

## **BIO 2600: Introduction to Cell Biology**

### **Lecture Syllabus, Spring 2020**

3 credits

#### **Welcome to Biology 2600!**

In this document, you will find all the information you need regarding the course structure, the content of the course, grading policies, exam dates, and other important information. By registering for the class, you agree to follow all of the policies listed in the syllabus and those that are mandated by the University. Therefore, **I highly recommend you read the syllabus in a great detail.** I look forward to a fun and exciting semester with all of you!

Dr. Turchyn

#### **COURSE DESCRIPTION**

This course serves to introduce cell biology to undergraduate students majoring in the Biological Sciences or other science majors, including science education, pre-allied health, engineering and all students seeking introductory knowledge of cell biology.

Cells are the simplest unit of life and serve as the building block of all multi-cellular organisms. The objective of the course is to introduce students to the complexities of structure and function of the major components of living cells. The lectures in this course will focus on cell structures and their functions. The emphasis will be on animal cells, although aspects unique to plant or prokaryotes may be mentioned. The information learned from this course will provide a solid knowledge base for future classes in genetics, biochemistry, physiology, and metabolism.

#### **LEARNING OUTCOMES**

Upon successful completion of the 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

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regulated.

6. Reconstruct how a cell grows, duplicates, and dies, and how defects in these mechanisms lead to disease.
7. Create a dynamic model of a cell and its behaviors under different conditions.

### **COURSE PREREQUISITES**

**Students are required to have completed both BIO 1500 and BIO 1510 with a final grade of C- or better.** Students who managed to enroll in this course without satisfying these prerequisites are not likely to succeed in this course and for this reason will be required to drop it. Students who have questions about these prerequisites should contact the Biology Department's Undergraduate Advisor during the first week of class.

### **RECOMMENDED TEXTBOOK**

**Essential Cell Biology, 5<sup>th</sup> edition, by Alberts, Hopkin, Johnson, Morgan, Raff, Roberts, and Walter** (ISBN: 9780393679533). If funds are a serious issue, students can use an older edition. However, students are responsible for determining the material in the older edition that corresponds to the material in the 5<sup>th</sup> edition. To develop a true understanding of the material, students must read the textbook. It is highly recommended that students read the assigned chapters before each lecture, since this will facilitate a solid understanding of the concepts discussed in lectures.

### **ADD/DROP INFORMATION**

Students can enroll in the class until **May 10<sup>th</sup>**. If a student signs up for the class and decides to drop it before **May 10<sup>th</sup>**, the tuition for the class will be cancelled, the student will be reimbursed, and the class will not show on his/her transcript. If the student drops the class between **May 11<sup>th</sup>** and **June 7<sup>th</sup>**, the tuition will not be reimbursed and a final grade of "WP" (withdrawal with a passing grade, if average of all your scores earned to date is greater than or equal to 60%), "WF" (withdrawal with a failing grade, if average of all your scores earned to date is less than 60%), or "WN" (withdrawal never attended) will be shown on his/her transcript. **All withdrawals must be requested through Academics and they will not be granted after June 7<sup>th</sup>.** If the student signs up for the class, stops attending lectures, and fails to withdraw, he/she will receive a failing grade "F" for the course. **Please**

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note that "incomplete" grades will not be issued to students in poor standing who are seeking an alternative to a late drop.

### STUDENT CODE OF CONDUCT

All participants in the course are bound by the Student Code of Conduct that can be found at <https://doso.wayne.edu/conduct/academic-misconduct>. The University is aware that students often use WhatsApp and/or other group messaging apps for the purposes of cheating on their classwork. Be aware that that using group messaging apps in this manner is indeed a violation of the academic integrity honor code and can come with consequences. **Students who knowingly or intentionally conduct or help another student engage in dishonest conduct or acts of cheating will receive a grade of "F" for the course and may be expelled from the University.**

### OFFICE HOURS AND COMMUNICATION

**Any questions/comments regarding the lecture** portion of the course should be directed to:

Dr. Nataliya Turchyn

**Office Location:** Room 3119, Biological Sciences Building

**E-mail:** [ai7380@wayne.edu](mailto:ai7380@wayne.edu)

**Office Phone:** 313-577-2910

**Office Hours:** 11:00 am - 1:00 pm on Mondays and Wednesdays

If you have any questions related to the course material or assignments, please post them on the [Canvas Discussions](#). I will do my best to reply to your question(s) within 24 hours. You can also ask me questions in real time during my virtual office hours via Zoom. Each week I will email you with a Zoom invitation that will have that week's meeting links to join. During that time, you can join the meeting to discuss any questions you may have.

I will not reply to e-mails when the answer can be found in the syllabus or on Canvas. In addition, I will not reply to e-mail questions that have already been answered on the [Canvas Discussions](#).

If you have a question about your lecture grade, please send me an e-mail containing the scores you have in your records and I will check them with my records. I will do my best to reply to your email

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within 24 hours.

