

Fall 2020

BIOL 201-001: Foundations of Biology: Cellular & Molecular Biology

Mary Konsolaki

Follow this and additional works at: <https://digitalcommons.njit.edu/bio-syllabi>

Recommended Citation

Konsolaki, Mary, "BIOL 201-001: Foundations of Biology: Cellular & Molecular Biology" (2020). *Biology Syllabi*. 51.

<https://digitalcommons.njit.edu/bio-syllabi/51>

This Syllabus is brought to you for free and open access by the NJIT Syllabi at Digital Commons @ NJIT. It has been accepted for inclusion in Biology Syllabi by an authorized administrator of Digital Commons @ NJIT. For more information, please contact digitalcommons@njit.edu.

BIOL 201 Foundations of Biology - Cellular/Molecular Biology
CONVERGED CLASS

INSTRUCTOR:	Dr. Mary Konsolaki	EMAIL:	mary.konsolaki@njit.edu	
OFFICE:	CKB 340D 973-642-4975	OFFICE HOURS:	Virtual: Tue-Thu 12:00-1:00pm or by appointment	
COURSE SCHEDULE:	Section 001: KUPF210A Wed-Fri 9:00-10:20am Section 003: CTR BALL B Tue-Thu 2:30-3:50pm	COURSE WEBSITE:	https://njit.instructure.com/courses/14893	
REMOTE STUDENTS	Section 001	Meeting number	120 369 9640	Password iMn7mqunW86
	Section 003	Meeting number	120 524 0984	Password Ru86fWx6vFj

CONVERGED CLASS INFORMATION

In order to enforce social distancing protocols necessary to ensure the safety of individuals attending in-person classes, BIOL 201 will run as a converged class in Fall 2020. Converged learning classes will meet at the scheduled time with some students physically in the classroom and others joining remotely. Because of social distancing restrictions, only a reduced number of students will meet physically at any one time.

F2F STUDENTS You have been invited to use the **Back2Classroom** app, through which you have been automatically assigned to your in-person class date. Students will participate online on the dates for which they are not assigned to attend in a face-to-face mode. To accommodate the changes in student schedules during the add-drop period, adjustments to the confirmed in person assignments will only be updated between Sept 1 - Sept 12. The next batch of confirmed in person assignments will be completed on Sept 13. No new automatic in person seat assignments will be scheduled after that date. Students who have a converged learning class will be sent a calendar invite, which must be opened. This will populate all the in person converged learning classes to which the student has been assigned into their google calendar. Students enrolled in converged learning classes **can choose to attend class remotely even when scheduled to attend physically.** Students assigned a seat for a converged learning class will have the ability to manage their in-person seat assignments by canceling an in-person seat assignment and choosing to attend online. Cancelling a seat assignment will open a seat for another student to attend the class if they wish. Students who wish to attend a class session outside of their normal rotation will be able to use the app to request a booking; based on the availability of seats and the number of students requesting an in-person seat assignment (outside of the normal in-person rotation), the app will assign the seat based on priority request, and consistency of a student in attending the class when requesting a seat. A student's failure to show up to a class after requesting a special booking will reduce that student's future standing in the request queue. Students must make a determination on whether to cancel a class 48 hours before the class begins.

REMOTE STUDENTS Remote students will log on Webex using the information given above, for their individual section (001 or 003). Remote students will participate in class by asking questions during the indicated times, either by unmuting their microphone or by writing the question in the chat box. Remote students will also participate in group work during the Lecture time, as appropriate.

All exams for this course will be online. Please see more information on page 5.

ATTENDANCE

When attending class, your instructor will display a QR code. Students attending the in-person class will scan the code using their phones; this will update the seat assignment and provide affirmation that the student attended the class. If you expect to miss a class for a valid reason, please email Dr. Konsolaki and provide documentation (mary.konsolaki@njit.edu)

COURSE DESCRIPTION: This course surveys the chemical components and structure of the cell and methods of study; thermodynamics and metabolism; membrane biology, energy utilization and transfer; protein and nucleic acid structure and function; transcription, translation, and genetic regulation. This course is complemented by the laboratory course 120:202 Foundations of Biology: Cell and Molecular Biology: Laboratory. Both courses 120:201 and 120:202 must be taken concurrently, although they are separate courses with their own grades.

