

BISC 104Lxg – How the Body Works: Topics in Human Physiology Fall 2013

This GE course (*category III: Inquiry*) is designed to give undergraduates an introduction to human physiology. BISC 104 is designed to provide a working knowledge of the human body and many of the associated considerations, such as diseases, genetics, lifestyle, and the effect of both legitimate and illegal drugs. We shall also explore social aspects of many of areas presented. Although there is no prerequisite, general knowledge of introductory biology and chemistry at the high school level is helpful.

Please note that this course is **not** designed for those majoring in biology or the related health sciences. BISC 104 does not satisfy the requirements for accreditation in any pre-health area of which we are aware, and should not be used in an attempt to satisfy admission requirements into one of the health professions. We do not support, and will not provide help, in using this course for such a purpose. Those who are majoring in biology or any of the health sciences should consider BISC 307, which is designed specifically for pre-health majors.

Lecturers:

Chien-Ping Ko, Ph.D.	HNB 209	740-9182	cko@usc.edu	Office Hrs: W& F 2-3
Bruce Yazejian, Ph.D.	ZHS 372		yazejian@usc.edu	Office Hrs: W& F 12-1

Laboratory Director:

Michael Moore, Ph.D.	ZHS 371B	740-6084	moore@usc.edu	Office Hrs: during all laboratories
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Teaching Assistants:

Lei Jin	ZHS 360A	740-6813	leij@usc.edu	Office Hrs: F 2-4
Sarah Vargas	ZHS 360A	740-9667	slvargas@usc.edu	Office Hrs: M 3-5

Textbooks:

Visualizing Human Biology by Kathleen Anne Ireland and David J. Tenenbaum. Wiley/The National Geographic Society, *Fourth Edition*.

Ancillary material: a number of handouts will be supplied as needed.

Blackboard Website: <https://blackboard.usc.edu/>

Lecture: MWF 1–1:50 PM, THH 202

Grading:

The possible numbers of points for the various evaluations are:

Exam I	100 points	20%
Exam II	100 points	20%
Exam III	100 points	20%
Clickers Use in Class	25 points	5%
Laboratory	100 points	20%
Term paper	50 points	10%
Oral presentation	25points	5%

Course Total	500 points	100%

Clickers Use in Class:

- Obtain a “TurningPoint ResponseCard RF Clicker” for use in class. New clickers can be purchased at the university bookstore for about \$32 plus tax. Note that they are available at the registers, not on the shelves. The clicker can be purchased from other sources, but it must be the TurningPoint ResponseCard RF. Other versions of the TurningPoint clickers will not function properly. This has been USC’s standard clicker since Fall 2006, so you may already have one or be able to borrow one for the semester. After the course, you may choose to keep your clicker for use in another course, or sell it back to the bookstore or to another student.
- When you have obtained a clicker, you must register it on a website that will be accessible via Blackboard. To register your clicker: click on the 'Tools' section on blackboard menu. Within the 'Tools' area click on the TurningPoint Registration Tool. Then enter the 6 character clicker ID on the back of the clicker.
- Registration allows us to identify each clicker with a particular student; therefore, you must only use your registered clicker throughout the semester. Use of another student’s registered clicker will be considered a violation of academic integrity. Registration of your clicker must be completed by the fourth lecture on **Wednesday, September 4.**
- The purpose of answering clicker questions in class is to give instructors feedback on your understanding of the material and to help you assess your own comprehension relative to others in the class. You will see summaries of clicker results displayed immediately.
- Answering clicker questions is an important aspect of class participation. We will grade your use of them, not the correctness of your responses. A total of 25 points (5% of your grade) will be awarded for use of clickers to answer questions presented during lecture (1 point per question). Problems may arise that interfere with clicker use (such as dead batteries, forgetting it, being absent due to illness, etc.), so we will allow each student three days of non-participation. This means you need to use your clicker for only 25 of the available 28 questions to get full credit. No excuses will be accepted for further non-participation. All questions or problems regarding clicker use and assignment of clicker points should be directed to Dr. Michael Moore by email sent to moore@usc.edu
- The results of clicker use will be treated like other graded materials in the class. While not anonymous, each student’s results will be held with strict confidentiality.

Laboratory: Each student must enroll in one section of laboratory. Labs will start the week of September 3rd; there will be no lab meeting during the first week of classes. The laboratory meets once each week for two hours. Except for the first lab session, each lab period will begin with a short quiz given promptly during the first five minutes of lab and only the first five minutes of the lab. The quiz will cover material of that week’s laboratory exercises, to encourage the students to come prepared for the lab exercises. The material covered in the laboratory is critical to understanding the overall course. As a result, the laboratory is an integral part of this course, and cannot be taken separately. For certain labs additional handouts will be provided in the lab and on Blackboard. More information about the laboratory will be supplied to you at a later date. Be sure to attend the first offering of your laboratory section.

Final grades are assigned on a curve, based entirely on the total number of points earned in the course. After each exam a curve will be given by the instructors to indicate roughly what letter grade corresponds to the student’s current number of points. Specifically, you will be provided with the current course average and a provisional letter grade scale. Please remember that the course mean on Blackboard is NOT authoritative. Also,

please remember that all discussion regarding letter grades is to be held as provisional prior to the completion of all course assignments. Again, provisional means provisional. Please remember that only the total number of points earned determines your course grade!

In a course such as this, in which the exact content of the lectures can vary, the student must realize that the examinations can and will cover anything that is discussed in class. Some of this material may not be in the textbook, and will be available only to those who were present in class. For this reason, it is very important that you attend class. Those who do not attend will surely not do as well on examinations.

