

**The Nature of Human Health and Disease**  
**Biological Sciences 150Lg**  
**Lecture Syllabus, Fall 2014**

The Nature of Human Health and Disease course is designed to bring students to a level of understanding of basic human biology, health and disease as well as modern biomedical science that will enable them to make rational decisions on personal, ethical, and political issues in their health. This level will be reached through lectures, reading of texts, papers and news media, and laboratory experiments.

**Topic List:**

General Biology Introduction:

Human physiology, cell and molecular biology, Mendelian genetics

- 1) Nutrition and Health
  - a) Nutrition Basics
  - b) Supplements/Fad Diets
  - c) Cardiovascular system/Heart Disease
  - d) Diabetes
- 2) Microbiology, Infectious Disease and Vaccines
  - a) STDs
  - b) HIV
  - c) Influenza/Common Cold
  - d) Bacterial infection-  
MRSA, evolution of antibiotic resistance
  - e) Human microbiome
  - f) How they work and myths—autism, ethics of vaccinating/not vaccinating
- 5) Evolutionary Biology of Health and Infection
  - a) Co-evolution of humans and infectious disease
  - b) Third World Disease/Wilderness Medicine
- 3) Genetic Inheritance and Disease
  - a) Single Gene Traits
  - b) Complex Disease Traits—Bipolar Disorder, Depression
  - c) Cancer
- 4) Drugs and Alcohol and Your Health
  - a) Prescription Drug Abuse (Adderall, Ritalin)
  - b) Alcohol Use, Abuse and it's affect on the body
  - c) Drug design/False Advertising
  - d) Pulmonary System and Tobacco Use
- 5) Brain Health
  - a) Drugs and your brain—neurotropic drugs
  - b) Aging Brain—Alzheimer's Disease

BISC 150Lg is a participatory course. A research project will lead students to become true experts in a subject of their choice and laboratory experiments will give an appreciation of biotechnology.

**Lecturers:**

**Christa Bancroft, Ph.D.**

Office: ZHS470

Phone: (213) 740-5553

Email: [cbancrof@usc.edu](mailto:cbancrof@usc.edu)

Office hours: Tu/Th 11-12 p.m.

**Oliver Rizk, Ph.D.**

Office: AHF107

Phone: TBD

Email: [orizk@dornsife.usc.edu](mailto:orizk@dornsife.usc.edu)

Office hours: TBD

**Guest Lecturers (TBD)**

**Lecture:** ZHS 159, Tues. & Thurs., 9:30 a.m.-10:50 a.m.

**Required Texts:**

*The Human Body in Health and Disease*, 6th ed., Kevin Patton and Gary Thibodeau (Mosby)

*The Nature of Human Health & Disease Laboratory Manual*, Fall 2014 (USC Custom Publishing)

Laboratory Director:

**Celeste Chong-Cerrillo, Ph.D.**

Office: ZHS 450

Phone: (213) 740-6085

Email: [chongcer@usc.edu](mailto:chongcer@usc.edu)

Office Hours: By appointment only

Laboratory: ZHS 458

Monday 10:00 - 11:50 a.m., 12:00 - 1:50 p.m., 2:00 - 3:50 p.m.

Tuesday 12:00 - 1:50 p.m., 2:00 - 3:50 p.m.

Wednesday 8:00 - 9:50 a.m., 10:00 - 11:50 a.m., 12:00 - 1:50 p.m., 2:00 - 3:50 p.m.

Website:

Blackboard (<https://blackboard.usc.edu/>)

**Grading.** Final letter grades are assigned on a curve, determined entirely by the total number of points earned on lecture exams, course assignments and in the laboratory. ***Only the TOTAL number of points earned by the END of the course will determine the final letter grade.*** There will be no opportunities for extra credit. The distribution of points is as follows:

2 Midterms (100 pts. each)	200
Final Exam	100
Term Research Project	
Outline	10
Research Paper	75
Presentation	25
<u>Laboratory Grade (see syllabus for distribution)</u>	<u>205</u>
Total	615

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**BISC 150Lg**  
**Lecture Schedule, Fall 2014**

<b>Date</b>	<b>Lecture Topic</b>	<b>Reading</b>	<b>Lecturer</b>
Aug 26	Overview: Mechanisms of Disease	Ch. 6: pp. 110-128	Rizk
Aug 28	Your Amazing Body: Intro to Physiology	Ch. 1: pp. 2-18 Ch. 5: pp. 88-104	Rizk
Sept 2	Intro to Cell Biology	Ch. 3: pp. 42-56	Rizk
Sept 4	DNA, RNA, proteins and You! (Molecular Biology)	Ch. 2 Ch. 3: pp. 57-62	Bancroft
Sept 9	Genetics or “How did I get brown eyes?”	Ch. 25	Bancroft
Sept 11	How your body gets it’s energy (Biochemistry)	Ch. 18	Bancroft
Sept 16	Nutrition: You are what you eat	Ch. 19	Bancroft
Sept 18	Nutrition: Supplements/Fad diets	Ch. 19	Rizk
Sept 23	<b>Midterm 1</b>		
Sept 25	Immune System and Human Immunodeficiency Virus (HIV)	Ch. 16	Bancroft
Sept 30	Diabetes	Ch. 12	Watts
Oct 2	Wash Your Hands! Influenza and the Common Cold	TBD	Bancroft
Oct 7	Cardiovascular System: Heart Disease	Ch. 14: pp.367-409	Rizk/Swadron
Oct 9	STDs	Ch. 23: pp.589-615	Neinstein
Oct 14	Bacterial Infection	TBD	Rizk
Oct 16	Human Microbiome— Bugs in Your Gut	TBD	Bancroft
Oct 21	Vaccines: “To Poke or Not to Poke? That is the Question”	TBD	Bancroft
Oct 23	Co-evolution of humans and infectious disease	TBD	Rizk
Oct 28	Third World Disease/Tropical Medicine	TBD	Quinn
Oct 30	<b>Midterm 2</b>		
Nov 4	Genetic Diseases— “Thanks Mom (or Dad)…”	Ch. 25	Bancroft
Nov 6	Multi-gene diseases— It’s a little more complicated	TBD	Bancroft
Nov 11	Cancer		DaSilva
Nov 13	Prescription Drug Abuse	TBD	Rizk
Nov 18	Alcohol Use, Abuse and Effects	TBD	Rizk
Nov 20	Drug Design/Advertising	TBD	Rizk