When e-mailing me please use professional style with your course number in the subject, a proper greeting (e.g., "Dear Dr. Turchyn"), and correct punctuation including capitalization and no texting abbreviations. Always include your name at the end of your email.

The Academic Success Center offers individual **tutoring** and **group workshops** to the students, which are free of charge. You should schedule appointments or request for group sessions early in the semester. Use <https://success.wayne.edu/pal/csg> for the group request and <https://success.wayne.edu/tutoring> for individual tutoring appointments.

### ATTENDANCE

There will be no weekly scheduled course meetings that require attendance. However, weekly quiz due dates will be assigned with the assumption that students are proceeding with the course in the same manner as weekly face-to-face meetings. It is student's responsibility to complete all quizzes and exams on time.

### INFORMATION ABOUT QUIZZES

Students are expected to take an active role in their learning by listening to the audio-recorded lectures, going over PowerPoint slides with my extra notes, doing study guides and old exams, reading the textbook, and taking online quizzes through [Canvas Quizzes](#). These quizzes will be timed and cover the information relevant to the recently discussed lecture material. If you miss a quiz deadline, you will lose the points associated with it. **Students will have a chance to earn UP to 75 points for completing six quizzes.**

### EXAMS

**There will be three exams given during the semester and one final, cumulative exam (four exams total).** The regular and final exams will consist of 40 and 50 multiple choice and true/false questions, respectively. Some questions will have images. **All exams are closed book and related to the material covered in the lecture, study guides, and assigned in reading of the textbook.** The regular and final exams will be worth 100 and 125 points, respectively.

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**Every student must take the final exam and it cannot be dropped.** If the percentage of your final exam score is higher than the percentage of your lowest semester exam score, your lowest semester exam score will be replaced.

For example, if you score on exam #2 75 out of 100 points, then your exam #2 would be 75% ( $75/100 \times 100\%$ ). If you score on the final exam 105 out of 125 points, then your final percentage would be 84% ( $105/125 \times 100\%$ ). Your exam #2 score would be recalculated using the 84.0% you received on the final exam and your new exam #2 score would be 84 points ( $84/100 \times 100$  points).

**The FINAL EXAM is scheduled for MONDAY, JUNE 22<sup>nd</sup>.** All exams will be administered online through [Canvas Quizzes](#) using LockDown Browser and Respondus Monitor, which requires a webcam to ensure academic integrity. Respondus is compatible with Microsoft Windows, macOS, and most Wayne State-managed Chromebooks. However, it is not compatible with personally owned Chromebooks, Android or iOS devices. To download Respondus in Canvas, click **Help** and then **Students: Links and Downloads**. Visit the Respondus Student Resources web page at [web.respondus.com/student-help/](http://web.respondus.com/student-help/) for more information.

**Each exam, including the final, will take place on specified Mondays or Wednesdays at 8:30 am** (see **SCHEDULE OF LECTURES, QUIZZES, AND EXAMS**). Exams will be timed, and students will have only a single attempt at questions and the exam itself.

**There are no make-up exams. If a student misses a regular exam for ANY reason, the percentage the student receives on the final exam will be used as the percentage for the missed exam.**

For example, if you score on the final exam 115 out of 125 points, then your percentage on the final exam would be 92% ( $115/125 \times 100\%$ ). So, if you missed exam #2 for any reason, your percentage on exam #2 would be 92%, which is 92 points.

The final exam is scheduled as designated in the Schedule of Classes for this term. No other time for the final exam will be available, and no exception will be made for conflicts such as student travel plans or other exams the same day. **Once you have finished answering the questions, click the Submit**

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button at the bottom of the exam. If you do not submit the exam, you will receive no credit for your answers. No extra time will be given to those students who start working on their exam too late.

If more than 75% of the class answers an exam question incorrectly, everyone will receive credit for that question.

### CALCULATING GRADES

The total points possible for the course are 500 points, and the final scores are calculated using scores from the five exams and quizzes. There is absolutely no opportunity for extra credit or alternate assignments under any circumstances. All exam scores will be posted in the [Canvas Grades](#). Exams will not be given in advance.

It is the student's responsibility to keep track of his/her scores. You can fill in the blank lines below to keep track of your scores.

Exam I	_____ (out of 100)
Exam II	_____ (out of 100)
Exam III	_____ (out of 100)
Final Exam	_____ (out of 125)
Quizzes	_____ (out of 75)

In order to determine your final percentage in the course, you should add all the scores above, divide by 500, and then multiply by 100%.

