

BOSTON UNIVERSITY DEPARTMENT OF BIOLOGY

BI105 Introductory Biology for the Health Sciences

Professor Elizabeth A. Godrick

Semester I 2012-2013

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Office: SCI 301

Office Hours: Tr 2-3:30pm; Fr 10:30am-noon

This course will examine the molecules of life & their relation to cellular structures & functions (metabolism), the principles of Mendelian & molecular heredity, biology of viruses, bacteria, one celled eukaryotes, & fungi, the concepts of human immune defenses, & the processes of animal development.

LECTURE SCHEDULE AND SYLLABUS

Subject

Individual pages refer to small font page #s

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|---------------------|--|--|--|
| September 4 | Organic Molecules & Origin of Life | ch. 22 (pp. 449-454) (pp. 460-464) | <i>Where is Evolution's Greatest Leap?</i> |
| September 6 | Carbohydrates, Fats, Steroids | ch. 3 + end of text fig. | <i>Are Fats more Fattening?</i> |
| September 11 | Proteins | ch. 3 | <i>Are you only what you eat?</i> |
| September 13 | Organelles (review on your own) Membrane Structure & Function | ch. 4 (pp. 69-70) ch. 5 | <i>Gateways to the So(u)l</i> |
| September 18 | Cell Communication | ch. 10 (pp. 203-211) | <i>Meden agan (nothing in excess)</i> |
| September 20 | Enzymes & Metabolism | ch. 6 | <i>Love is a sac of Enzymes</i> |
| September 25 | | Exam I | |
| September 27 | Energy, Anaerobic & Aerobic Respiration ATP Synthesis | ch. 7 | <i>Woke up this morning....</i> |
| October 2 | Applications of Respiration | ch.7 + end of text figs | <i>Run, Lola, Run</i> |
| October 4 | Cell Cycle; Mitosis; Meiosis | ch 15 | <i>Round, round, I get around...</i> |

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| October 11 | Aneuploidy ch 15 Simple Patterns of Inheritance ch 16 | <i>From the garden to to the genome</i> |
| October 16 | Complex Patterns ch 17 (pp.351-354; Of Inheritance 361-363) | <i>Did you see the stoplight?</i> |
| October 18 | Exam II | |
| October 23 | Nucleic Acid Structure And DNA Replication ch 11 + 419 | <i>What others have seen, they were first to notice!</i> |
| October 25 | Transcription (Gene Expression) ch 12 Regulation of Eukaryote ch 13 Transcription | <i>"To be or not to Be"</i> |
| October 30 | Translation ch. 12 | <i>The Beauty or the Beast</i> |
| November 1 | Mutations, DNA Repair, & Cancer ch 14 | <i>The Eternal Cell</i> |
| November 6 | Prions, Bacteria & Viruses ch 18 ch 27 (background); | <i>"Packages of trouble wrapped in protein"</i> |
| November 8 | One-celled Eukaryotic ch 28 (pp.568-569; 584- Parasites 585) Fungi ch 31 (pp. 638-645) | <i>"The future of humanity unfolds as our wits vs their genes"</i> |
| November 13 | Exam III | |
| November 15 | Invited Speakers: HIV virus (AIDS) Attendance required | |
| November 20 | Defense Mechanisms of the Body ch. 53 | <i>"Self vs the Nonself"</i> |
| November 22 | Thanksgiving | |
| November 27 | Defense Mechanisms of the Body ch. 53 | <i>Don't Sit Under the Apple Tree</i> |
| November 29 | Fertilization ch. 51 (pp.1075-1088) | <i>The Chicken or the Egg?</i> |

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| December 4 | Development | ch 52 ch 19 (pp.396-405;425) | |
| December 6 | DNA Technology For further interest | ch 20 (Selected Figs) ch 21 | "You have made your way from worm to man and much of you i still worm." |
| December 11 | Exam IV | | |

EXAMS

Grading

Four Exams- (17%,18%,19%, 21%)

75%

Laboratory

25%

Students must pass both the laboratory and lecture material to pass the course.

Purchases

Text: Brooker, et al 2010. *Biology, 2nd ed.* McGraw Hill, NY, NY (Barnes & Noble BU Bookstore)

Class Notes & Laboratory Manual: Godrick; Pasino & Godrick. 2011 *Introductory Biology for the Health Sciences*, Image Press, Boston, MA (SCI 301)

Latex gloves and goggles

Read the text before coming to lecture so you can understand the lecture. Review and learn material immediately after lecture. Studying the night before the exam is then easier. Tests are based on recall and application of knowledge to new situations you may not have encountered.

Laboratory

Laboratory sections are mandatory. Attendance is taken. Laboratory work, written and active constitutes the grade. The normal activity in a laboratory is submission of pre lab questions, hand-on performance in laboratory skills, post lab write-ups and laboratory reports and quizzes.

Laboratory work for certain topics may occur over more than one week. Thus the subject matter of the lectures will not be the same as that of laboratory work during a given block of time.

The course follows the university timetable for withdrawing from the course.

An incomplete grade (I) is given only to a student who has bona fide reason to have missed the last exam. The makeup will be administered as soon as possible. In order to receive an *I* grade, you and the faculty member must execute a written agreement regarding a date for completion of the last exam. Incomplete grades are not given for any incomplete laboratory work, students doing poorly etc. Note that all *I* grades become *F* grades automatically after one semester.

CAS Academic Conduct Code: The CAS *Academic Conduct Code* is strictly followed. Academic misconduct involves not only direct cheating on tests, but some more subtle acts as well. All work handed in for credit must be your own, with the exception that you may refer to other sources if you cite the references. It is not permissible to use another student's work. You may discuss items with other students but your written work must be your own. If you have any questions you should consult Professor Godrick or Laboratory Instructor before the deadline. We are required to report cases of suspected academic misconduct to the Dean's Office.

Penalties for violations of the Academic conduct code may include suspension or expulsion from the University.

The course does not provide opportunities for extra credit or make-up work for the purpose of changing a grade. The only grade change is if there is an error in the computation of a score or in the assignment of a grade. Given the large size of the class and our commitment to treating all students fairly, it is simply not possible to make exceptions or adjustments for individual students. If you find the course material challenging, the time to seek help is during the semester, where there are ample opportunities to receive assistance. Before each exam we can help you succeed by clarifying lecture material or developing learning strategies. After you have taken an exam we can review your performance but can do nothing to change your grade (except in the case of a clerical error in grading). Take advantage of faculty office hours, tutoring, group review sessions, and laboratory instructor office hours to achieve an excellent grade. Remember also that you are required to attend all lectures and labs; attendance is the most significant factor in developing a thorough understanding of lecture material and thus how well you score on exams. You can improve your performance by being fully involved in learning the subject matter of the course and requesting help when needed. This is your responsibility.