Introduction to Cell and Molecular Biology Description:
This course follows the traditional approach to Cell Biology with emphasis on how molecular biology can be used in engineering. Starting with the basis of Biology, Chemistry, understanding the atom and bonds leading to the biomacromolecules, understanding energy production; how the body obtains the necessary nutrients it needs and why certain foods are good for you, understanding the life cycle of a cell, from protein synthesis to cellular reproduction and finally leading to the understanding of genetics, Mendelian vs Non-Mendelian genetics. This course includes 3 hour labs, and is geared for Biology Majors and satisfies Pre-Med requirements. This course does not assume the student has any scientific knowledge but it does expect students to understand logic and scientific reasoning.

Learning Outcomes:
After completing this course, you should be able to:

- Demonstrate the ability to use scientific method to design experiments and interpret data in quantitative and qualitative forms.
- Evaluate the validity of scientific information in the media.
- Understand the biomacromolecules that build life and how they can be tested.
- Understand the cell cycle, and how are proteins made and coded.
- Separate facts from hypotheses and theories.
- Summarize how factors such as nutrition, activity-level, stress-level, drugs, and pollutants can affect human health.
- Understand how free radicals are formed and how they can cause mutations.
- Predict the health consequences of the inability to maintain homeostasis.
- Connect cell division to development, growth, and heredity.
- Integrate the relationship between genetic and environmental influences on human traits and predict genotypes and phenotypes using genetic calculations.
- Integrate the functions of DNA, RNA, and proteins and describe how they are used in biotechnology.

Contact:

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Policies:

- **Attendance:** No more than 2 excused absences (must be excused and e-mail must be sent to instructor within 1 wk of absence, prior notice preferred if possible).
  - Lateness: No more than 4 (15 mins after each class period, beyond this point you will be marked absent). 2 late nesses will constitute an absence.
  - Attendance will affect your grade, so be on time and ready to work.
- **Classes will end on the very last day of class and final exam will be cumulative.** Please do not expect exams to be scheduled before the last day of class.
  - NO make-ups for missed exams
  - NO extra time for entering exams/quizzes late.
  - NO video recording of the class, however audio recording will be permitted.
  - NO curves will be offered.
  - NO extra credit or work will be offered.
- **Please read all the chapters assigned before the meeting of classes.**
- **Academic Integrity:**
  - Plagiarism is the word-for-word reproduction of another writer’s work or ideas; paraphrasing without proper attribution also constitutes plagiarism. Neither will be tolerated in this class. Please see the discussion of plagiarism in the [Student Guide of Academic Integrity](http://core.ls.nyu.edu/page/ls.academicintegrity) for more detailed information. Penalties for plagiarism range from a failing grade for a paper or a course to dismissal from the University.
  - The penalty for plagiarism in this class is a failing grade.
- **Students with Disabilities:**
  - Students with disabilities who believe that they may need accommodations in this class are encouraged to contact the Moses Center for Students with Disabilities at (212) 998-4980 as soon as possible to better ensure that such accommodations are implemented in a timely fashion. For more information, see the CSD website: [http://www.nyu.edu/life/safety-health-wellness/students-with-disabilities.html](http://www.nyu.edu/life/safety-health-wellness/students-with-disabilities.html)
  - **Moses Students:**
    - Members of Student Services must meet with me within the first 2 classes so arrangements can be made. Any students that fail to identify may not be considered for consideration.
- **Communication:** by e-mail tsl2@nyu.edu / State full name, ID# and full course # in all correspondences.
- **Office hrs:** by appt only, please send me an e-mail so we can schedule an appropriate time for us to meet.
- **Final Exam schedules are set by the University and therefore I do not have control over this.**
  - Please DO NOT assume that the exam will be before the last possible day of the final exam schedule.
  - Please DO NOT schedule any personal events before the last possible day of the final exam schedule.
  - If you miss the final exam and have a passing grade, you WILL receive a grade of an INCOMPLETE until the final is taken.
How to study for the course:
1. Read chapters ahead
2. Learn the vocabulary
3. Take notes in class
4. Reread section of the text that corresponds to the work in class.
5. Rewrite your notes with corresponding section of the text.
6. Reread the notes in the morning before class, along with new work.
7. Get notes from colleagues and compare them to yours.

Required Texts:
If you are a BMS major please purchase the following textbook:
  - *Any edition of the textbook is recommended*
  - *ANY EDITION ABOVE 9TH EDITION IS ACCEPTABLE*
  - Used texts are also ok.
  - This textbook will be used in both BMS 1004 and 2004
  - Due to the increase in textbook prices, we recommend buying the textbook from an online vendor and not at the NYU bookstore

If you are NOT a BMS major or ONLY plan to take BMS 1004, please purchase the following textbook:
- **E-Books are available for purchase online**
  - McGraw Hill Online: https://create.mheducation.com/shop/#
  - **Required Lecture Textbook**: ISBN: 9781308863825 for $54.82
    - Course Name is: BMS 1004: Introduction to Cell and Molecular Biology
    - https://create.mheducation.com/shop/#/catalog/details/?isbn=9781308863825
    - Course Name is: BMS 1004: Introduction to Cell and Molecular Biology
    - https://create.mheducation.com/shop/#/catalog/details/?isbn=9781308863818

Grading:
- Lecture: 55%; Each exam is weighed equally of total grade.
- Lab: 35%
- Recitation: 10%
- Grade is determine as
  - A = 96% +; A- = 92 - 96; B+ = 88 – 92; B = 84 – 88; B- = 80 – 84; C+ = 76 – 80; 
  - C = 72 – 76; C- = 68 – 72; D+ = 64 – 68; D = 60 – 64; F = <60
HOW TO PREPARE FOR CLASS:

1. Read ahead and prepare a Pre-lab to be handed in before you start class. The Pre-labs will be graded.
2. **You must wear a lab coat in class.** A lab coat may be rented only **ONCE** during the semester.
3. You may **NOT** wear open toed or meshed shoes at any time.
4. You must have your lab manual or a copy of the lab exercise (appropriate assignment) in class at all times.
5. **DO NOT** enter the Lab without a Teaching Assistant or a Professor being present.
6. **DO NOT** apply lip gloss, lip stick or any other lip protectors in lab.
7. **DO NOT** wear jewelry in class.
8. **DO NOT** use your cell phones or any other electronic media unless you have the consent of the Professor.
9. **DO NOT** bring food or drink into the lab.
10. **Buy the Lab Manual EARLY.**
11. All wastes used in the lab are to be considered toxic, please ask your TA how to dispose of wastes and how to clean your glassware after each lab.
12. Technical grades are based on multiple factors. Some of them include your safety conduct, behavior, lab technique, group participation, interest in lecture, time management and most importantly your leadership skills. These grades are a subjective grade from your TA and professor and are not negotiable.
13. Adhere to the safety protocol found in the preface of your lab manual and explained at the beginning of the class.
14. You must have a locker since books other than the lab manual and its related articles are the only materials that will be allowed in lab. No bags or outer coats other than labwear will be allowed in the lab. (Except for Summer Classes)
15. **First Lab: Download and fill out** the Signed safety sheet. It will be collected on the first day of class.
16. Students should be divided into groups of 3 or 4.
17. Each group will be assigned as a clean up group on a rotating basis, please follow the TAs instruction.
18. **First 15mins of the lab**, you will be administered a lab quizzes on previous lab and current lab; if you are late to class you will get a “0” for this quiz.