Science in the Evenings  
Cell Biology and Physiology BSCI 330  
Fall, 2015

Lecture  
Dr. Elizabeth Read-Connole  
240-565-4049  
E-mail: bread@umd.edu

Laboratory Coordinator & Teaching Assistant (TA)

Objectives:
1. To gain the fundamental knowledge needed to understand biological processes at both cellular and molecular levels  
2. To gain an appreciation of the experimental basis of our current knowledge  
3. To gain insight into the unanswered questions in Cell Biology

Course Description:
Biochemical and physiological mechanisms underlying cellular function; properties of cells which make life possible; and mechanisms, by which cells provide energy, reproduce and regulate and integrate with each other and their environment. Prerequisites: BSCI 105 & CHEM 103

Lecture  
Tuesday: 6:30-9:00 PM in PLS 1146  
Lecture slides can be downloaded from Canvas (elms.umd.edu).  
Textbook Suggested, not required  
Alberts, Bruce, et al.  
ISBN: 978-0-8153-44322

Laboratory Manual  
The laboratory manual is available at the Bookstore in the Stamp Student Union.  
Lab: Thursday 6:30-9:30 PM in BPS 0207  
FIRST LAB MEETING: September 17, 2015

Examinations  
2 hourly examinations of 100 points each to be given on:  
1. Tuesday September 29, 2015  
2. Tuesday November 10, 2015  
Final Examination (200 points)  
The final examination has been scheduled by the University for December 15, 2015 6:30–9:00 PM in usual Class room 1146 PLS
Academic Integrity
Please review the policy on Academic Dishonesty at the University of Maryland at
(www.testudo.umd.edu/soc/dishonesty.html) and on the Honor Pledge. The Honor Pledge is a
statement undergraduate and graduate students should be asked to write by hand and sign on
examinations, papers, or other academic assignments not specifically exempted by the instructor.
The Pledge reads: I pledge on my honor that I have not given or received any unauthorized
assistance on this assignment/examination.

Accommodations for Students with Disabilities
The University has a legal obligation to provide appropriate accommodations for students with
documented disabilities. In order to ascertain what accommodations may need to be provided,
faculty should request that students with disabilities inform them of their needs at the beginning of
the semester. The instructor should then consult with the department chair and Dr. Alan Marcus
Disability Support Services (314-7682). Dr. Marcus will help to determine and implement
appropriate academic accommodations. In addition, sometimes students will encounter
psychological problems that hamper their life on campus and you may wish to refer them to the
Counseling Center (314-7651).

Exam Regrade Policy
You may discuss your examination with Dr. Read-Connole. Please put in writing what you feel
was graded incorrectly. However this discussion must take place within one week of the return of
graded examinations. Only Dr. Read-Connole can alter a grade.
The Teaching Assistant is in charge of all laboratory grading.

Work Missed Because of Absence
Absences caused by religious observances or participation in a University activity at the request of
University authorities may be excused if the TA (for laboratory matters only), or Dr. Read-
Connole is notified of the conflict ahead of time. Absences caused by illness may be excused if a
verifiable letter from a physician indicating the nature of the illness and the necessity of absence is
provided. If you are ill on the day of an exam in addition to a physician’s note you must notify Dr.
Read-Connole prior to 6:30 PM on the day an examination is given. If Dr. Read-Connole is not
notified prior to a scheduled examination you will forfeit your right to a makeup examination.
Please refer to the Undergraduate Catalog for a complete description of the University policy.
Students who have business-related conflicts should let Dr. Read-Connole as soon as possible, and
we will reach a mutually agreeable solution.
Grades
Lecture - 400 points
Discussion Questions - 25 points (you must be present to receive credit)
Laboratory - 200 points
Paper - 50 points
Presentation - 25 points
Possible Total: 700 points
Grade of  A  ≥ 629 points
    B  ≥ 558 points
    C  ≥ 486 points
    D  ≥ 414 points

This grading system is hereby agreed to by all course participants. Thus, there will be no competition among participants, and final course grades will not be discussed/negotiated. You either have the points or you don't!

Appointments
Communication is essential we must hear your comments, questions, etc. Feel free to come to chat before or after lecture. \textbf{Dr. Read-Connole will be happy to meet with you for a longer period if necessary. Please call or E-mail her to set up a mutually agreeable time.}

Lecture Schedule

<table>
<thead>
<tr>
<th>Date</th>
<th>Title</th>
<th>Text Readings</th>
</tr>
</thead>
</table>
| PROTEINS, ENZYMES AND BIOENERGETICS
      |                                          |               |
| 9/1    | Introduction; Life vs. Entropy           | Chp1          |
| 9/8    | Cell Chemistry                           | Chp 2 and 3   |
| 9/15   | Membrane Trafficking: Sorting, Lysosomal Targeting, Secretion and Endocytosis | Chp 12 and 13 |
| 9/22   | Enzymes and Enzyme Kinetics             | Chp 2         |
|        | Bioenergetics: Life Processes Generate Order | Chp 2         |
| 9/29.  | \textbf{EXAM 1 6:30-8:00 Lecture: 8:00-9:00} |               |
| 10/6   | Bioenergetics: Cellular Metabolism       | Chp 14 & 15   |
|        | Apoptosis                                | Chp 18        |
|        | Bioenergetics: Photosynthesis            | Chp 14 & 15   |
MEMBRANES AND CELLULAR COMPARTMENTATION
10/13 Membranes: Composition, Structure, & Physical Properties Chp 10
   Membrane Proteins Chp 10
   Membrane Transport Systems, Active Transport; Chp 11
   Water Permeability

10/20-10/27 MEMBRANE EXCITABILITY
   Membrane Potential, Electrochemical Equilibrium Chp 11
   Electrical Excitability, Action Potentials, Synaptic Transmission
   Neurotransmitters Hormones, Receptors Chp 11

11/03. Cell Communication
   Signal Transduction. Chapter 15

11/10 EXAM 2 6:30-8:00;

CELL–CELL COMMUNICATIONS (cont.)
11/17. Signal Transduction Intracellular Messengers and Regulation of Cell Function

CELL MOTILITY
The Cytoskeleton, Cell–Cell Junctions and Cell Motility Chp 16
   Microtubule Assembly and MT–Based Motility
   Microfilaments and Interaction of Actin–Myosin

CELL CYCLE
11/24. The Cell Cycle, and Its Regulation Chp 17
   Cellular and Viral Aspects of Cancer Chp 20 &
   outside reading

12/1 and 12/8 STUDENT PRESENTATIONS

12/10 PAPER and Questions DUE 12/10 (by 11:55 PM)

12/15 FINAL EXAMINATION
200 total points: = 120–140 points most recent material Cumulative review = 80–60 points