

BIOL1114-101: Life 1 – Molecular & Cellular Concepts

Fall 2021 | **Course Meets:** MWF 9:00 – 9:50 am; Bolin 213

Contact Information

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Twitch: ChemistryJujitsu

Course Description

Life 1 is the first in a three-course sequence designed for students majoring in the natural sciences – it will therefore be taught at a majors biology level. It introduces the principles and concepts that describe living systems at the molecular and cellular levels, including scientific methods of inquiry; features distinguishing viruses, prokaryotic, and eukaryotic cells; membrane structure and transport; metabolic processes and pathways; and macromolecules within an evolutionary framework. This class will therefore include a significant amount of chemistry and math and it is highly recommended that you have college algebra and general chemistry in your background or are taking them concurrently.

Purpose of Syllabus

The purpose of the syllabus is to inform you of course expectations, policies, and content. Ignorance of course policies because you did not read your syllabus will not be an acceptable excuse for not adhering to these policies. Because the syllabus is also available online, you cannot lose it. By accepting this syllabus and remaining enrolled in the course, you affirm that you understand the contents of this syllabus and that you will adhere to its requirements.

Course Objectives

The successful student will:

1. Understand and use scientific methods of inquiry and reporting.
2. Identify properties of the major molecules of life.
3. Recognize the similarities and differences among viruses, prokaryotic cells, and eukaryotic cells.
4. Describe the structure of cell membranes and mechanisms for movement across membranes.
5. Identify important metabolic pathways including substrate, products, and regulatory interactions.
6. Describe information flow from nucleic acids to proteins including chemical structures, synthesis, and regulation.
7. Recognize the unity and diversity of life and their origin in evolution through natural selection.

Textbook & Instructional Materials

1. *Life: The Science of Biology*, 12th edition. Print (Pearson). Hillis, Heller, Hacker, Hall, Laskowski, and Sadava. **A book is REQUIRED.** You must have a book to pass this class. Electronic books and rentals are acceptable.
2. **Scientific Calculator:** bring your calculator every day. You may be asked to use it.

3. **Reliable Internet** and access to a personal **computer** (your own or a lab). You must be able to play tutorials, access material on D2L, and upload assignments in Microsoft Word files to Dropbox on D2L if asked to do so. You should also have a webcam in the event online proctoring is required.
4. Access to **D2L** and all materials that are there. You will need to access homework and answer keys, online tutorials, and extra reading assignments.
5. **Scanning Capability**: either download a free scanner app for your phone or have scanning technology. You may need to upload work to Dropbox and some of it may require scanning.
6. **Printing Capability**: if you do not own a printer, there are printers on campus. When you are told to print assignments and turn them in, it is expected that you follow directions. Emailed assignments will be treated as **LATE** and will be discarded.
7. **Stapler**: there is no excuse for not turning in stapled work. Work that is turned in NOT stapled will be treated as **LATE** and will be discarded.

Study Hours and Tutoring Assistance

For every 1 hour in class, students should spend 3 hours outside of class studying, reading, doing homework, and otherwise preparing for this course. Free tutoring will be available during the semester through the Academic Success Center (usually over in the library). You cannot expect to do well if you do not work at it.

Expectations and Goals

It is expected that you will try your best to understand the material; complete all quizzes, exams, and assignments; ask for help when you need it; and seek to understand why you are in this class (what purpose does it serve to you, your major, and your future?). It is **expected** that you will prepare for class ahead of time, follow instructions, and commit to doing well in the class. If you do NOT do these things, you will not pass the class.

Grading

LECTURE grades will be assessed based on the following percentages. Your final lecture grade WILL BE combined with your final lab score to give you an overall class grade.

Table 1: Distribution of Lecture Points.

Assignments	Percentage of Grade
EXAMS (2 Midterms + Comprehensive Final (400 points)	60%
Weekly Quizzes (12 at 15 points each; lowest dropped)	25%
Homework (Working with Data/Statistical Analysis)	10%
Reading Assignments (Scientific Literacy)	5%

Table 2: Percentage Breakdown for Final Grades.

