

SYLLABUS | Bio 13: Cells and Organisms (Lecture Component)

Lecture: Asynchronous (no time specified); Delivered online via Canvas

Lab: Several sections – see lab syllabus

	Contact	Office Hours
Course Instructor: Dr. Lauren Crowe	Bio13@tufts.edu	Virtually via Zoom – see Canvas Zoom tab For content-related discussion: Tues. & Thurs 10:30 am – 12 pm Fri. 12 pm – 1:30 pm For grades/concerns/1-on-1 discussion: Wed. 2:30-4:00 pm (10 min slots) Or by appointment
Lab Instructor: Dr. Kate Mirkin	Kate.mirkin@tufts.edu (for lab concerns only)	Please email for appointment
Course TA: Gina Mantica	Gina.mantica@tufts.edu	Virtually via Zoom – see Canvas Zoom tab Content-related discussion: Thurs. 9:30 – 10:30 am
Logistics/Accommodations: Monica Morin	Bio13@tufts.edu	Virtually via Zoom – see Canvas calendar Logistics-related discussion: Thurs. 9:30 – 10:30 am

Description

Welcome to Bio 13! I'm excited to share the wonderful world of biology with you! In this course, we'll be exploring the fundamentals of cellular and molecular biology and building the foundations on which later biology courses will be based. We will cover the basics of biochemistry, energy flow, gene transfer, and gene expression and learn how this relates to human health and physiology. This course serves as a foundation and is a prerequisite for several advanced Biology courses.

Student and Instructor Goals and Expectations

Throughout this course you will:

- Learn how to think like a scientist
- Understand and value the contributions of concepts in chemistry and physics on which foundations of molecular and cellular biology are built.
- Learn how biological foundations are applicable to physiology, genetics, and disease.

I expect all students to check their Canvas pages and Tufts emails regularly, engage with each other, and complete online modules by the deadlines provided. Feel free to contact me concerning any problems you are experiencing in this course. You do not need to wait until you receive a bad grade before asking for assistance. Keep in mind that office hours are not only a time to clarify content and address problems. I'd be happy to talk with you about your areas of special interest, help brainstorm topics, etc. Please note that this is a 5 SHU (credit hour) course. You are expected to spend 15 hours a week on coursework for this class between lecture and lab.

In turn, you can expect to hear back from emails within 24 hours and expect us to do whatever we can to facilitate your learning. We are committed to the principle of universal learning. This means that our classroom, virtual spaces, practices, and interactions should strive to be as inclusive as possible.

Content Delivery:

The content for this course will be delivered outside of our scheduled class time through readings in the textbook and short mini-lectures with supplemental content. Skeleton slides and comprehension worksheets will be provided for you to use as note-taking templates and study guides. Annotated slides and comprehension worksheet keys will be posted after problem sets are due so that you may use them for studying for the quizzes.

Materials (Electronic and Textbook):

- Course Website: Canvas (<https://login.canvas.tufts.edu/>) – Free, required
- Textbook: Biological Science, 7th Edition* (Freeman et al.) (also used for Bio14)
The e-access program associated with the text, MasteringBiology, is NOT required. It can, however, be a great study tool, and you will be able to access it through Canvas with your code. See purchasing options below:
 - E-text/MasteringBiology course code: **crowe67302**
 - You can purchase the eText with/without MasteringBiology through www.vitalsource.com
 - ISBN 978-013-527694-5, eText only - \$55 for 6 months, or \$75 for permanent access
 - ISBN 978-013-527655-6, eText with MasteringBiology - \$128 for 24 months
 - [eText with MasteringBiology](#) - \$70 for 18 weeks' access
- *Note*: The reading list is for 7th edition. If you use 5th/6th edition, you may compare the subsection titles to ensure that you are reading the correct sections. Some material may need to be supplemented.*



Academic Support at the StAAR Center:

The StAAR Center (formerly the Academic Resource Center and Student Accessibility Services) offers a variety of resources to all students (both undergraduate and graduate) in the Schools of Arts and Science, Engineering, the SMFA and Fletcher; **services are free to all enrolled students**. Students may make an appointment to work on any writing-related project or assignment, attend subject tutoring in a variety of disciplines, or meet with an academic coach to hone fundamental academic skills like time management or overcoming procrastination. Students can make an appointment for any of these services by visiting go.tufts.edu/TutorFinder, or by visiting our website (students.tufts.edu/staar-center).

