Human Biology- Biol 125 Spring 2015

Course Coordinator and Instructor:
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Course Description:
BIOL 125 Human Biology (4.5 cr, 6 hrs). BIOL 125.00 explores the biology that underlies current health and disease topics (including diabetes, cancer, sexually transmitted diseases, nutrition). Using a topics approach, the course provides a survey of human anatomy and physiological function, along with the biological principles of genetics and cellular interactions that comprise our current understanding of the human organism. Laboratory exercises will introduce students to a scientific approach in studying human disease and physiology. BIOL 125 is for non-biology majors and does not count toward the Biology Major. The course counts toward GER2/E (Broad Exposure: Natural Science) with laboratory or LiPS.

Required:

1. Johnson, Michael. Human Biology Concepts and Current Issues , 7th Ed. (9780321821652). The Hunter bookstore will have an ebook version of it available (9780321874924), and Pearson (the publisher) has their own ebook (9780321877031,) accessible at this address: http://www.coursesmart.com/0321877039 . Students will be able to purchase the ebook in the Hunter Bookstore, and on our website, huntercollegeshop.com.

2. TopHat mobile clicker/tool will be used and must be purchased for attendance and participation grade in this course. You MUST use this to complete your assignments. Course Name: **BIO125: Spring 2015** DirectURL: http://app.tophat.com/e/444342 6-digit course code: **444342**
3. Blackboard (Bb) is a tool that will be used regularly in class. Please make sure that you have access to this. How to Access BlackBoard: http://www.hunter.cuny.edu/icit/help-docs/accessing-

blackboard-8.0 . If additional support is needed, contact ICIT or Bb support (studenthelpdesk@hunter.cuny.edu or bb@hunter.cuny.edu) for guidance. You must be registered for the class to have access. Your instructors cannot help you gain access if you do not have a valid and current CUNY user name.

4. Short articles may be assigned for class/group discussion regarding the current trends as it applies to human biology. Speakers are regularly invited to the class to discuss relevant topics to Human Biology. Articles will be posted on Bb and you will be responsible for relevant materials during exams. If speakers provide slides, they will also be posted here.

For supplemental understanding and review: Campbell, Neil et al. *Biology*. New York, NY: Pearson. This text is available in the Main Library at Hunter College, Socrates Center.

Course Point Breakdown: 500 points total

Attendance and Participation:	90 points
Exams- best 3 of 4 (70 each):	210 points
Laboratory Quizzes (10pts/wk):	100 points
Laboratory Notebook/Report:	30 points
Lab Practical:	30 points
Presentation:	40 points

Attendance/Participation. TopHat is a mobile phone clicker technology where students will be expected to answer questions or text discussion questions during specific lecture times. Grade will be given for participation (and correctness when applicable). There will be extra credit opportunity with the technology as well. Mobile phone texting, smartphone, tablet or computer is required to participate using TopHat. This must be purchased for attendance and participation grade in this course. You MUST use this to complete your assignments.
TopHat Course Name: **BIO125: Spring 2015**
Purchase at Direct URL: http://app.tophat.com/e/444342
6-digit course code: **444342**

If this is an issue, speak with Dr. Gomos Klein immediately after 1st day of class.

Laboratory attendance is mandatory. If you miss a laboratory session, your total lab score will be reduced as follows: 1 absence= (total lab score) will be multiplied by 0.9. Two absences = (total lab score) will be multiplied by 0.8. Three absences = (total lab score) will be multiplied by 0.7, etc. If you are more than 20 minutes late, it will count as an absence- no exceptions. You will be able to take the laboratory quiz at the discretion of your instructor. Each laboratory quiz is worth 20 points.

Syllabus: Syllabus is a guideline of what will be covered. You are responsible for any changes or materials covered in class. Syllabus will be updated regularly on Bb. Please note the "version" (ex. V6) of your syllabus when studying for exams!

Lecture Exams: Tests will cover the material in the Text and supplemental topics discussed during class and posted on Bb. There will be 4 tests each worth 70 points. The lowest grade of the 4 tests will not be counted in your final grade calculation. Valid Identification (ex. Valid Student ID), #2 pencils and an eraser are necessary at the time of each exam. If student is satisfied with the first three lecture exam grades and the lecture exam grade average is >70% (C), student may elect to drop the final exam (exam 4). **No make-up exams will be given.**

Cheating: Any sign of cheating (including plagiarism and copying) will result in immediate failure of the quiz, test, report, or presentation and will not be dropped as part of the grade.