Grade	Percentage Range
A	89.5% and higher
B	79.5% to 89.4%
C	69.5% to 79.4%
D	59.5% to 69.4%
F	59.4% and lower

Homework and Reading Assignments

Throughout the semester, homework and reading assignments will be given. Due dates will be announced at the time the work is given. Homework will involve the Investigating LIFE/Working with Data boxes in the text and

general statistics homework. Reading assignments will consist of questions to be answered after reading papers from the scientific literature (2 will be historical, 1 will be current). Anyone majoring in the sciences needs to be science literate, and this means you must be able to read the literature of science and understand the basic statistical tools used to analyze data. You can only do this by working with data and reading papers for yourself. Homework will consist of answering questions, making graphs and tables, and performing statistical tests that I will teach you. You will need access to a basic spreadsheet program or other graphing program and a calculator as I will teach you how to do statistical tests by hand so that you can do them on quizzes and exams. Homework is essential. Homework and Reading Assignments are also 15% of your overall lecture grade so you **MUST** do it.

Reading the Textbook

Every student is expected to have a textbook and to read it. I am not going to provide you with slides, nor present slides in class where you just copy down information without listening. Instead, class will consist of drawing content and discussing ideas. You must then take your drawing/notes home and annotate them and work with them to put the information together so you understand it. The only way this will work, however, is if you **PRE-READ** before each class (to get a sense of what will be drawn) and then **RE-READ** once you have your notes (so you can annotate them). ***I will, in fact, expect you to both pre-read and re-read and annotate.*** If you don't do these things, you will likely not pass this class.

Quizzes

Quizzes will be given every Friday except exam days. They will be given physically in class. Quizzes will consist of questions from the textbook to see if you are reading, questions from lecture to see if you are paying attention, and questions from the homework to see if you are doing the work. Questions may be a mix of multiple choice, short answer, and/or math. Quizzes are **NOT** open-note, open-book, or open-internet (**NO PHONES**). Quizzes are to represent **YOUR** best effort.

There will be NO make-ups for missed quizzes regardless of reason. Missed quizzes are marked as zero. Each quiz will be worth **15 points and there will be a total of 12 quizzes**. The lowest quiz grade will be dropped (missed quizzes beyond the 1 drop will count against you). Quizzes are 25% of your grade—do **NOT** blow off the quizzes. Poor quiz scores will drag your grade down, making it impossible to make-up the difference. Note: it does **NOT** matter why you miss a quiz, it counts as a zero. You are required to be in class.

Disability students must take their quizzes under the same conditions as all other students.

Midterm Exams

There will be 2 (**two**) midterm exams. Midterms will be composites of multiple-choice questions, fill-in or short-answer questions, and problems and generally will not be cumulative. Midterms are designed to test problem-solving skills. These types of exams cannot be crammed for; you must study every day to do well and to finish the exams in the allotted timeframe. All exams are **TIMED**. Exam dates are listed on the Lecture Schedule and will not be moved. No make-up midterms will be offered.

Students with a legitimate, excusable reason for missing a midterm will be given consideration. A substitute score based on the final will be used to replace the zero received. **Excusable reasons** for missing an exam include: a) extreme and verifiable illness (you must provide doctor/hospital verification); b) accident or injury (must present verification); c) MSU sanctioned event (active participant and you must have provided documentation **BEFORE** the exam); and d) extreme family emergency (e.g., funeral the day of the exam; immediate family only). **Inexcusable reasons** for missing an exam include: a) scheduling doctor, dentist, therapy or other appointments for the day/time of the exam (possible exception: court dates); b) failure to show up (this includes sleeping through the exam); c)

weather (if MSU is open, then you must be here); d) congested exam schedule or overlapping classes; e) failure to obtain babysitter or caregiver; and f) work schedule conflict. Students **MUST** notify me **PRIOR** to the start of the exam to receive consideration for an excused absence. Notifying me after the fact will result in an unexcused absence. You only get 1 excused absence.

Absolutely no electronic devices of any kind may be used during exams. All exams are closed book and will be monitored for cheating. If you are caught doing anything suspicious, your exam will be taken away from you and you will receive an automatic zero for the exam. NOTE: using old notes and exams from other students to prepare for this class is considered cheating and is not allowed. Copying your notes or exams to give to others either in or out of this class is considered cheating and is not allowed. Working in small groups for the purposes of skewing exam scores is considered collusion and is not allowed.

