Welcome to Principles of Biology (Biol 101). This introductory course in Biology will explore the basic characteristics of living matter from the molecular level to the ecological community with special emphasis on general biological principles. Topics to be covered include the chemistry of life, fundamentals of molecular and cell biology (both plant and animal cells), principles of inheritance, and the taxonomy and evolution of living organisms.

Textbooks:

Lecture - Biology, Concepts, and Applications, 7th Edition by Cecie Starr

Chapters associated with the lectures are listed on the course schedule page. Topics discussed in class and additional material described in the chapters could be on exams. Students are expected to read the required chapters (see course schedule/topics

Nowadays, publishers put useful audio study tools, animations, and tutorials on the internet. These "premium" services for our Biol 101 text book are all located at CengageNOW. These services will come free with the purchase of an ebook or a new textbook. As your instructor, I highly recommend that you use all of these tools. I am excited about how technology is changing the way we think about college textbooks!

Course Website: http://blackboard.unc.edu/ (you will need your onyen to log on)

This site will have postings from my lectures such as outlines, power point slides, and supplemental material I mention in lecture. I will also post announcements regarding student concerns on this site. It is your responsibility to check it regularly.

Course Goals:

1. This course should prepare you to succeed in future science courses. You should learn how to be an active learner and you should learn how to actively study.

   There is no magic formula that works for each student. Some students find they learn best when they write and re-write notes, others need to record the lecture and re-listen, others like to make models and "act out" biological processes. And what if you don’t plan to take any more science classes? Active learning and studying is a skill that is needed for any discipline! You should be thoroughly evaluating your exams to see what kinds of questions you are missing (remembering, understanding, applying). I take a special interest in students improving their skills and my office hours are always open (no appointment necessary) to discuss this.

2. This course should provide you with the basic language and principles of biology.

   For those of you continuing in biology, this is just the tip of the iceberg. For others, this might be your only biology course. You can achieve this goal by practicing vocabulary and learning the latin/greek roots of words. You can draw slides and label the components. You can find common themes in the chapters we cover, such as how the theory of evolution applies to chapters not specifically about evolution. Thoroughly learning the principles is about making connections between material learned at the beginning, middle, and end of the semester! Repetition is key to building a foundation of knowledge (and that is why you have lecture, a textbook, SI, etc.).

3. This course should excite you about biology.

   Throughout the semester I hope you will ask yourself and me, why is this relevant to me? Some lessons will be obvious (e.g. how blood flows through your heart). Other lessons are less obvious (e.g. learning the Hardy-
Weinberg equation. Biology is the study of life and living organisms, including their structure, function, growth, origin, distribution, and taxonomy. I want to encourage you all to find one topic in the vast topics we discuss in this course that you find fascinating and have a personal connection to.

4. The importance of asking questions.
Early in the semester you will learn how science is performed. The scientific protocol discussed in this course dealing with problem solving can also be applied to all disciplines not just science courses. I encourage you to think about the content you learn through the semester and continually realize that each sentence in the textbook may represent years of rigorous testing and data collection. I hope what we learn this semester will cause you to ask more questions. All knowledge has been obtained by asking the right questions, please ask questions on anything and everything!

Grading
Exams: There will be 3 exams given during the summer course.
The format will be multiple choice, so bring #2 pencils to the exam. The first two exams are not cumulative exams and will only cover the material specified on the course calendar. The final exam is 75% material pertaining to the final classes and 25% cumulative material from the entire class. The final exam will be given on July 22nd from 11:30am - 2:30pm. Test material to study: most questions will come from my lecture, including power point slides. Some questions will also come from the chapter readings that I may not discuss or go through quickly in lecture. Therefore, to succeed in this class, it behooves you to come to all lectures and read required chapters. Your book has a great website with many practice questions...

To see exam scores, log into student central and follow the link for “results of machine scored exams”. For all exams, you will need your PID number as identification on your exam sheet. Additionally, you may be asked to verify your identity, so it is required that you bring your one-card to each exam. Failure to produce a one-card if asked may result in a zero on that exam.