Accommodation & Mental Health Information:

Tufts University values the diversity of our students, staff, and faculty; recognizing the important contribution each student makes to our unique community. Tufts is committed to providing equal access and support to all qualified students through the provision of reasonable accommodations so that each student may fully participate in the Tufts experience. If you have a disability that requires reasonable accommodations, please contact the StAAR Center (formerly Student Accessibility Services) at StaarCenter@tufts.edu or 617-627-4539 to make an appointment with an accessibility representative to determine appropriate accommodations. Please be aware that accommodations cannot be enacted retroactively, making timeliness a critical aspect for their provision. You can find more information on how to request accommodations and FAQs for using accommodations in Bio13 in the Accommodation Guide listed under the Student Resources module on the Canvas course site. Please email your official accommodations letter to Monica Morin by email to bio13@tufts.edu as soon as possible.

As a student, there may be times when personal stressors or emotional difficulties interfere with your academic performance or well-being. The Counseling and Mental Health Service (CMHS) provides confidential consultation, brief counseling, and urgent care at no cost for all Tufts undergraduates as well as for graduate students who have paid the student health fee. To make an appointment, call 617-627-3360. Please visit [the CMHS website](#) to learn more about their services and resources.

Diversity Statement:

In an ideal world, science would be objective. However, much of science is historically built on a small subset of privileged voices. In this class, we will try to recognize the accomplishments from a diverse group of scientists. Integrating a diverse set of experiences is important for a more comprehensive understanding of science. Please contact me (in person or electronically) or submit anonymous feedback if you have any suggestions to improve the quality of the course materials (see the Canvas home page). I aim to create a welcoming learning environment for the well-being of all students.

If you feel like your performance in the class is being impacted by your experiences outside of class, please come and talk with me. I want to be a resource for you. You can also submit anonymous feedback (resulting in a general announcement to the class, if necessary). If you prefer to speak with someone outside of the course, the Center for STEM Diversity is an excellent resource.

Academic Honesty:

You will work collaboratively throughout the course to solve problems, but all submitted material should be in your own words. However, your work on quizzes and lab work should be your own. Cheating and plagiarism will be reported to the university. I encourage you to review the Academic Misconduct Policy in the Code of Conduct here: <https://students.tufts.edu/student-affairs/student-code-conduct/academic-integrity-resources>.

Policy on Sharing

This course is designed for everyone to feel comfortable participating in discussion, asking questions, learning, and facilitating the learning of others. For that atmosphere to be maintained, any recordings of our conversations will only be shared with enrolled students (not posted publicly), and it is prohibited for any of us who have access to the video to share it outside the course. Similarly, I have specifically designed the syllabus, quizzes, handouts, and lectures for the people who are enrolled in the course this term and those may not be shared outside this course. It is against Tufts policy for anyone to share any content made available in this course including course syllabi, reading materials, problems sets, videos, handouts, and quizzes with anyone outside of the course without the express permission of the instructor. This includes any posting or sharing of videos or other recordings on publicly accessible websites or forums. Any such sharing or posting could violate copyright law or law that protects the privacy of student educational records. Please see the Canvas site for this course's copyright policy.

Grading

This class is graded on a whole letter scale with no rounding. Plus/minus grades were originally started to combat grade inflation and because faculty thought it would help distinguish students more clearly. Research shows that plus/minus grading takes motivation out of **learning** and more onto the grades themselves (e.g., cramming for exams), and does not significantly affect cumulative GPA (and the few studies that have shown significant differences have actually shown a decrease in mean GPA after implementation of plus/minus grading scales).

