

## Bio2600: Introduction to Cell Biology

S21

### ON-LINE: Synchronous

MW 8:30-11 am

May 10 – June 28, 2021

Dr. M. VanBerkum

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577-5554

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**NOTE:** Both lecture and discussion sessions are being held synchronously on-line during designated lecture time period. Class exams, on dates indicated below, will occur synchronously during the normal lecture period or part thereof. Exams will require the use of a Lockdown Browser as well as a web camera.

**Description and Objective:** Cells are the fundamental unit of life. An in depth understanding of cells as living machines is important for all professional careers in the health sciences. This class will help you understand cells as living machines by looking closely at the structure and function of each of its major components. In many cases, the role of specific classes of proteins will be considered. Most topics cover all living cells - animal, plant and prokaryote - and, while the emphasis will be on animal cells, aspects unique to plant and prokaryotes will also be covered. The course is intended for Biology majors or other students in Allied Health professions seeking advanced knowledge and understanding of cell biology. It provides a solid foundation for most other biology, and neurobiology classes.

**Learning objectives:** This class covers A LOT of material; students claim in too much detail. Students tend to focus only on vocabulary, thereby learning a lot of “what’s” (names of basic components and molecules, etc). Yes, this is a good start, but to understand a cell we must also think about the “why, when, where and how” of cell structure *and* function. Cells are living machines - learn how it lives, by understanding the underlying principles and logic. Formally, upon completion of this course, students should be able to:

- (1) describe the basic structure of a eukaryotic cell and its different compartments (organelles)
- (2) integrate the relationship between an organelle’s structure and function within different cells
- (3) model how molecules necessary for an organelle’s function are routed to the correct organelle
- (4) depict the flow of information within a cell and between cells
- (5) predict outcomes when information flow within a cell or between cells is not correctly regulated
- (6) reconstruct how a cell grows, duplicates, and dies
- (7) create a dynamic model of a cell and its behaviors under different conditions.

**Prerequisites:** The Department of Biological Sciences is *strictly enforcing* the prerequisites for Bio2600. The prerequisites for this class are Bio1500 AND 1510 with a C- or better, or transfer of equivalent courses. If you do not meet these criteria, you **must** drop BIO2600. If you wish to discuss this policy contact a Biology departmental advisor, as I cannot alter the outcome. I do know that exceptions are rarely granted.

**Class Web Site:** Go to Academia and then to our Canvas web site (or bookmark Canvas site directly). The Canvas site is our major communication portal and includes links to textbook, Smartwork and all class exams. You will also be able to download PDF files of class PowerPoint Presentations showing most of the figures from the textbook. Superimposing your notes onto the figures is a great study tool forcing you to really look at the processes. If you have issues with access to Canvas, call the C&IT help desk, not the professor as I won’t be able to help you.

**Text:** Lectures are designed to re-enforce the textbook, not the other way around. The chosen, nationally recognized textbook does a great job of explaining how and why a cell works the way it does. As such, the textbook is **REQUIRED** reading: **Essential Cell Biology**, Fifth Edition, by B. Alberts, et al., [ISBN-13: 978-0393680362]. You must also have on-line access to the Publisher’s Smartwork platform. Through the WSU “First Day” program, you already have inclusive access to this material through Canvas. Links & explanations of this program are found in our Canvas site. You may opt out of this program, for example, if you already have a textbook, but in this case, you still have to purchase access to the Smartwork platform.

You are **strongly encouraged** to do the questions/problems interspersed throughout each chapter to self-evaluate yourself on what you know. Discover what you understand, and even better what you do not understand, before an exam; besides, variations of these questions appear on exams.

**Office hours:** Many of the synchronous sessions will be discussion of the material and thus provide a great avenue to ask cell biology questions. I will also try to stay available for about 30-40 min immediately after a class to answer specific cell biology questions. If you need a more private meeting, contact me by email ([mvp@wayne.edu](mailto:mvb@wayne.edu)) to arrange for a private Zoom session.

**Attendance:** Class attendance is mandatory for those days in which an exam is being held (see dates below): failure to write the exam (via Canvas) results in a grade of zero (0) for that exam. While it may be sufficient to simply listen to recorded lectures, I **strongly** recommend that you attend all classes and fully participate in our discussions of the material. To really benefit from these, it is very important that you are reading the chapter (and/or listening to the recorded lectures) PRIOR to these synchronous sessions. The discussions are designed to help you focus on how and why a cell works, rather than only on words found in the textbook.

**Grading Policy:** A final grade will be calculated based on your performance in four (4) classroom exams, and a series of chapter quizzes (tests) managed through the Publisher's Smartwork site.

**EXAM dates** are indicated in the box at right starting at 8:30 am - regular class time. These dates will NOT change, although content may change to reflect pace of lecture material.

**EXAM DATES:**

Monday May 24, 2021  
 Monday June 7, 2021  
 Wednesday June 16, 2021  
 Monday June 28, 2021

**Each exam** will be worth 100 points and the top 3 will count towards your grade (300 points total). Exams will be conducted through Canvas "Quizzes" and require both a web cam and Lockdown Browser. They will be set for 70 min. The fourth exam is set for Monday June 28 - the first day of the final exam period. Exam questions will test your UNDERSTANDING of the didactic information describing cell processes, as well as your ability to apply knowledge.

Because you can drop an exam, NO Makeup Exam will be provided regardless of your reason for missing it. It is STRONGLY recommended that you take all four exams and then drop your lowest.