COMPREHENSIVE Final Exam

All students will be required to take a comprehensive final exam. You **MUST** begin to prepare for the Final on the first day of the semester as you can't cram for a comprehensive final. If you make study guides as you go, studying for your exams becomes much easier. There are **NO** excused absences for the final.

Extra Credit

Absolutely **NO** extra credit of any kind will be offered for this course. You must earn your grade by doing the assigned work. Bonus questions may be appended to some exams, quizzes, or assignments, but they will represent problems you need to know how to do anyway.

Late Work

Absolutely NO late work will be accepted from anyone for any reason. Deadlines are hard deadlines. You are given at least a week to work on assignments so there is **NO EXCUSE** for you not to complete them. Note: forgetting assignments at home is **NOT** acceptable behavior in college, so you do **NOT** get to run home and get it. Assignments are due even if you are sick because you should have started working on it the day you received it. You do **NOT** get extensions for being in athletics or members of other traveling groups.

Make Up Work/Tests

Absolutely NO make-ups will be allowed for any assignment, quiz, or exam. Legitimate absences will be worked around (**documentation must be provided**), but not through a make-up process. Do **NOT** ask for a chance to take things early, late, or "at another time".

SARS-CoV-2/Influenza Statement

SARS-CoV-2 is a real infectious agent that can and does sometimes kill those it infects. Symptoms for SARS-CoV-2 include (but are not limited to) fever greater than or equal to 100.0 °F, cough, shortness of breath or difficulty breathing, sore throat, loss of taste or smell, chills, muscle pain, and headache. Many of these symptoms overlap with those of influenza. Many people do not show symptoms, yet they are infectious. If you have a fever, you should **NOT** be coming to class. If you are demonstrably ill, you should **NOT** be coming to class. There is a vaccine for SARS-CoV-2; you should be vaccinated. You should know how to prevent infection. Because there is vaccine, and because you know how to prevent infection, no accommodations will be made for anyone claiming COVID related problems. Masks **ARE** allowed in my classroom and you are encouraged to wear them if you have not been fully vaccinated.

Important Dates

Last day for term schedule changes: August 26, 2021

Last Day to drop with a grade of “W”: 4:00pm on October 25, 2021

Desire-to-Learn (D2L)

Extensive use of the MSU D2L program is a part of this course. Each student is expected to be familiar with this program as it provides a primary source of communication regarding assignments, examination materials, and general course information. You can log into D2L through the MSU Homepage. If you experience difficulties, please contact the technicians listed for the program. **D2L has an app called Pulse that can be downloaded to your phone to help you keep track of all of your courses—USE IT!!!**

Attendance

Students are expected to attend all meetings of the classes in which they are enrolled. **Lecture attendance is thus required.** Students with excessive absences may be instructor dropped from the course with an “F”. Missing more than 6 classes in a MWF class is considered excessive. **ZOOM will NOT be offered.** If you miss class, YOU are responsible for getting notes from another student in class—I will NOT provide them.

Students are expected to always be ON TIME. Students are expected to have read all required materials before walking into class. If you need to leave class early, it must be for a good reason and you must tell me before class begins or you will be marked absent.

Instructor Class Policies

1. **Do not walk through the classroom or leave once class has begun (exception: sudden illness) and NEVER WALK IN FRONT OF ME ONCE I HAVE BEGUN TO LECTURE.** It is disrespectful to me and to the other students to have you cut in front of the room to get to your seat and to wander in and out. Go to the bathroom BEFORE you walk in; if you can't get from class to class on time, YOU need to figure out how to resolve that problem. **Do NOT be late; being late is rude to other students and to the faculty.**
2. **Do not talk during lecture except to ask questions of the instructor.** If you miss something, ask me, not the person sitting next to you.
3. **Do not engage in disruptive or disrespectful behavior.** Do not play games on your electronic devices or play with your social media sites, do homework for other classes, read books or newspapers, sleep, listen to music, etc. during the lecture; pay attention to the lecture! Do not eat or drink in class as this is prohibited in the classrooms.
4. **Do NOT text in class.** If texting is more important than taking notes, then you don't need to be in class so do not bother coming.
5. **Turn off or silence (note: vibrate is not the same as silent) all cell phones, pagers, music devices, and other electronic devices that make noise or have the potential to disrupt the class before you walk into the room.** NO cell phones are permitted to be out and/or in my (or your) sight in this class UNLESS you are given permission to use it. If your phone is out and/or in sight and/or you are caught using it and/or it goes off during lecture, you will be asked to put it away and you will **lose 1% from your final lecture grade in the course for each violation.** If you want to use your phone to record the lecture, it must be placed at the front of the room and out of your reach. **Again, if all you are going to do is text during class, don't bother coming and drop the course since you won't get anything from it.**
6. **No laptops/tablets are allowed UNLESS YOU HAVE EXPRESSELY SOUGHT PERMISSION TO USE IT IN CLASS.** If you have a tablet and stylus and want to draw and take notes on it, that is fine, but typing alone will not help you. You need to physically take notes to learn the material. ALL ear buds, blue-tooth buds, and