Grade Range	Letter
90-100	A
80-89.99	B
70-79.99	C
60-69.99	D
<60	F

Problem Sets:

Every week, you will be assigned a few short videos (“mini-lectures”) to either prime you before the assigned reading from the textbook and other articles or to supplement the reading. Comprehension Worksheets will be provided for your own benefit – these will not be collected for a grade but will help you prioritize the take-aways for each reading or mini-lecture. Problem sets will be due the Fridays at 11:59 pm EDT/EST. These

problem sets enable you to track your own mastery of the material and will be multiple choice and modeled after test questions. Problem sets do not have a time limit and can be attempted 2 times. Late work will not be accepted, so answers can be released in a timely manner to study for quizzes. **You may work on these problem sets with Bio13 peers.**

Assignment	%
Problem Sets (1 per week – 14 total)	20%
Discussion Forums (1 response & 2 replies per week)	20%
Case Studies (1 per 2 week unit – 7 total)	10%
Quizzes (1 per 2-week unit, 7 total)	25%
Lab*	25%
Total	100%

Engagement (Discussion Boards and Case Studies):

Research shows that we learn the best when we engage with our peers and talk through our understanding of the material. Just because we’re not in class doesn’t mean we can’t collaborate! Each week will have a discussion board prompt under Canvas. The purpose of the **discussion board** is to help you practice connecting concepts, elicit critical thinking, and foster interaction among you and other students. You will be split into **discussion board groups** of approximately 15 students to prevent forum overcrowding. You will be graded on your participation by responding to the prompt and replying to two of your classmates’ responses. Grading details will be listed online. Prompt responses are due on Wednesday at 11:59 pm EDT/EST, and your replies are due by Friday by 11:59 pm EDT/EST.

In addition to the discussion board participation, you will receive credit for completing case studies with your **case study team**. You will be placed into a group of 3-4 students with whom you can collaborate on Canvas, set up Zoom study groups, etc. Case studies are designed to help develop scientific thinking skills and apply the concepts in class to real-life examples. Furthermore, case study teams introduce you to other students in the class with whom you can study. More information will be provided on Canvas.

Quizzes:

Quizzes will be delivered on Canvas as timed assignments and will be similar in format to the problem set questions. Quiz questions will be based off information in the comprehension worksheets and other topics posted in the Supplemental Study Guides posted for each 2-week unit. You will not be tested on sections of the book that are not covered by the comprehension worksheets. Quizzes will be 10-15 multiple choice questions, and you will have 30 minutes to complete them. These assessments will be closed-book and must be completed on your own; you will be asked to sign an academic integrity statement confirming that the work is your own.

I understand that assessments can cause a lot of anxiety, but rest assured that you will have the opportunity to receive some credit back on your through quiz corrections and reflections, which may be worked on collaboratively. You should treat quizzes and quiz corrections as an opportunity to check in and reflect on your learning in the course rather than an obstacle to overcome. The quizzes are not cumulative in a broad sense, but topics and concepts will build upon each other and will still be relevant for future tests – thus, corrections are even more important for building proper foundational understanding. More information will be provided on Canvas.

Lab*:

You must pass the lab portion of this course (letter grade of D or higher) to pass the class. See Canvas and the lab syllabus for more lab information. If you have any questions, please reach out to your lab TA or Dr. Mirkin.

Late work/make-up policy:

Due to the structure of the class, problem sets will not be accepted late. Since modules are released every Friday morning at 12:00 am, you will have 8 days to work on the required background material and problem sets, so plan accordingly! It is better to stay ahead in the work for this class to give you some perceived flexibility. **Your lowest scoring problem set and quiz will be dropped; thus, if you miss a quiz or problem set, it won't affect your grade.** Case studies may be submitted up to two days late at a penalty of 5% per day; there will be no make-up for discussion board posts. Further flexibility with assignments will be provided only through correspondence from your advising dean.

Additional Course Resources

Class Canvas Site:

Information for this course will be primarily distributed through the Canvas site. Announcements, slides, reading and video assignments, and problems sets will all be posted on the site. Make sure you can access the site at the beginning of the semester. ***Please check the course website and your Tufts email account daily.***

Piazza:

We'll be conducting all class-related discussion here this term – you can access it through the side bar on the Canvas site. The system is highly catered to getting you help fast and efficiently from classmates, the TA, and myself. Rather than emailing questions to the teaching staff, I encourage you to post your questions on Piazza. The quicker you begin asking questions on Piazza (rather than via emails), the quicker you'll benefit from the collective knowledge of your classmates and instructors. We encourage you to ask questions when you're struggling to understand a concept—you can even do so anonymously.