Academic Integrity Statement: "Hunter College regards acts of academic dishonesty (e.g. plagiarism, cheating on examinations, obtaining unfair advantage, and falsification of records and official documents) as serious offenses against the values of intellectual honesty. The College is committed to enforcing the CUNY Policy on Academic Integrity and will pursue cases of academic dishonesty according to the Hunter College Academic Integrity Procedures."

AccessABILITY Statement: "In compliance with the American Disability Act of 1990 (ADA) and with Section 504 of the Rehabilitation Act of 1973, Hunter College is committed to ensuring educational parity and accommodations for all students with documented disabilities and/or medical conditions. It is recommended that all students with documented disabilities (Emotional, Medical, Physical, and/or Learning) consult the Office of AccessABILITY, located in Room E1214B, to secure necessary academic accommodations. For further information and assistance, please call: (212) 772- 4857 or (212) 650-3230."

Lecture Calendar (see *next* table for LAB schedule)

Biol 125 Human Biology Spring 2015; Subject to change at discretion of instructor

Tues	Thurs
	Jan 29 1. Introduction (Ch1)
Feb 3 2. Intro Chemistry (Ch2)	**Feb 5** 3. Intro Chemistry (Ch 3)
Feb 10 4. Intro Cell Biology (Ch4)	**Feb 12** **College is Closed- Lincoln's Birthday**
Feb 17 5. Intro Epidemiology (see Bb)	**Feb 19** **6. Exam 1**
Feb 24 7. DNA and Genetics (Ch19)	**Feb 26** 8. Genetic Diseases (Ch19)
Mar 3 9. Speaker: Genetic Counselor (Ch19)	**Mar 5** 10. Gene Therapy (Ch 20)
Mar 10 11. Cell Cycle/Cancer (Ch17)	**Mar 12** 12. Cancer (Ch 18) (possible speaker)
Mar 17 **13. Exam 2**	**Mar 19** 14. Intro Bone (ch5)
Mar 24 15. Osteoporosis (ch5)	**Mar 26** 16. Blood/Heart (Ch7)
Mar 31 17. Heart Disease(ch8)	**Apr 2** 18. Endocrine (relevant material only in Ch13)
7 **Spring Break**	9 **Spring Break**
Apr 14 19. Urinary System/Blood (ch15)	**Apr 16** 20. Diabetes (metabolic disease)
Apr 21 **21. Exam 3**	**Apr 23** 22. Intro Nutrition (ch14)
Apr 28 23. Nutrition- Diets and Fads (ch14)	**Apr 30** 24. possible speaker: Nutrition
May 5 25. Intro Viruses/STDs (relevant material in ch16)- HIV/HPV	**May 7** 26. Intro Specific Immunity (relevant material in ch9)
May 12 27. speaker: HIV+ and living with it	**May 14** 28. catch up day…
May 19 FINALS EXAM SCHEDULE **Exam 4 1:45-3:45 (not comprehensive)**	

Lab Calendar (see *previous* table for LECTURE schedule)

Laboratory Calendar (see previous page for LECTURE schedule)

Month	Friday	Saturday
Jan	30 WEEK I Safety/ Sci Meth/ Metric System **(1-2)**	31 WEEK I Safety/ Sci Meth/ Metric System **(1-2)**
Feb	6 WEEK II Microscopy/ Body Tissues **(3-4)**	7 WEEK II Microscopy/ Body Tissues **(3-4)**
Feb	13 **NO LAB**	14 **NO LAB**
Feb	20 WEEK III Epidemiology **(handout)**	21 WEEK III Epidemiology **(handout)**
Feb	27 WEEK IV Enzymatic Activity **(handout)**	28 WEEK IV Enzymatic Activity **(handout)**
Mar	6 WEEK V Genetics **(20)**	7 WEEK V Genetics **(20)**
Mar	13 WEEK VI DNA Extraction/DNA Fingerprinting **(21+handout)**	14 WEEK VI DNA Extraction/DNA Fingerprinting **(21+handout)**
Mar	20 WEEK VII Skeletal System **(8)**	21 WEEK VII Skeletal System **(8)**
Mar	27 WEEK VIII Cardiovascular System **(14-15)**	28 WEEK VIII Cardiovascular System **(14-15)**
Apr	3 **Spring Recess**	4 **Spring Recess**
Apr	10 **Spring Recess**	11 **Spring Recess**
Apr	17 WEEK IX Urinary /Endocrine Systems **(part of 13 + 18 + handout)**	18 WEEK IX Urinary /Endocrine Systems **(part of 13 + 18 + handout)**
Apr	24 WEEK X Nutrition **(part of 17)**	25 WEEK X Nutrition **(part of 17)**
May	1 WEEK XI Lab Practical (open notebook/manual)	2 WEEK XI Lab Practical (open notebook/manual)
May	8 WEEK XII Lab Presentations	9 WEEK XII Lab Presentations
May	15 **NO LAB**	16 **NO LAB**