headphones to phones and music devices must be turned OFF during class AND REMOVED FROM YOUR HEAD and put in your backpacks.

Disruptive students will be given one (1) verbal warning to improve their behavior. Second offenders will be asked to leave the classroom and will be referred to the Dean of Students. Abusive students will be dismissed from the class permanently.

University Teams and Organizations

All members of in-season sports teams or other campus organizations who will be missing class because of university sanctioned events MUST present to me a written statement on university letterhead and signed by a university official indicating those dates that will be missed because of travel or participation in the university-sponsored event. Athletics documentation must be presented to me within the first 2 weeks of the beginning of the semester. Other documentation (such as for theater, etc.) must be presented to me at least one week prior to the time that will be missed. NOTE: if you KNOW you will be missing more than 3 classes during the semester, you MUST come talk with me the first week.

Services for Students with Disabilities

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. In accordance with Section 504 of the Federal Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, Midwestern State University endeavors to make reasonable accommodations to ensure equal opportunity for qualified persons with disabilities to participate in all educational, social, and recreational programs and activities. After notification of acceptance, students requiring accommodations should make application for such assistance through Disability Support Services, located in the Clark Student Center, Room 168, (940) 397-4140. Current documentation of a disability will be required in order to provide appropriate services, and each request will be individually reviewed. **The instructor then needs to be notified by the student of the nature of these accommodations. This notification will take the form of an official letter obtained from DSS by the student and given to the instructor.** Every effort should be made to provide me with this documentation within the first 2 weeks of the semester to avoid losing accommodations because you failed to provide proper notification in a timely manner. **It is always the responsibility of the student to arrange accommodations with DSS.** Students with disabilities must still take their exams on the same day as the rest of the class. For more details, please go to Disability Support Services.

College Policies

- 1. Campus Carry Rules/Policies:** Senate Bill 11 passed by the 84th Texas Legislature allows licensed handgun holders to carry concealed handguns on campus, effective August 1, 2016. Areas excluded from concealed carry are appropriately marked, in accordance with state law. For more information regarding campus carry, please refer to the University's Campus Carry homepage. If you have questions or concerns, please contact MSU Chief of Police Patrick Coggins at patrick.coggins@mwsu.edu.
- 2. Smoking/Tobacco Policy:** College policy strictly prohibits the use of tobacco products in any building owned or operated by WATC. Adult students may smoke only in the outside designated-smoking areas at each location.
- 3. Alcohol and Drug Policy:** To comply with the Drug Free Schools and Communities Act of 1989 and subsequent amendments, students and employees of Midwestern State are informed that strictly enforced policies are in place which prohibits the unlawful possession, use or distribution of any illicit drugs, including alcohol, on university property or as part of any university-sponsored activity. Students and

employees are also subject to all applicable legal sanctions under local, state and federal law for any offenses involving illicit drugs on University property or at University-sponsored activities.