**Chapter Quizzes (Tests)** will be used to ensure you keep up with the pace of the class. In general we cover two chapters per week, so an equivalent number of tests will also occur. These tests will usually be made available for a few days (including a weekend) but each test will have an end date and time, with major point penalties for late attempts. *Be sure to check the Smartwork site often.* Questions will cover simple didactic material, as well as thought and application questions. The number of attempts (per question) will vary (0-3 times) as dictated by prof. The number of questions (therefore points) for each chapter quiz will also vary according to chapter size and content. As such, points will accumulate all semester, and ultimately be worth 100 pts (25%) towards your final grade.

**Edpuzzle** is being used in the recorded lectures, as it allows me to bury questions within the lecture. While, Canvas requires me to assign 'points', these points do NOT count towards your final grade. The questions are designed to help you *think about* the concepts being discussed in the lecture, so they can be challenging if you are not reading too closely. But you continue to learn as answers are provided a few seconds later.

**Summary of final grade calculation:** At the end of the year, a letter grade is calculated based on total points accumulated. This number is then 'normalized' to the second highest grade and converted into a percentage. The percentages are rounded to a whole number, and converted to a letter grade using the table shown at right.

Exam I	100 pts	} top three scores counted = 300 points
Exam II	100 pts	
Exam III	100 pts	
Exam IV	100 pts	
Chp Quizzes-	100. Pts	TOTAL = 400 points

93-100%	A
90-92	A-
86-89	B+
82-85	B
80-81	B-
76-79	C+
72-75	C
70-71	C-
67-69	D+
63-66	D
60-62	D-
59 or less	F

**Timeliness:** Canvas exams will start at announced time and run for 70 min. As this is computer based, these on and off times are exact! Do not be late as no additional time will be allowed. Smartwork based quizzes will also have designated start and stop dates. On occasion, at the prof's discretion, you may be allow you to take the quiz late, but in these case(s), it will include a penalty (up to 75% loss).

**Individuals with Disabilities:** If you have a documented disability that requires accommodations, you will need to register with Student Disability Services for coordination of your academic accommodations. The Student Disability Services (SDS) office is located at 1600 David Adamany Undergraduate Library in the Student Academic Success Services department. Once you have your accommodations in place, I will be glad to meet with you privately during office hours to discuss your special needs.

**Religious Conflicts:** If you have a conflict with any of the scheduled class or exam times due to religious reasons, you must notify me in writing by class time on May 26, 2009: look over ALL exam dates now. Every attempt will be made to find a mutually convenient solution, but at times, this may include using your ability to drop one exam. No make-up exams will be given unless you have notified me in writing by the above date. Contact your lab TA directly for conflicts with lab assignments.

### **ADD/DROP POLICY**

I follow all university policies on adding or dropping class and I recommend that you contact Mrs. Hunter, Biology Advisor for help in this regard. Note Wayne State has changed the grading polic, and in particular there are no more "X" grades; you will receive an F if you fail to do the administration work required to drop the class. Per WSU regulations, if you drop the course, you will be assigned WP, WF or WN as appropriate. 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. For details see: <http://sdcl.wayne.edu/RegistrarWeb/Registrar/policies.htm>.

### **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 Newline (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

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".

Tentative Class Lecture Schedule

THIS IS AN ACCELERATED CLASS FORMAT. Each lecture session (MW 8:30 to 11 am) is really two lectures back to back, and most chapters are covered in a maximum of 2 lectures. Significant alterations in this schedule will be 1) announced in class, and 2) posted on Canvas.

**EXAM DATES WILL NOT CHANGE** – but the content may change to reflect lecture progress.

**Not shown in table, but important to note, is the occurrence of 1 -2 chapter quizzes (Tests) each week through publisher’s Smartwork site.** Test will be turned on relatively early but will have specific (and firm) due dates. On occasion you may be allowed to take the test after the due date, but a loss of points (up to 100%) will incur. *Check Smartwork often for information on these due dates – do NOT assume!*

First and second hours are designated to re-enforce the accelerated nature of this class. They are approximations of lecture content, and will likely vary a little bit.

Bio2600		Tentative Class Schedule				
Spring 2021						
			"1st hr"	"2d hr"		
			8:30-9:40 am	9:45-11 am		
May	M	10	intro/chp 1	Chp 4		
	W	12	Chp 4	Chp 11		
	M	17	chp 12	Chp 12		
	W	19	Chp 12 (recap)	Chp 13		
	M	24	<b>Exam 1 (Chps 4, 11 &amp; 12)</b>	Chp 14		
	W	26	Chp 14	Chp 14 & 15		
	M	31	<b>Holiday - Memorial Day (see fri 6/4)</b>			
	June	W	2	Chp 15	Chp 15	
<b>F</b>		<b>4</b>	Chp 5	Chp 6		
M		7	<b>Exam 2 (Chps 13, 14 &amp; 15)</b>	Chp 6		
W		9	Chp 7	Chp 7		
M		14	Chp 8	Chp 5 - 8 (recap)		
W		16	<b>Exam 3 (Chps 5, 6, 7, 8)</b>	Chp 16		
M		21	Chp 16	Chp 17		
W		23	Chp 17	Chp 18		
M		28	<b>Exam 4 (Chps 16, 17, 18)</b>			

*Be sure to check Smartwork site for the due dates of all chapter Quizzes.*