Signing up for 1-on-1 appointments:

If you have a non-content related question that is more sensitive in nature (i.e., grading concerns or letter of recommendation/advising requests), I have 1-on-1 appointments available between 12:00 pm – 1:30 pm on Wednesdays. To sign up, go to your Canvas Calendar and select an available appointment. If you cannot make any of the available time slots, please email bio13@tufts.edu to set up an individual appointment.

Full Course Schedule and Reading List

All deadlines are at 11:59 pm EDT/EST (Tufts time). If you are participating remotely, you are responsible for determining the deadlines in your local time. Suggested workflows will be posted on Canvas weekly.

Week	Topic	Readings & Mini-lectures	Assignments
Week 1 Sept 8 – Sept 13	Scientific Method and Life	<p>Part 1: Characteristics of Life and the Scientific Method</p> <ul style="list-style-type: none"> • Chapter 1.1 What Does It Mean to Say that Something is Alive? • Introduction to the Cell mini-lecture • *Bioskills 2: Reading and Making Graphs • Cell Theory mini-lecture • Chapter 1.3 Life Processes Information and Requires Energy • Chapter 1.6 Doing Biology <p>*Bioskills can be found between Ch 1 and Ch 2 of your textbook</p>	<p>Wednesday, September 9</p> <ul style="list-style-type: none"> • Discussion Board Response <p>Friday, September 11</p> <ul style="list-style-type: none"> • Discussion Board Reply (x2) • Problem Set
Week 2 Sept 14 – Sept 20	Chemistry Foundations and Proteins	<p>Part 1: Chemistry Foundations</p> <ul style="list-style-type: none"> • Chapter 2.1 Atoms, Ions, and Molecules: The Building Blocks of Chemical Evolution (subsection: Basic Atomic Structure) • Structural formulas mini-lecture • Electronegativity mini-lecture • Chapter 2.1 remaining subsections • Bioskills 14: Reading Chemical Structures • Chapter 2.2 Properties of Water and the Early Oceans • Functional Groups mini-lecture • Introduction to macromolecules mini-lecture • Chapter 2.5 Life is Carbon Based <p>Part 2: Proteins</p> <ul style="list-style-type: none"> • Protein Chemistry Mini-lecture • Chapter 3.1 Amino Acids and Their Polymerization • Chapter 3.2 What Do Proteins Look Like • Chapter 3.3 Folding and Function • Protein Structure and Function mini-lecture • Bioskills 6: (Subsection Using Electrophoresis to Separate Molecules) • Protein Separation and Visualization mini-lecture 	<p>Wednesday, September 16</p> <ul style="list-style-type: none"> • Discussion Board Response <p>Friday, September 18</p> <ul style="list-style-type: none"> • Discussion Board Reply (x2) • Problem Set • Case Study #1

<p>Week 3 Sept 21 – Sept 27</p>	<p>Nucleic Acids and Carbohydrates</p>	<p>Part 1: Nucleic Acids</p> <ul style="list-style-type: none"> • Chapter 4.1 What is a Nucleic Acid? • DNA Structure Mini-lecture • Chapter 4.2 DNA Structure and Function • DNA vs. RNA mini-lecture • Chapter 4.3 RNA Structure and Function • Polymerase Chain Reactions mini-lecture • Bioskills 10 (Subsection: Amplifying DNA using the Polymerase Chain Reaction (PCR)) <p>Part 2: Carbohydrates</p> <ul style="list-style-type: none"> • Chapter 5.1 Sugars as Monomers • Differentiating Sugar Molecules mini-lecture • Chapter 5.2 The Structure of Polysaccharides • Glycosidic linkages mini-lecture • Carbohydrate functions mini-lecture 	<p>Monday, September 21</p> <ul style="list-style-type: none"> • Quiz (Weeks 1 and 2) <p>Wednesday, September 23</p> <ul style="list-style-type: none"> • Discussion Board Response <p>Friday, September 25</p> <ul style="list-style-type: none"> • Discussion Board Reply (x2) • Problem Set • Quiz corrections <p>*Tuesday September 22 – Last day to add classes</p>
<p>Week 4 Sept 28 – Oct 4</p>	<p>Lipids, Membranes, and Energy</p>	<p>Part 1: Lipids and Membranes</p> <ul style="list-style-type: none"> • Introduction to Lipid Structure mini-lecture • Chapter 6.1 Lipid Structure and Function • Phospholipid Bilayers and Permeability mini-lecture • Chapter 6.2 Phospholipid Bilayers • Chapter 6.3 How Substances Move across Lipid Bilayers: Diffusion and Osmosis • Membrane Proteins and Transport mini-lecture <p>Part 2: Energy and Thermodynamics</p> <ul style="list-style-type: none"> • Chapter 2.3 Chemical Reactions, Energy, and Chemical Evolution • Introduction to Equilibrium mini-lecture • Thermodynamics and Spontaneous Reactions mini-lecture • Chapter 8.1 What Happens to Energy in Chemical Reactions? 	<p>Wednesday, September 30</p> <ul style="list-style-type: none"> • Discussion Board Response <p>Friday, October 2</p> <ul style="list-style-type: none"> • Discussion Board Reply (x2) • Problem Set • Case Study #2