4. **University Code of Conduct:** In general, students are to attend all meetings of all classes; instructors may drop students for excessive absences, indifference, disruptive behavior, or failure to complete class assignments; students are prohibited from cheating, plagiarizing, or colluding. Students are expected to have read the Student Handbook.
5. **Academic Dishonesty:** Cheating, plagiarism, and collusion (as well as several other forms of conduct) are all strictly prohibited at MSU. Please read the MSU Student Handbook definitions of cheating, plagiarism, and collusion and MAKE SURE that you do not engage in any of these behaviors. If you are unclear on what may count as cheating, plagiarism, or collusion after reading the material below, please see the instructor or the Dean of Students.
 - a. The term “**cheating**” includes, but is not limited to: (1) use of any unauthorized assistance in taking quizzes, tests, or exams; (2) dependence upon the aid of sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems, or carrying out other assignments; or (3) the acquisition, without permission, of tests or other academic material belonging to a member of the faculty, staff, or another student.
 - b. The term “**plagiarism**” includes, but is not limited to, the use, by paraphrase or direct quotation, of the published or unpublished work of another person without full and clear acknowledgment. It also includes the unacknowledged use of materials prepared by another person or agency engaged in the selling of term papers or other academic materials. Plagiarism also includes the use of someone else's thoughts, words, ideas, or lines of argument in your own work without appropriate documentation (a parenthetical citation at the end and a listing in "Works Cited") whether you use that material in a quote, paraphrase, or summary. It is a theft of intellectual property and will not be tolerated, whether intentional or not.
 - c. The term “**collusion**” means collaboration with another person in preparing any work offered for credit if that collaboration is not authorized by the faculty member in charge.
 - d. **Student Honor Creed:** “As an MSU Student, I pledge not to lie, cheat, steal, or help anyone else do so.” You should memorize this and live by it.
 - e. **Any form of cheating, plagiarism, or collusion will result in a 0 (zero) for the assignment/exam/quiz.** Repeated cheating will result in an F in the course and an instructor drop (with F).
6. **Safe Zones Statement:** The professor considers this classroom to be a place where you will be treated with respect as a human being regardless of gender, race, ethnicity, national origin, religious affiliation, sexual orientation, political beliefs, age, or ability. Additionally, diversity of thought is appreciated and encouraged, provided you can agree to disagree. It is the professor's expectation that ALL students consider the classroom a safe environment.
7. **Instructor Drops:** According to the MSU Student Handbook, “An instructor may drop a student any time during the semester for excessive absences, for consistently failing to meet class assignments, for an indifferent attitude, or for disruptive conduct.” For the purposes of this course, “consistently failing to meet class assignments” includes consistently not turning in assigned work or turning in work that consistently receives a failing grade.
8. **Intellectual Property:** By enrolling in this course, the student expressly grants MSU a “limited right” in all intellectual property created by the student for the purpose of this course. The “limited right” shall include but shall not be limited to the right to reproduce the student’s work product to verify originality and authenticity, and for educational purposes.

Study Tips

1. The best way to learn biology is to DRAW IT. You do NOT need fancy software for this, or apps, or online learning platforms. You need a blank piece of paper and colored pencils. For every chapter we cover, there is at least one core concept that links to every other chapter—find it, study it, draw it to know it.
2. Every day you should go home and go through your notes. **Annotate** them, expand them, mark what is difficult. Then, go to the book and review only the problem sections and add to your notes. Notes are only useful if they are annotated. The more you write, the more you learn.
3. **Make your own study guides.** These are derived by taking your picture from step 1 and adding the annotations from step 2 to make a 1-sided 1-sheet study guide for every chapter. You then study these, lay them out and see how they link together, and put together a comprehensive study guide where all chapters are ultimately represented on one master study sheet (one sheet to rule them all).
4. **Study and review EVERY DAY.** You cannot be an A student without a lot of work.
5. **Do your OWN work.** You can form study groups, etc., but do your own study guides and annotations as well. For study groups to work, all members must actually study BEFORE getting to the group.

Notice

Changes in the course syllabus, procedure, assignments, and schedule may be made at the discretion of the instructor.

Course Format:

1. This class will be taught as a **hybrid flipped classroom**. **Students are responsible for reading the corresponding sections in the textbook prior to coming to each class. Class time will be reserved for highlighting key concepts and drawing biology.** Most of class time will be spent drawing.
2. **Tutorial videos** may be uploaded to help with some of the statistics.
3. You **MUST** do the homework and work with data. You must read the journal articles that are assigned. You can only learn a science by immersing yourself in it. If you find that you simply do not like the subject well enough to work with it every day and get excited about each new piece of information learned, you are likely in the wrong major.

IMPORTANT: This is a biology course designed for biology/chemistry majors and will be taught at a major's level comparable to any major's biology course taught at the elite schools in the country. Just because you are paying less, doesn't mean you should expect less than a top-notch education. This also means that we, the faculty, expect you to put in the same work here as you would at an elite school.