This is a summer course and is fast and intense. For this reason there will be NO MAKE-UP EXAMS and NO EXAMS GIVEN EARLY!

If there is a discrepancy in the grading of any assignment or exam please meet with me during office hours to discuss the question. If you cannot make the office hours than call or email me to schedule a time for us to meet. I will NOT discuss grades immediately prior to or following lectures.

Quizzes:
During the first 15 minutes of 5 lectures [listed in the calendar] you will be given a 20 point quiz on the previous 3-4 days of lectures and readings. If you come to class on time you get the full 15 minutes, if you come to class 5 minutes late you get 10 minutes for the quiz, and if you come 16 minutes late for class you do not get to take the quiz. There will be 5 quizzes and the combined score will be counted as an exam (25% of the total grade).

If there is a discrepancy in the grading of any assignment or exam please meet with me during office hours to discuss the question. If you cannot make the office hours than call or email me to schedule a time for us to meet. I will NOT discuss grades immediately prior to or following lectures.

Class Assignment: Bench to Bedside Paper
Each student must write at a 2 page paper on a biological disorder associated with a defect in a topic discussed in class. Students must research and describe the medical characteristics or bedside facts of the disorder, including human symptoms, physical phenotypes, disease onset, mortality rates, and transmission factors. Secondly, the student must also investigate the cellular basis of the biological disorder or the bench-side [laboratory] facts. These characteristics will focus on the specific gene or genes mutated in the disorder and the molecular biology pathways that are disrupted. Finally the paper must include a discussion of the current medical treatments associated with the biological disorder, if a treatment exists, and how the treatment bridges the gap between the bench and the bedside.

This assignment is worth 20% of the final grade and is due by midnight on Friday July 16th. You will lose 20 points for every day the paper is late and I will no longer except the paper after July 19th. Additionally, you must attach the following pledge to the end of your assignment.

“I pledge that I have neither given nor received unauthorized assistance on this assignment and it is entirely my own work”
Final Grade Breakdown:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bench to Bedside Paper</td>
<td>20%</td>
</tr>
<tr>
<td>Exams #1, #2, Quizzes</td>
<td>50%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>30%</td>
</tr>
</tbody>
</table>

*The lowest grade of the the following: Exam #1, Exam #2, and Quizzes will be dropped

If there is a discrepancy in the grading of any assignment or exam please meet with me during office hours to discuss the question. If you cannot make the office hours than call or email me to schedule a time for us to meet. I will NOT discuss grades immediately prior to or following lectures.

Honor Code:
On every exam each student must pledge:

“I hear-by certify that during this examination I have neither given nor received aid”

You will also add a pledge to the end of the Bench to Bedside Paper (see the assignment’s instructions above). The Biology Department at UNC assiduously uphold the university’s Honor Code. I will meet with any student that is suspected of violating the Honor Code and will report the student to the Honor System if necessary.

Attendance:
This intensive course covers a wealth of key concepts and principles in a relatively short period of time. Missing lectures typically reflects poorly on a student’s success in the class. Therefore, attendance will be mandatory. Five unexcused absences will result in the failure of the course. If you miss a class for a valid reason, such as a serious illness, a death in the family, a car accident, etc., you must provide official documentation for the absence to be excused. It is also expected that students make it to class on time.

Class Disruption:
The instructor reserves the right to dismiss students from class who are disruptive (e.g. derogatory language, excessive talking or laughing, disrespect towards other classmates and/or instructor). Fifteen points will be deducted from your course point total each time you are dismissed. If such behavior is habitual, then administrative action will be necessary.