PREREQUISITES:

21:120:200 Concepts in Biology, and 21:160:115 General Chemistry.

LEARNING OBJECTIVES

Through selected readings, lectures, discussions and occasional group activities, students are encouraged to learn on their own about the main processes taking place in the cell from a molecular perspective. After successfully completing the course, students will have

- ✓ the ability to describe the general structure of biomolecules as well as their role in cellular metabolism and the flow of genetic information;
- ✓ information and concepts on bioenergetics and the use of energy by cells;
- ✓ the information on the principles of membrane transport mechanisms and their role in important physiological processes at the organismal level;
- ✓ acquired concepts and general principles on gene expression and its regulation;
- ✓ knowledge on the concepts and general principles on eukaryotic signal transduction;
- ✓ the skills to read, interpret and apply general information in the fields of cell and molecular biology;
- ✓ evaluate contemporary hypotheses on the functional mechanisms of the cell;
- ✓ reinterpret and/or postulate alternative hypotheses or ideas to explain or describe the phenomena studied in the course;
- ✓ the opportunity to explore the topics covered in the course in higher level classes which require Foundations 201/202 as pre-requisites in the biology major and minor.

INSTRUCTIONAL MATERIALS: Alberts, Hopkin, Johnson, Morgan, Raff, Roberts, Walter ***Essential Cell Biology, 5th Edition***, W.W. Norton & Company, NY. ISBN: 978-0393680362
<https://wwnorton.com/books/9780393680362>

Some additional reading may be occasionally assigned from the following online resources (free text):
Pubmed eBook <https://www.ncbi.nlm.nih.gov/books/NBK21475/?term=Cell%20biology>

SUPPLEMENTAL MATERIALS: Any additional materials required for class would either be provided through Canvas (UCID required), or via web link.

CODE OF STUDENT CONDUCT: Academic Integrity is the cornerstone of higher education and is central to the ideals of this course and the university. Cheating is strictly prohibited and devalues the degree that you are working on. As a member of the NJIT community, it is your responsibility to protect your educational investment by knowing and following the academic code of integrity policy that is found at: <http://www5.njit.edu/policies/sites/policies/files/academic-integrity-code.pdf>.

Please note that it is my professional obligation and responsibility to report any academic misconduct to the

Dean of Students Office. Any student found in violation of the code by cheating, plagiarizing or using any online software inappropriately will result in disciplinary action. This may include a failing grade of F, and/or suspension or dismissal from the university. If you have any questions about the code of Academic Integrity, please contact the Dean of Students Office at dos@njit.edu

REASONABLE ACCOMMODATION: If you have a special need that may require an accommodation or assistance, please inform me of that fact as soon as possible and no later than the end of the second class meeting. Students with disabilities who require accommodations must contact Dr. Phyllis Bolling, Center for Counseling and Psychological Services (C-CAPS), Campbell Hall, (entry level), room 205, (973) 596-3420

COURSE EVALUATION PROCEDURES	
Lecture Exam 1	20% (100pts)
Lecture Exam 2	20% (100pts)
Homework and other assignments	10% (50pts)
Review Quizzes (3)	10% (50pts)
Project	10% (50pts)
Attendance & participation	5% (25pts)
Final Exam	25% (125pts)
TOTAL	100% (500pts)

GRADING SCALE			
A	90-100	C	65-74
B+	85-89	D	50-64
B	80-84	F	0-49
C+	75-79		

Late work: Work submitted late will be penalized with a 10% per day reduction. That rule does not apply to assignments that are released to students after the due date.

Extra Credit: There will be no individualized opportunities for extra credit. There may be opportunities for the entire class during the course.

COURSE SCHEDULE

Schedule: Dates listed by week; lectures will meet twice every week, unless otherwise noted. Homework assignments will be due on Friday midnight, on Canvas and review quiz assignments will be due on Sunday midnight. Please note that this is the proposed schedule and is subject to change. A more detailed schedule will be continually updated via the course Canvas site.