Schedule

Week	Dates	Topics/Problems	Quiz/Exam
1	M Aug 23	Syllabus; Course Introduction	
	W Aug 25	Statistics for Biology; Draw it to know it—for free	
	F Aug 27	Cp. 1: Studying Life <i>Drawing 1: What is biology?</i> <i>Drawing 2: The Central Dogma</i>	Quiz #1
2	M Aug 30	<i>Drawing 3: The Scientific Method</i>	
	W Sept 1	Cps. 2 – 4: Chemistry and the Molecules of Life <i>Drawing 1: Atoms and Elements</i>	
	F Sept 3	<i>Drawing 2: Chemical Bonds</i>	Quiz #2
3	M Sept 6	LABOR DAY – NO CLASS	
	W Sept 8	<i>Drawing 3: Proteins</i>	
	F Sept 10	<i>Drawing 4: Carbohydrates</i>	Quiz #3
4	M Sept 13	<i>Drawing 5: Lipids</i>	
	W Sept 15	<i>Drawing 6: Nucleic Acids</i>	
	F Sept 17	<i>Drawing 7: Putting it all together</i>	Quiz #4
5	M Sept 20	Cp. 5: The Cell (Basic structure and parts) <i>Drawing 1: Cells Compared</i>	
	W Sept 22	<i>Drawing 2: Cells: Pieces and Parts</i>	
	F Sept 24	EXAM 1: CHAPTERS 1 – 5	EXAM #1
6	M Sept 27	Cp. 6: Cell Membranes <i>Drawing 1: The Cell Membrane</i>	
	W Sept 29	<i>Drawing 2: The Na/K Pump and Glucose (transport)</i>	
	F Oct 1	Cp. 7: Cell Communication <i>Drawing 1: Cell Signaling</i>	Quiz #5
7	M Oct 4	<i>Drawing 2: Types of Signaling Systems</i>	
	W Oct 6	<i>Drawing 3: Second Messenger Systems</i>	
	F Oct 8	Cps. 8 – 10: Cell Metabolism <i>Drawing 1: Energy/Enzymes/Redox Reactions</i>	Quiz #6
8	M Oct 11		
	W Oct 13	<i>Drawing 2: Core Metabolism (Glycolysis, CAC, ETC)</i>	
	F Oct 15		Quiz #7
9	M Oct 18	<i>Drawing 3: Photosynthesis</i>	
	W Oct 20		
	F Oct 22	<i>Drawing 4: C3 vs. C4 (realities of plant life)</i>	Quiz #8
10	M Oct 25	Cp. 11: The Cell Cycle <i>Drawing 1: The Cell Cycle</i> <i>Drawing 2: Mitosis</i>	
	W Oct 27	<i>Drawing 3: Meiosis</i>	
	F Oct 29	EXAM 2: CHAPTERS	EXAM #2
11	M Nov 1	Cp. 12 – 13: DNA Basics <i>Drawing 1: Mendelian Genetics</i>	
	W Nov 3	<i>Drawing 2: Probability and Variation</i>	
	F Nov 5	<i>Drawing 3: DNA Replication</i>	Quiz #9
12	M Nov 8	Cps. 14 – 16: Gene Expression <i>Drawing 1: The Central Dogma</i>	
	W Nov 10	<i>Drawing 2: Transcription</i>	
	F Nov 12	<i>Drawing 3: Translation</i>	Quiz #10
13	M Nov 15	<i>Drawing 4: Variation/Mutation</i>	
	W Nov 17	<i>Drawing 5: Lac Operon</i>	
	F Nov 19	<i>Drawing 6: Transcription in Eukaryotes (modifications)</i>	Quiz #11
14	M Nov 22	<i>Drawing 7: Lytic and Lysogenic Virus Life Cycles</i>	

Week	Dates	Topics/Problems	Quiz/Exam
	W Nov 24	THANKSGIVING HOLIDAY – NO CLASS	
	F Nov 26	THANKSGIVING HOLIDAY – NO CLASS	NO Quiz
15	M Nov 29	Cp. 17: Genomes and SARS <i>Drawing 1: Genomes and Genomics</i>	
	W Dec 1	<i>Drawing 2: SARS Life Cycle</i>	
	F Dec 3	<i>Drawing 3: Understanding SARS variants</i>	Quiz #12
FINALS	M Dec 6	FINAL EXAM 8:00am – 10:00am; Cumulative	