<p>Week 5 Oct 5 – Oct 11</p>	<p>Enzymes and Cell Respiration Part 1</p>	<p>Part 1: Enzymes and Energetic Coupling</p> <ul style="list-style-type: none"> • Redox Reactions mini-lecture • ATP as Energy mini-lecture • Chapter 8.2 Non spontaneous Reactions May Be Driven Using Chemical Energy • Chapter 8.3 How Enzymes Work • Enzyme Regulation mini-lecture <p>Part 2: Glucose Oxidation (Glycolysis, Pyruvate Processing, Citric Acid Cycle)</p> <ul style="list-style-type: none"> • Introduction to Cell Respiration • Chapter 9.1 An Overview of Cellular Respiration • Overview of Glycolysis • Chapter 9.2 Glycolysis: Oxidizing Glucose to Pyruvate • Chapter 9.3 Processing Pyruvate to Acetyl CoA • Citric Acid Cycle mini-lecture • Chapter 9.4 The Citric Acid Cycle: Oxidizing Acetyl CoA to CO₂ 	<p>Monday, October 5</p> <ul style="list-style-type: none"> • Quiz (Weeks 3 and 4) <p>Wednesday, October 7</p> <ul style="list-style-type: none"> • Discussion Board Response <p>Friday, October 9</p> <ul style="list-style-type: none"> • Discussion Board Reply (x2) • Problem Set • Quiz corrections
<p>Week 6 Oct 12 – Oct 18</p>	<p>Cell Respiration Part 2 and Photosynthesis</p>	<p>Part 1: Oxidative Phosphorylation (Electron Transport Chain and ATP Synthesis) and Fermentation</p> <ul style="list-style-type: none"> • Introduction to the Electron Transport Chain • Chapter 9.5 Electron Transport and Chemiosmosis: Building a Proton Gradient to Produce ATP • (Youtube for ETC) • Fermentation mini-lecture • Chapter 9.6 Fermentation <p>Part 2: Light Dependent Reactions</p> <ul style="list-style-type: none"> • Introduction to Photosynthesis mini-lecture • Chapter 10.1 Photosynthesis Harnesses Sunlight to Make Carbohydrate from CO₂ • The Light Dependent Reactions mini-lecture • Chapter 10.2 How Do Pigments Capture Light Energy? • Chapter 10.3 The Discovery of Photosystems I and II <p>Part 3: Light Independent Reactions (Carbon Fixation/Calvin Cycle)</p> <ul style="list-style-type: none"> • The Light Independent Reactions mini-lecture • Chapter 10.5 Captured Carbon Dioxide Is Reduced to Make Sugar • YT video on Calvin cycle 	<p>Wednesday, October 14</p> <ul style="list-style-type: none"> • Discussion Board Response <p>Friday, October 16</p> <ul style="list-style-type: none"> • Discussion Board Reply (x2) • Problem Set • Case Study #3 <p>*Monday, October 12 – Indigenous People’s Day</p> <p>*Tuesday, October 13 – Last day to drop without record of enrollment (except first-years)</p>

