Hall**. NOTE THAT THE ROOM IN WHICH THE FINAL EXAM WILL BE HELD IN IS THE SAME AS THE REGULAR CLASS ROOM. The final exam is scheduled as designated in the Schedule of Classes for this term

([https://wayne.edu/registrar/scheduling/final\\_exam\\_schedule\\_winter\\_2020.pdf](https://wayne.edu/registrar/scheduling/final_exam_schedule_winter_2020.pdf)). No other time for the final exam will be available, and **no exceptions** will be made for conflicts such as student travel plans.

## EXAM FORMATS

All exams are **Multiple Choice** questions. All exams will be closed book and held in class. All you will need is a few sharp pencils. No electronic devices of any kind will be allowed unless indicated otherwise in advance, and cell phones and pagers must be turned off. Anyone who leaves the exam room will not be allowed back in. Late-arriving students should know that admittance into the exam room will

not be allowed after the first student has left the room. Scantron forms will be supplied if required. **Do not bring your own scantron forms to the exam as you will not be allowed to use them.**

There will be four **75 minutes midterm** lecture exams. Each midterm exam will be worth 160 points. The final exam will be 120 minutes and worth 220 points

## GRADING

For each student, the midterm with the lowest numerical score will be dropped. If a midterm is not taken, that exam will receive a score of 0 (zero) and may be dropped. Only one midterm will be dropped, even if two or more exams are missed. Each midterm exam will be worth 160 points.

The final exam is worth 220 points and will be comprehensive, i.e. it will cover material presented in the entire course. The final exam is mandatory and is not one of the dropped scores. Individual lecture exams may or may not be curved. Overall course scores will not be curved. Course grades will be determined from total point accumulation at the end of the semester.

The total point distribution is as follows:	
Midterm Exams 3 x 160	480
Final Exam	220
Total	700

*There is no extra credit under any circumstances. Scores will not be “rounded up” when assigning grades.*

The final letter grade will be determined by a straight score as follows:

<u>Total Points</u>	<u>% of available marks</u>	<u>Final Grade</u>
637-700	91-100	A
616-636	88-<91	A-
595-615	85-<88	B+
574-594	82-<85	B
546-573	78-<82	B-
525-545	75-<78	C+
504-524	72-<75	C
476-503	68-<72	C-
455-475	65-<68	D+
434-454	62-<65	D
406-433	58-<62	D-
<405	<58	F

Students with course scheduling conflicts for any midterm exam must notify Dr. Fan in writing by class time on Wednesday, January 15, 2020. No make-up exams will be given unless he is notified in writing by class time on this date. Reasonable exceptions will be granted in cases of illness which will require notification **at least 24 hours prior to the exam** and must be followed up with an original signed note from a physician within five days. No make-up exams will be provided due to court cases or other non-academic scheduling issues, except for religious holidays as described below.

Class participation and attendance are strongly encouraged but will not be graded. There is no extra credit under any circumstances. Exam grades will be posted on Canvas your Student ID number as soon as possible after the exam has been administered.

## EXAM GRADE DISPUTES / CHALLENGE OPTION

Students will have one (1) week after the return of an exam or a written assignment to challenge a grade for any question. Failure to challenge the grade within this period indicates a willingness to accept the grade as is. The challenge should consist of a written description of why the answer is correct based on other published material that you cite. It is not an opportunity to complain.

## **CHEATING**

A strict **zero-tolerance** policy for cheating will be enforced. Anyone caught cheating on an exam will receive a score of 0 (zero) for that portion of the grade. Students found to be cheating during an exam (using a “cheat sheet”, looking at another’s paper, or allowing another to look at yours), will receive a zero for that test with no opportunity to drop or replace that score. A second episode of cheating will result in a grade of F for the course and may also result in initiation of university disciplinary action.

Professional behavior is expected in lecture, which includes respecting your classmates by arriving on time, **turning off cell phones and not talking**, not eating or drinking during class. All students must show respect in language and attitude towards the instructors and their fellow students. You are encouraged to discuss differences of opinion with each other, respectfully, but not during lecture, as this would be distracting to your fellow students and to the instructor as well.

Another word on cell phones- if a cell phone rings **during an exam**, the owner of the cell phone will be asked to hand in his/her exam and leave the room. **TURN OFF YOUR PHONES (OR, BETTER YET, DO NOT BRING THEM AT ALL) BEFORE EXAMS OR RISK EARNING A ZERO ON YOUR EXAM!!!! OTHER ELECTRONIC DEVICES (IPODS, COMPUTERS, CAMERAS, CALCULATORS, ETC.) MAY NOT BE PRESENT DURING EXAMS, AND IF SEEN THEY WILL BE CONFISCATED ALONG WITH THE EXAM.**

## **POSTING OF EXAM GRADES**

Scored exam grades will be posted on Canvas by Student ID Number as soon as possible after the exam has been administered. The distribution of scores will also be provided in class.