Lecture Calendar:

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Chapter(s)</th>
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</thead>
<tbody>
<tr>
<td>June 17th</td>
<td>Introduction to Biology/The Scientific Method</td>
<td>Chapter 1</td>
</tr>
<tr>
<td>June 18th</td>
<td>Molecules of Life</td>
<td>Chapters 2 &amp;3</td>
</tr>
<tr>
<td>June 21st</td>
<td>Cell Structure</td>
<td>Chapter 4</td>
</tr>
<tr>
<td>June 22nd</td>
<td>Prokaryotes and Eukaryotes</td>
<td>Chapter 4</td>
</tr>
<tr>
<td>June 23rd</td>
<td>Cell Metabolism – Quiz #1</td>
<td>Chapter 5</td>
</tr>
<tr>
<td>June 24th</td>
<td>Photosynthesis</td>
<td>Chapter 6</td>
</tr>
<tr>
<td>June 25th</td>
<td><strong>EXAM 1 • CELLS</strong></td>
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<tr>
<td>June 28th</td>
<td>Cell Cycle &amp; Mitosis</td>
<td>Chapter 8</td>
</tr>
<tr>
<td>June 29th</td>
<td>Meiosis and Genetic Variation</td>
<td>Chapter 9</td>
</tr>
<tr>
<td>June 30th</td>
<td>Inheritance I</td>
<td>Chapter 10</td>
</tr>
</tbody>
</table>
Helpful hints for success in this course:

✴ This will be an INTENSE course! With hour-and-a-half classes every day it will be very easy to fall behind. It is CRUCIAL that you keep up with the readings and lectures. Take every opportunity to read ahead in the textbook. For most of you this is the only course you’re taking. But don’t assume that you have a lot of free time. Read and study EVERY night, and use the weekends to read ahead.

✴ Read the textbook chapter for each lecture BEFORE coming to class. We will not have time during the lecture to cover every detail in the book. Therefore it will be very important for you to come to the lectures as prepared as possible. EACH night you should turn off the TV, unplugged the iPod, turn off the cell phone, and read for at least an hour.

✴ Take good notes DURING class. Objective and questions throughout the class... what is important and I urge you write/type the answers rather than simply read the questions and think about them. Writing things down really helps you learn and retain the material.

✴ Review the text, your notes, and the Powerpoint lectures AFTER class. The Powerpoint files will be available at the course website in the afternoon following each lecture. The more ways you go over the material the better you will remember it. Because we have class EVERY DAY, it is very important that you review you notes EVERY DAY as well. Much of the material in class relates to the material in the previous class, so it’s important that you learn one lecture before the next day’s lecture.

✴ Take the 5 quizzes seriously. These are a good way to help your grade and to see what you are retaining from your reading and lectures.

✴ Attend ALL lectures. Looking over the Powerpoints and notes that I will provide to you is NOT the same as listening to me explain things in person and participating in classroom activities. Hearing me explain a concept or participating in a learning exercise stimulates a different part of your brain than reading about it does. These actions help you retain the information better.

✴ ASK questions in class. I know it can be intimidating and potentially embarrassing to ask a question in a room full of strangers, but it’s also the most direct way to get the answers! And I guarantee that if you have a
question, lots of other people have the same question. So be brave! This is the basis of all knowledge... everything we know today is because some one in history asked a question!

* Find a classmate to study with. Talking about material will significantly enhance your learning, and it is a good way to be sure you took comprehensive notes. Also, if you know someone who needs extra help learning the material, offer to explain it to them in person or via email, etc. This will benefit you AT LEAST as much as it helps them. The best way to learn anything is to teach it to others. Trust me! Here’s some studying suggestions: Write down the material in your own words, explain the material out loud to someone (or to yourself), have someone else ask you questions, answer relevant practice questions at the end of each chapter in your book and on the book’s website.

* Discuss material and concerns with me during office hours, after class, or by email. I want to help, but I can’t unless I know you need some. My door is always open and I want you all to succeed and will do whatever I can to help.

* Uphold the honor code. Observing the Honor Code means that during exams, you may not look at another person’s exam; talk to anyone, either in person or by cell phone or email; or use the Internet, another person’s calculator, or any other text or notes. Please report any violations that you observe.