<p>Week 7</p> <p>Oct 19 – Oct 25</p>	<p>Cell Cycle and Meiosis</p>	<p>Part 1: Mitosis & Cell Cycle Control</p> <ul style="list-style-type: none"> • DNA and Chromosome Structure mini-lecture • Cell Cycle Overview • Chapter 12.1 How Do Cells Replicate? • Chapter 12.2 What Happens During M Phase? • Cell Cycle Control mini-lecture • Chapter 12.3 Control of the Cell Cycle <p>Part 2: Meiosis</p> <ul style="list-style-type: none"> • Key Genetics Vocabular mini-lecture • Introduction to Meiosis mini-lecture • Chapter 13.1 How Does Meiosis Occur? • Genetic Variation mini-lecture 	<p>Monday, October 19</p> <ul style="list-style-type: none"> • Quiz (Weeks 5 and 6) <p>Wednesday, October 21</p> <ul style="list-style-type: none"> • Discussion Board Response <p>Friday, October 23</p> <ul style="list-style-type: none"> • Discussion Board Reply (x2) • Problem Set • Quiz corrections
<p>Week 8</p> <p>Oct 26 – Nov 1</p>	<p>Mendelian Genetics</p>	<p>Part 1: Single Trait Inheritance</p> <ul style="list-style-type: none"> • Introduction to Mendel mini-lecture • Chapter 14.1 Mendel's Experimental System • Punnett Squares mini-lecture • Chapter 14.2 Mendel's Experiments with a Single Trait <p>Part 2: Two Trait Inheritance</p> <ul style="list-style-type: none"> • Chapter 14.3 Mendel's Experiments with Two Traits • Chapter 14.4 The Chromosome Theory of Inheritance • Recombination Frequency mini-lecture • Quantitative Methods 14.1 (box embedded in 14.5) 	<p>Wednesday, October 28</p> <ul style="list-style-type: none"> • Discussion Board Response <p>Friday, October 30</p> <ul style="list-style-type: none"> • Discussion Board Reply (x2) • Problem Set • Case Study #4
<p>Week 9</p> <p>Nov 2 – Nov 8</p>	<p>DNA Replication</p>	<p>Part 1: DNA Replication</p> <ul style="list-style-type: none"> • Introduction to DNA Replication mini-lecture • Chapter 15.2 Testing Early Hypotheses about DNA Synthesis • Chapter 15.3 A Model for DNA Synthesis • Telomeres mini-lecture • Chapter 15.4 Replicating the Ends of Linear Chromosomes <p>Part 2: Gene Anatomy</p> <ul style="list-style-type: none"> • The Central Dogma mini-lecture • Chapter 16.1 What Do Genes Do? • Chapter 16.2 The Central Dogma of Molecular Biology • Anatomy of a Gene mini-lecture 	<p>Monday, November 2</p> <ul style="list-style-type: none"> • Quiz (Weeks 7 and 8) <p>Wednesday, November 4</p> <ul style="list-style-type: none"> • Discussion Board Response <p>Friday, November 6</p> <ul style="list-style-type: none"> • Discussion Board Reply (x2) • Problem Set • Quiz corrections