## **SPECIAL CONSIDERATIONS FOR INDIVIDUALS WITH DISABILITIES**

If you have a physical or mental impairment that may interfere with your ability to complete the requirements for this course successfully, you are invited to contact Educational Accessibility Services (1600 David Adamany Library; 577-1851) to discuss appropriate accommodations on a confidential basis.

## **RELIGIOUS HOLIDAY CONFLICTS**

If you have a conflict with any of the scheduled class or exam times due to religious reasons, you must notify Dr. Fan in writing by class time on by class time **two weeks before the scheduled exam**. No make-up exams will be given unless s/he is notified in writing by this date.

## **ADD/DROP POLICY**

**Add forms will not be signed after Monday January 20, 2020, the second week of class. Drop forms must be submitted to the Registrar before the end of Friday January 17, 2020 to get tuition cancellation.** Wayne State has changed the grading policy. There are no more "X" grades. If you sign up for a class, stop attending, and fail to withdraw, you will receive an F for the course. In addition, if you drop the course after 5 weeks, you will be assigned one of the following three marks: WP (withdrew but was passing at the time), WF (withdrew but was failing at the time), WN (withdrew and never attended class or no graded work). Also, any "I" given to a student will automatically revert to "F" if the work is not completed within one calendar year. There are no exceptions. Further information on the grading policy can be found at <https://reg.wayne.edu/students/policies>.

## **SCHEDULE OF TOPICS COVERED**

Some topics may require more or less time to cover than indicated on this schedule, so the actual topics covered on given days are subject to change depending on the rate of progress. Dates of exams and holidays are **NOT** flexible.

<b>Date</b>	<b>Day of the week</b>	<b>Book Chapter</b>	<b>Topic</b>
01/07/20	Tuesday	1	Biology: The science of Life
01/09/20	Thursday	2	The Chemical Basis of Life
01/14/20	Tuesday	3	The Organic Molecular of Life
01/16/20	Thursday	4	Inside the Cell
01/21/20	Tuesday	5	The Dynamic Cell
01/23/20	Thursday	6	Energy for Life
01/28/20	Tuesday	7	Energy for Cells
<b>01/30/20</b>	<b>Thursday</b>	<b>Midterm exam #1</b>	
02/04/20	Tuesday	8	Cellular Reproduction
02/06/20	Thursday	8	Cellular Reproduction
02/11/20	Tuesday	9	Meiosis and the Genetic Basis of Sexual Reproduction
02/13/20	Thursday	9	Meiosis and the Genetic Basis of Sexual Reproduction
02/18/20	Tuesday	10	Pattern of Inheritance
02/20/20	Thursday	10	Pattern of Inheritance
02/25/20	Tuesday	11	DNA Biology
<b>02/27/20</b>	<b>Thursday</b>	<b>Midterm exam #2</b>	
03/03/20	Tuesday	11	DNA Biology
03/05/20	Thursday	12	Biotechnology and Genomics
03/10/20	Tuesday	Spring break	
03/12/20	Thursday	Spring break	
03/17/20	Tuesday	13	Genetic Counselling
03/19/20	Thursday	13	Genetic Counselling
03/24/20	Tuesday	14	Darwin and Evolution
<b>03/26/20</b>	<b>Thursday</b>	<b>Midterm exam #3</b>	
03/31/20	Tuesday	15/16	Evolution on a Small Scale/Evolution on a Large Scale

04/02/20	Thursday	17	The Microorganisms: Virus, Bacteria, and Protists
04/07/20	Tuesday	26	Defenses Against Disease
04/09/20	Thursday	32	Human Impact on the Biosphere
04/14/20	Tuesday		Honor Special Topics
04/16/20	Thursday		<b>Midterm exam #4</b>
04/28/20	<b><u>Tuesday</u></b>		<b>Final Exam (8:00 p.m. to 10:00 p.m.), in the same room as class is held.</b>

### UNEXPECTED UNIVERSITY CLOSURES.

If the University is officially closed on an exam day, the exam will be held on the next regularly scheduled class day. Closure of the University is announced by the following mechanisms:

1. the University Newsline (313) 577-5345 \*
2. WSU Homepage ([www.wayne.edu](http://www.wayne.edu)) \*
3. WSU Pipeline ([www.pipeline.wayne.edu](http://www.pipeline.wayne.edu)) \*
4. WDET-FM (Public Radio 101.9)
5. by other local radio and television stations

\* Note: The information on closures and class cancellations is likely to be found at these locations before it is broadcast by local radio and television stations

### OTHER

I am happy to write letters of recommendations for students who earn a grade of A. Please turn all cell phones off during class and during exams.

Any specific issue not covered by this syllabus will be resolved using University policies. Disputes that cannot be resolved following the guidelines present in this syllabus will be resolved by following the guidelines of the University "Student Due Process".