

# BIO1030 Biology Today

## Course Syllabus

### Winter Semester, 2021

Instructor: Dr. Chuanzhu Fan  
Virtual Synchronous Zoom  
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#### CLASS MEETING LOCATION

Synchronous virtual lecture via Zoom

#### 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 medicine, 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** and **genetic diseases**.
8. How cell division, metabolism and environment induce tumorigenesis and **cancers**
9. How **microorganisms** impact on **technology** and **health**.
10. How **infectious diseases** spread, transmit, and impact communities.
11. How vaccines are pivotal to control the **pandemic** of infectious diseases
12. 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.

#### PRIVACY AND CONFIDENTIALITY RULES

The University's shift to remote teaching has created some new privacy and confidentiality concerns. Recordings of classes taught via Zoom may capture students saying things they consider embarrassing. Zoom recordings often include views of the inside of students' residences, which many students consider to be private. Students have the right to be confident that video, audio, and still images of class sessions will not be viewed by anyone other than those who are enrolled in the course. To preserve the integrity of the course when it is taught in future semesters, the contents of quizzes and other class materials must be kept confidential.

For these reasons, every student enrolled in the course must agree to the following set of rules aimed at protecting privacy and confidentiality.

If you feel that you need to make your own recordings of class sessions, please contact me so we can discuss your situation individually.

You agree that you will adhere to the following rules in connection with your participation BIO1030 Biology Today Winter 2021.

1. I will not record the audio or video of any online class session.
2. I will not take a screenshot of any screen displayed as part of any online class session.
3. I will not share any audio, video, or still image from an online class session with anyone who is not a student enrolled in the class.
4. I will not share any material from lectures, quizzes and exams with anyone who is not a student enrolled in the class.
5. I will not share any recording of a class session made by the professor with any other person.

## **COURSE PREREQUISITES**

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

## **OFFICE HOURS**

Office hours via Zoom meeting is arranged by appointment only. By emailing Dr. Fan at: [cfan@wayne.edu](mailto:cfan@wayne.edu), Dr. Fan will arrange mutually convenient zoom meeting. 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 zoom meeting 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 three-credit course for both non-honors (22806) and honors (20211) students.

## **TEXT BOOK AND LECTURE SLIDES:**

**Textbook (Required):** Essentials of Biology by Mader and Windelspecht 6<sup>th</sup> Edition 2020. **ISBN-13:** 978-1260087321, **ISBN-10:** 1260087328. 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 before the zoom class.

## EXAM DATES

**EXAM I - Tuesday, February 02, 2021**

**EXAM II - Tuesday, March 02, 2021**

**EXAM III - Tuesday, March 30, 2021**

**EXAM IV - Tuesday, April 20, 2021**

The **Final Exam** will be held on **Tuesday May 04<sup>th</sup>, 2021 at 8:00am – 10:00am**. The final exam is scheduled as designated in the Schedule of Classes for this term ([https://wayne.edu/registrar/scheduling/final\\_exam\\_schedule\\_winter\\_2021.pdf](https://wayne.edu/registrar/scheduling/final_exam_schedule_winter_2021.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. 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 180 points

## ATTENDANCE

Attending every zoom lecture is strongly encouraged. To award your participation of the zoom class, attendance will be counted to assign points. The assignment of attendance points will be as below: >90% attendance: 40 points; >80% attendance: 30 points; >70% attendance: 20 points; >60% attendance: 10 points; <60% attendance: 0 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 180 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	180
Attendance	40
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 20, 2021. 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 two hours prior to the exam and must be followed up with an original signed note from a physician within three 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.

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**

No grade challenge will be administrated for multiple-choice exams including midterms and final exam.

### **CHEATING**

A strict zero-tolerance policy for cheating will be enforced. Anyone caught cheating on an exam in any aspect of this course will receive a score of 0 (zero) for that portion of the grade.

Students are found to be cheating during an exam (e.g. allowing another student to look at your paper, sharing answering keys, or using any electronic device to communicate with another person, etc.), 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 zoom virtual lecture, which includes joining zoom lecture promptly, muted your microphone during the entire lecture unless asking for question. 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.

### **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 may 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 25, 2021, the second week of class**. Drop forms must be submitted to the Registrar before the end of **Friday January 22, 2021 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). Only exams (midterms) points will be counted to assign for withdrawal grade. 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>
01/12/21	Tuesday	1	Biology: The science of Life
01/14/21	Thursday	2	The Chemical Basis of Life
01/19/21	Tuesday	3	The Organic Molecular of Life
01/21/21	Thursday	4	Inside the Cell
01/26/21	Tuesday	5	The Dynamic Cell
01/28/21	Thursday	6	Energy for Life
<b>02/02/21</b>	<b>Tuesday</b>	<b>Midterm exam #1</b>	
02/04/21	Thursday	7	Energy for Cells
02/09/21	Tuesday	8	Cellular Reproduction
02/11/21	Thursday	8	Cellular Reproduction
02/16/21	Tuesday	9	Meiosis and the Genetic Basis of Sexual Reproduction
02/18/21	Thursday	9	Meiosis and the Genetic Basis of Sexual Reproduction
02/23/21	Tuesday	10	Pattern of Inheritance
02/25/21	Thursday	10	Pattern of Inheritance
<b>03/02/21</b>	<b>Tuesday</b>	<b>Midterm exam #2</b>	
03/04/21	Thursday	11	DNA Biology
03/09/21	Tuesday	11	DNA Biology
03/11/21	Thursday	12	Biotechnology and Genomics
03/16/21	Tuesday	Spring break	
03/18/21	Thursday	Spring break	

03/23/21	Tuesday	12	Biotechnology and Genomic
03/25/21	Thursday	13	Mutations and Genetic Testing
<b>03/30/21</b>	<b>Tuesday</b>	<b>Midterm exam #3</b>	
04/01/21	Thursday	13	Mutations and Genetic Testing
04/06/21	Tuesday	15/16	Evolution on a Small Scale/Evolution on a Large Scale
04/08/21	Thursday	17/18	The Microorganisms: Viruses, Bacteria, and Fungi & Infectious diseases
04/13/21	Tuesday	26	Defenses Against Disease
04/15/21	Thursday	32	Human Impact on the Biosphere
<b>04/20/21</b>	<b>Tuesday</b>	<b>Midterm exam #4</b>	
04/22/21	Thursday		Honor presentation, Final overview
<b>05/04/21</b>	<b>Tuesday</b>	<b>Final Exam (8:00 p.m. to 10:00 p.m.)</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

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".