<p>Week 10</p> <p>Nov 9 – Nov 15</p>	<p>The Central Dogma</p>	<p>Part 1: Transcription</p> <ul style="list-style-type: none"> • Introduction to Transcription mini-lecture • Chapter 17.1 An Overview of Transcription • Chapter 17.2 RNA Processing in Eukaryotes <p>Part 2: Translation</p> <ul style="list-style-type: none"> • An Introduction to Translation mini-lecture • Chapter 16.3 The Genetic Code • Chapter 16.4 What are the Types and Consequences of Mutations? • Chapter 17.3 An Introduction to Translation • Chapter 17.4 The Structure and Function of Transfer RNA • Chapter 17.5 Ribosome Structure and Function in Translation 	<p>Thursday, November 12</p> <ul style="list-style-type: none"> • Discussion Board Response <p>Friday, November 13</p> <ul style="list-style-type: none"> • Discussion Board Reply (x2) • Problem Set • Case Study #5 <p>*Wednesday, November 11 - Veteran’s Day (note change in Discussion Board deadline)</p>
<p>Week 11</p> <p>Nov 16 – Nov 22</p>	<p>Gene Expression</p>	<p>Part 1: Prokaryotic Gene Expression</p> <ul style="list-style-type: none"> • Chapter 18.1 An Overview of Gene Regulation and Information Flow • The Lac Operon mini-lecture • Chapter 18.2 Negative and Positive Control of Transcription <p>Part 2: Eukaryotic Gene Expression</p> <ul style="list-style-type: none"> • Chapter 19.1 Gene Expression in Eukaryotes - An Overview) • Chromatin Remodeling mini-lecture • Chapter 19.3 Initiating Transcription • CRISPR Gene Editing • RNA Interference mini-lecture • Chapter 19.4 Post-Transcriptional Control 	<p>Monday, November 16</p> <ul style="list-style-type: none"> • Quiz (Weeks 9 and 10) <p>Wednesday, November 18</p> <ul style="list-style-type: none"> • Discussion Board Response <p>Friday, November 20</p> <ul style="list-style-type: none"> • Discussion Board Reply (x2) • Problem Set • Quiz corrections <p>*Tuesday, November 17 – Last day to withdraw (drop for first-years)</p>
<p>Week 12</p> <p>Nov 23 – Nov 29</p>	<p>Genetic Applications</p>	<p>Part 1: Genetics Applications</p> <ul style="list-style-type: none"> • DNA Cloning mini-lecture • Chapter 20.1 Recombinant DNA Technology • Forensics Mini-lecture • Chapter 20.2 The Polymerase Chain Reaction • Big Data mini-lecture • Chapter 20.3 Analyzing Genomes 	<p>Wednesday, November 25</p> <ul style="list-style-type: none"> • Discussion Board Response <p>Friday, November 27</p> <ul style="list-style-type: none"> • Discussion Board Reply (x2) • Problem Set • Case Study #6 <p>**Note – Thanksgiving holiday week; only one part to this week, so I suggest finishing this week’s material before break! Deadlines remain for enough time to release problem set answers before Quiz.</p>

<p>Week 13 Nov 30 – Dec 6</p>	<p>Cell Biology</p>	<p>Part 1: Organelles and Nuclear Transport</p> <ul style="list-style-type: none"> • Chapter 7.1 Bacterial and Archaeal Cell Structures and Their Functions • Chapter 7.2 Eukaryotic Cell Structures and Their Functions • Nuclear Transport mini-lecture <p>Part 2: Endomembrane System and the Cytoskeleton</p> <ul style="list-style-type: none"> • Endomembrane System mini-lecture • Chapter 7.5 Cell Systems II - The Endomembrane System Manufactures, Ships, and Recycles Cargo • Chapter 7.6 Cell Systems III: The Dynamic Cytoskeleton 	<p>Monday, November 30</p> <ul style="list-style-type: none"> • Quiz (Weeks 11 and 12) <p>Wednesday, December 2</p> <ul style="list-style-type: none"> • Discussion Board Response <p>Friday, December 4</p> <ul style="list-style-type: none"> • Discussion Board Reply (x2) • Problem Set • Quiz corrections
<p>Week 14 Dec 7 – Dec 11</p>	<p>Cell Interactions and Signaling</p>	<p>Part 1: Cell Interactions</p> <ul style="list-style-type: none"> • Extracellular Matrix and Cell Walls mini-lecture • Intercellular Interactions mini-lecture • Chapter 11.2 How Do Adjacent Cells Connect and Communicate? <p>Part 2: Cell Signaling</p> <ul style="list-style-type: none"> • Introduction to Signaling mini-lecture • How Signaling Works mini-lecture • Chapter 11.3 How Do Distance Cells Communicate? • Bringing it All Together mini-lecture 	<p>Wednesday, December 9</p> <ul style="list-style-type: none"> • Discussion Board Response <p>Friday, December 11</p> <ul style="list-style-type: none"> • Discussion Board Reply (x2) • Problem Set • Case Study #7 <p>Wednesday, December 16</p> <ul style="list-style-type: none"> • Quiz (Weeks 13 and 14) <p>*Quiz corrections for final quiz dependent on grader availability. Details TBD.</p>

I have a question! Who do I talk to?