Laboratory Additional Information on grading:

I. Lab Notebook Grading: 30 points.

a. Your lab instructor will check your laboratory notebook on a weekly basis for a grade. Each week's grading is 3 points. You are responsible for completing all questions/data from the PREVIOUS week. Lab supplements/handouts will be available on Bb and passed out the week before lab. You are responsible for any of the material that is given to you for completion. Make sure your name is prominently displayed on your lab manual and handouts.
b. Include: All questions (introduction, data, discussion, supplemental) in each laboratory activity **answered** unless directed otherwise by your instructor.
c. Details about grading: 3 points for each laboratory exercise (I-II, IV-XI) will be given for answering ALL questions/data in the introduction, procedures, and discussion (if any). Besides, questions, you will also be graded in the completeness of your data: this includes charts, measurements, drawings, observations, and notes.

II. Weekly Lab Quizzes: 10pts/week (total 100 points).

Quizzes will be given at the beginning of your laboratory period. At the instructor's discretion, questions will be asked on data from the prior week and/or material from the current week.

III. Lab Practical: 30 points. You may bring your lab manual/notes to this exam.

One or two short answer, multi-part questions from each laboratory exercise will be addressed or explored further. There will likely be NO multiple choice questions for your lab practical. You may use your lab notebook and any handouts as a guide or reference.

IV. Lab Presentations: 40 points.

Individual 5 minute presentation in student teams (for 10-15 minutes total presentation time) based on assigned teams and disease. Details to be discussed in lecture/ further directions to be handed out in lab. Please be sure to email AND print a handout copy for the instructor the day of the presentation.

Expected Learning Outcomes

1. Develop ability to apply the scientific method
    a. Identify biological questions and problems that can be answered through scientific investigations
    b. Design and conduct scientific investigations to answer biological questions.
    c. Create testable hypotheses
    d. Identify variables
    e. Use a control or comparison group when appropriate
    f. Select and use appropriate measurement tools
    g. Collect and record data
    h. Organize data into charts and graphs
    i. Analyze and interpret data
    j. Communicate findings
    k. Explain observations
    l. Make inferences and predictions
    m. Explain the relationship between evidence and explanation

2. Analyze reports of scientific investigations from an informed, scientifically literate viewpoint including considerations of:
    a. Appropriate sample
    b. Adequacy of experimental controls
    c. Replication of findings
    d. Alternative interpretations of the data
    e. Understanding of etiology and epidemiology

3. Understand chemical, cellular, and physiological basis of specific diseases and gain broad exposure to biological concepts
    a. Homeostasis
    b. Development: organ formation, cell types
    c. Cell structure and function
    d. Cell cycle and regulation
    e. DNA: chemical make-up, genetics, genes, genomics
    f. Proteins, Enzymes, Hormone functions
    g. Virology
    h. Immunology

4. Understand the metric system

5. Introduce body systems (Anatomy and Physiology) as they relate to specific disease and biology
    a. Skin
    b. Cardiovascular system / Blood

c. Endocrine System
d. Urinary System
e. Immune and lymphatic Systems

6. Apply concepts of nutritional components and how it relates to the human body and disease.

7. Learn ,understand and use basic experimental tools in Human Biology
    a. Microscopy
    b. DNA extraction
    c. DNA Fingerprinting
    d. Enzymatic reactions
    e. Serology
    f. Microbiology and epidemiology
    g. Physiological functions: urine output/metabolism, cardiac output
    h. Cell cycles, genetics, and mutation
    i. Methods of measurement