Week	Lecture Topic	Readings	Assignments Due
8/31	Introduction / Units of Life	Chapter 1	No HW
9/7	Chemical bonds / Small molecules / Macromolecules	Chapter 2	HW1 (Canvas)
9/14	Energy, catalysis / Biosynthesis	Chapter 3	HW2 (Canvas)
9/21	How proteins work / How are proteins controlled and studied	Chapter 4	Review Quiz 1 (Canvas)
9/28	Exam 1 (see info below) / Structure of DNA and chromosomes	Chapter 5	HW3 (Canvas)
10/5	Regulation of chromosome structure / From DNA to protein	Chapter 5 Chapter 7	HW4 (Canvas)
10/12	Control of gene expression I	Chapter 8	HW5 (Canvas)
10/19	Control of gene expression II / Genome evolution	Chapter 8 Chapter 9	Review Quiz 2 (Canvas)
10/26	Mobile genetic elements / Exploring gene function	Chapter 9 Chapter 10	HW6 (Canvas)
11/2	Exam 2 (see info below) / Membranes	Chapter 11	HW7 (Canvas) Project will be released
11/9	Membrane transport / Transporters / Intracellular Compartments/Protein transport	Chapter 12 Chapter 15	HW8 (Canvas)
11/16	Cell signaling I / Cell signaling II	Chapter 16	HW9 (Canvas)
11/23	Cell signaling III / THANKSGIVING	Chapter 16	No HW
11/30	Tissues / Stem Cells/Cancer	Chapter 20	HW10 (Canvas)
12/7	Cytoskeleton	Chapter 17	Review Quiz 3 (Canvas) Project due
12/14	Exam 3 (Final) (see info below)		Final Exam Schedule: http://www5.njit.edu/registrar/exams/

Information on Online Exams

NJIT policy requires that all midterm and final exams must be proctored, regardless of delivery mode, in order to increase academic integrity. Note that this does not apply to essay or authentic based assessments. In this course you will be required to use the **Lockdown Browser with Monitor connected to Webex proctoring method** to ensure academic integrity for exams. Please see NJIT's response to questions about online proctoring here: <https://www5.njit.edu/provost/response-questions-about-online-proctoring/>.

See below for more information about how exams will be proctored in this course.

Webex will be used to allow your instructor to proctor the exams. Your instructor will schedule a Webex exam session and share the meeting information with you ahead of time. The exam will be in Canvas with Lockdown Browser and it will be password-protected. You can connect to the Webex session with your phone. You can find links to download the mobile app from the App Store or Google Play Store at the bottom of njit.webex.com (<https://njit.webex.com/webappng/sites/njit/dashboard?siteurl=njit>). When your instructor is ready to start the exam, you will be provided with the exam password in the meeting so all students can begin the Canvas quiz. Your instructor will then watch you, via the web camera, as you take the exam. Students are expected to remain connected to the Webex session until their exam is submitted. The session may also be recorded by your instructor. In order to use Webex for proctored exams, you will need the following: * High-speed internet connection * Webcam (on a phone or tablet). The process for connecting to Webex will be the same as when you connect for a class. Tips for ensuring a smooth experience while using Webex: * Connect to your Webex session before class starts. * Log into Canvas before connecting to Webex. Questions or problems can be submitted via web form by going to: <https://servicedesk.njit.edu> (<https://servicedesk.njit.edu/>) and clicking on the "Report your issue online" link. You may also call the IST Service Desk with any questions at 973-596-2900.

Respondus LockDown Browser is a locked browser for taking assessments or quizzes in Canvas. It prevents students from printing, copying, going to another URL, or accessing other applications during a quiz. If a Canvas quiz/exam requires that LockDown Browser be used, students will not be able to take the assessment or quiz with a standard web browser.

Watch this [short video] (<http://www.respondus.com/products/lockdown-browser/student-movie.shtml>) to get a basic understanding of LockDown Browser. A student [Quick Start Guide (PDF)] (<http://www.respondus.com/products/monitor/guides.shtml>) is also available. Respondus Lockdown Browser does not work with Linux and Chromebooks at this time. Please visit the [Respondus Knowledge Base article on computer requirements] (<https://support.respondus.com/support/index.php?/Knowledgebase/Article/View/89/25/what-are-the-computer-requirements-for-installations-of-respondus-lockdown-browser>) for additional information.

Download and install LockDown Browser from this link:

<http://www.respondus.com/lockdown/download.php?id=264548414>
<http://www.respondus.com/lockdown/download.php?id=264548414> * []
<http://www.respondus.com/lockdown/download.php?id=264548414>

Once your download and installation has finished, the Lock Down Browser will automatically launch (and close) as needed with the Quizzes. For this course, we will use the "New" quizzes format.