**Final grades are assigned based on the following percentage:**

A	92.5 - 100%	C	72.5 - 75.4%
A-	89.5 - 92.4%	C-	69.5 - 72.4%
B+	85.5 - 89.4%	D+	65.5 - 69.4%
B	82.5 - 85.4%	D	62.5 - 65.4%
B-	79.5 - 82.4%	D-	59.5 - 62.4%
C+	75.5 - 79.4%	F	≤ 59.4%

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### **GRADE DISPUTES**

Students will have one (1) week after the return of an exam 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. Be advised that an exam challenge constitutes an entire re-grade of your exam.

### **EXAM TIME CONFLICTS**

Students are not required to take more than two exams in one day. A student with more than two scheduled final exams on one day may (not must) contact the instructor of the course with the lowest number of students enrolled to arrange an alternate time for the final exam. Such petitions must be made at least one week prior to the scheduled date of the exam. Our class has ~70 students.

### **RELIGIOUS HOLIDAY CONFLICTS**

Students who have a conflict with any of the scheduled exam times due to religious reasons must notify me in writing by class time on **Monday, May 11<sup>th</sup>**. **Accommodations will not be provided unless I am notified in writing by this date.**

### **STUDENTS 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. The SDS telephone number is 313-577-1851 or 313-202-4216 for videophone use. Once you have your accommodations in place, please send me an email discussing your special needs. Student Disability Services' mission is to assist the university in creating an accessible community where students with disabilities have an equal opportunity to fully participate in their educational experience at Wayne State University. You can learn more about the disability office at [www.studentdisability.wayne.edu](http://www.studentdisability.wayne.edu).

To register with Student Disability Services, complete the online registration form at:

[https://wayne-accommodate.symplicity.com/public\\_accommodation/](https://wayne-accommodate.symplicity.com/public_accommodation/).

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## HOW TO SUCCEED IN BIO 2600?

In order to succeed in BIO 2600, you would need to do the following:

1. Download the ppt slides with my notes and start listening to the lecture. You are encouraged to take more notes on each lecture if you want.
2. Study the ppt slides with my handwritten/typed notes afterwards, paying attention to the images.
3. Re-listen to the lecture one or more times **AFTER** studying. If there is something that you still don't understand, post your questions on the [Canvas Discussions](#) and/or ask me during my virtual office hours.
4. To test your knowledge on the material, do the study guide for each chapter **WITHOUT** using ppt slides or notes. If there are any questions that you cannot answer without help, you have to study that material again before moving to the next chapter.
5. Read the textbook and do the questions within and at the end of each chapter to test your knowledge even more.
6. Always go over my practice questions, which can be found at the end of each PowerPoint presentation before an actual exam. If you are struggling on those, it means that you are not prepared to take the exam and you have to study more.
7. Try to study for this class at least 16 hours per week by understanding, critical thinking, and being able to apply what you have learned.

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## SCHEDULE OF LECTURES, QUIZZES, AND EXAMS

All lecture PowerPoint slides with my notes and practice questions, audio recordings of the lectures, study guides, animations, and syllabus can be found on [Canvas Homepage](#). If there are any issues with Canvas, please contact **Computing & Information Technology (C& IT)** at (313) 577-4778 or [helpdesk@wayne.edu](mailto:helpdesk@wayne.edu).

Here is the schedule indicating what chapters you have to study, and the due dates for the exams and quizzes.

Topics and Assignments	Chapter(s)	Date(s)
Introduction to cells	1	5/4
Protein structure and function	4	5/4 and 5/6
<b>Quiz #1</b>	<b>1 and 4</b>	<b>5/11</b>
Membrane structure	11	5/11
Transport across cell membranes	12	5/11 and 5/13
Energy generation in mitochondria and chloroplasts	14	5/13, 5/18, and 5/20
<b>Quiz #2</b>	<b>11 and 12</b>	<b>5/17</b>
<b>Exam #1</b>	<b>1, 4, 11, &amp; 12</b>	<b>5/18</b>
Intracellular compartments and transport	15	5/20 and 5/27
<b>Quiz #3</b>	<b>14</b>	<b>5/26</b>
Cell signaling	16	5/27 and 5/29
DNA and chromosomes	5	5/29 and 6/1
<b>Quiz #4</b>	<b>15 and 16</b>	<b>6/1</b>
DNA replication, repair, and recombination	6	6/1 and 6/3
<b>Exam #2</b>	<b>12 &amp; 14-16</b>	<b>6/3</b>
From DNA to protein: how cells read the genome	7	6/3 and 6/8
<b>Quiz #5</b>	<b>5 and 6</b>	<b>6/8</b>
Control of gene expression	8	6/8 and 6/10
Cytoskeleton	17	6/10 and 6/15
<b>Quiz #6</b>	<b>8</b>	<b>6/15</b>
The cell division cycle	18	6/15 and 6/17

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<b>Topics and Assignments</b>	<b>Chapter(s)</b>	<b>Date(s)</b>
<b>Exam #3</b>	<b>5-8</b>	<b>6/17</b>
<b>Final Exam</b>	<b>All topics covered</b>	<b>6/22</b>

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