Nov 25	Pulmonary System and Tobacco Use	Ch. 17	Guest Lecturer
Nov 27	Thanksgiving	No Lecture	No lecture
Dec 2	Drugs and Your Brain	TBD	Nordt
Dec 4	The Aging Brain	TBD	Pike
Dec 11	<b>FINAL EXAM: 11 am-1 p.m.</b>		

**Readings:** Assigned readings from the textbook will be supplemented with articles posted on Blackboard. It will be the students' responsibility to check Blackboard for additional required readings and notices.

**Exams.** There will be 2 midterm exams during the semester and 1 final exam. Exams are multiple choice, short answer and essay format. Exams are NOT open book nor open notes. A student is not allowed to start an exam after the first student has left the exam room. You will be required to write your full name on EACH page of the exam. If you fail to do so, 1 point will be deducted for each page missing a full name.

**Missed exams.** Make-up exams will normally NOT be permitted. Making up an exam will only be allowed with a valid medical excuse. You must present to the Laboratory Director, **within two (2) days of the missed exam**, official written documentation that you were seen by a doctor. You must also state *in writing* (a) the doctor's name and phone number and (b), a signed statement authorizing us to discuss with the doctor whether you were too ill to take the exam. If you were seen at the USC Student Health Center, you must sign an "*Authorization for Disclosure of Medical Information*" form and list *Dr. Chong-Cerrillo's name* on the form. (Note that neither you nor the physician need to tell us the nature of your illness.) Please note that your physician has to be licensed to practice medicine by the State of California ([www.medbd.ca.gov](http://www.medbd.ca.gov)) and that it's considered unethical and unwise for a physician to provide medical care for a family member. We will contact the doctor and decide whether you have a valid excuse. If you do, the instructors will decide on an appropriate make-up. If you don't have a valid excuse (or fail to provide it within the allotted time), you will receive a zero for that exam.

**Re-grades of exam questions.** Your midterm exams will be handed back either in lab or lecture and the answer key will be posted. If you feel an error was made in the grading of your exam, you must submit your exam, along with a thoroughly written explanation of why you think your answer deserves more credit, to your TA within 1 week of the time it was returned to the entire class. Oral and email requests will not be considered. If you took the exam in pencil, we will not grant regrade requests. The entire answer will be re-graded, not just the part you think deserves more credit. Your score may increase or decrease as a result of a re-grade.

**Term Research Project.** Your Research Project consists of 3 components: Outline, Paper, and Presentation, each receiving a grade. Refer to the "Guidelines for Term Research Project" document for details regarding this assignment. Your topic must be approved by your TA no later than Friday, September 19, 2014. The Outline is due on Thursday, October 2, 2014 and the Paper is due on Tuesday, November 4, 2014. The Outline must be submitted in class, not in lab, and we will NOT accept electronic copies. An electronic copy of your Research paper will be submitted through your LAB Blackboard site, under "Assignments"; you cannot email your paper to your TA. For each day the Outline or Paper is handed in late, 20% of the total possible points will be deducted from your grade (e.g., if the report is past 5 days late, you will receive no

points for that assignment). Presentations will be given in lab during the last 3 weeks of class. Once you have signed up for a date to give your presentation, you will not be able to change it unless you have a valid medical emergency. If you do not have a valid medical excuse, it will be at the discretion of the Laboratory Director to determine whether you will be able to make up the Presentation, if time allows; however, the maximum possible points you may receive will be reduced by 50%.

You must attend ALL your labs during the presentation weeks. If you do not have a valid excuse for missing lab [with official written documentation presented to the Laboratory Director, within two (2) days of the missed lab], *2 points will be deducted from your presentation score for EACH presentation you miss* (i.e., if 5 students present, 10 points will be deducted from YOUR presentation grade).

**Blackboard and Posting of Grades.** Blackboard (<https://blackboard.usc.edu/>) lists BISC 150 lecture and lab sections as “separate courses”. All grades (lecture and lab) are posted in your LAB section. However, be sure to check for additional postings and announcements both in the lecture section and the lab section on a weekly basis.

Blackboard is convenient system to communicate grades; however, ***those grades are not authoritative***. It is the student’s responsibility to notify your TA or Lab Director ASAP in the event of any mistakes in your posted grade.

Please remember that (1) the course mean given on Blackboard is also NOT authoritative, and (2) that only the total number of points earned determines your course grade. We will be glad to discuss your performance, and your possible grades, at any time throughout the course. Help provided in this way should be considered only provisional. Your later performance may change (sometimes dramatically) the best- meant extrapolation.

**Academic Accommodations.** Students requesting academic accommodations based on a learning disability are required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP when adequate documentation is filed. Please be sure the letter is delivered to Dr. Chong-Cerrillo as early in the semester as possible. In addition, an Exam Request Form must be filled out, signed by Dr. Chong-Cerrillo, and returned to DPS 7 days prior to a midterm exam and 14 days prior to the final exam. DSP is open Monday-Friday, 8:30 am - 5:00 pm, Student Union 301, Phone: (213) 740-0776.