Please note that this course involves conceptual ideas that are not easily grasped, as well as a significant amount of memorization. These are often challenging to students. BISC 104 is not a trivial course. The entire grade distribution will be used, including Ds and (when we are forced to) Fs. Students who seek less challenging material would be well advised to consider alternate enrollments.

Regarding Pass/No Pass Status. Should you choose the Pass/No Pass option, you must have a final score equivalent to “C minus” quality or better to receive a “Pass.” “No Pass” will be assigned if your final score is less than the equivalent of a “C minus.” No petitions for change from Pass/No Pass to graded status will be accepted after the deadline (September 13) to change status has passed.

Re-grading of exams. If you wish to have exam questions re-graded, you must submit a request to your TA within one week of when your exam was returned to you. Your request must be thoroughly explained in writing. TAs will not consider oral requests. The entire answer will be re-graded, not just the part you think deserves more credit. Your score may go up or down as a result of a re-grade.

Make-up exams will normally not be permitted. Making up an exam will only be allowed if the student can demonstrate with written documentation, in advance when possible, a compelling reason (such as family or medical emergency) for not taking the exam at the scheduled time. A make-up exam may include an oral component and will generally be more difficult than the in-class exam.

Students with Disabilities. Any student requesting academic accommodations based on a disability is required to register with the Office of Disability Services and Programs (DSP, STU 301, 213-740-0776) each semester. You must deliver an approved DSP letter to Dr. Moore or Dr. Ko early in the semester as possible. Please see SCampus (<http://www.usc.edu/dept/publications/SCAMPUS/>) for additional policies that are not covered here (i.e. academic integrity, proper conduct, etc.) but that do still apply!

Preparation of the term paper and oral presentation

A term paper is required. The term paper should be a minimum of about 10 pages, double spaced and machine-printed in a manner that is normal for formal presentations using a font size of 12 points. Please don't exceed 20 pages. Any style that you wish to use is fine, as long as it is used consistently and is in accord with the usual formal presentations of your field. Please don't submit illegible, torn, or handwritten papers.

Each paper must be annotated with a minimum of 4-10 references to the scientific or popular literature. Of these references, one must be as recent as 2010. The references must demonstrate evidence that the student has read at least two articles from a scientific journal or one of the sources listed below. The presentation must be an original work by the student involved. Plagiarism in this matter, as in connection with everything concerning this course and your University activities, is strictly forbidden and will be treated with the usual University rules if it

is encountered. Please visit <http://www.usc.edu/dept/publications/SCAMPUS/gov/gov05.html> regarding the University's policy on plagiarism, and <http://www.usc.edu/dept/publications/SCAMPUS/gov/gov11.html> regarding Academic Dishonesty Sanction Guidelines. The recommended sanction for plagiarism is an F for course.

The term paper due date: **Monday, November 18, 2013**

Subject Matter

The choice of subject for the term paper is up to the student, but must deal with the material of the course. In general, a subject that deals with any aspect of human physiology or disease will be accepted. Students are urged to discuss the subject of their paper with any of the teaching staff of the course. Topics that are not suitable will result in reduced credit. If you are in doubt as to whether a subject is suitable or not, please present it to the instructors or one of the teaching assistants prior to the 6th week of class to obtain permission. It is not necessary that every student choose a different topic; many students can, and often do, present the same subject. In this case, of course, all the students must work independently.

Sources of Material

There exist a large variety of different reference sources. These include the following popular level scientific magazines:

Scientific American
American Scientist
New Scientist

Science
Discover
Nature (any version)

Science News

Any of these sources can serve as a rich supply of ideas and information. You may use references from any of them freely. You will often find good articles in *Time*, *Newsweek*, the newspapers (particularly the *New York Times* and the *Los Angeles Times*), and other news periodicals. Most of these are now available on the web. Newspaper articles are quite satisfactory as sources, but must be appropriately referenced.

In addition to the popular magazines concerning science, there exist a number of more formal scientific journals used by the professionals in the field. You will usually find these articles too advanced to be read easily, but you may certainly feel free to use them if you wish. In particular, review articles in journals such as *Trends in Neuroscience* and *Trends in Pharmacology* are often of value.

The World Wide Web is an extraordinary source of information and ideas. If you are not already familiar with the Web, go to Leavey and learn about it. The Web and associated electronic means of communication are changing our society. While they are very powerful, be careful of information from the Web. This material is almost completely unrefereed, and may (and often does) contain significant errors. You are responsible for checking your sources to be sure that the information you report is correct. This is a significant part of modern scholarship. You may not use only the Web as a source of information. Of course, you can use peer-reviewed publications available online such as medical journals and the scientific journals listed above. Always cite scientific journals as journals whether accessed online or in print.

Some web sites of interest are:

www.medlineplus.gov
<http://www.cdc.gov/>
<http://www.fda.gov/>
<http://www.nih.gov/>
<http://www.ncbi.nih.gov/entrez/query.fcgi>
<http://www.usda.gov/>

You may trust any information from these governmental web sites.

Finally, there are a wide variety of medical journals. Many of these are written for physicians and are difficult to read, but many are written for a less highly trained audience. This latter group should be understandable by you as we move into the second half of the course. You may feel free to include references from any of these.

Turnitin for Term Papers

The following statement provided by USC's Center for Scholarly Technology applies. "USC is committed to the general principles of academic honesty that include and incorporate the concept of respect for the intellectual property of others, the expectation that individual work will be submitted unless otherwise allowed by an instructor, and the obligations both to protect one's own academic work from misuse by others as well as to avoid using another's work as one's own. By taking this course, students are expected to understand and abide by these principles. Please note the academic integrity standards of the University as explained in SCampus. All submitted work for this course may be subject to an originality review as performed by Turnitin technologies (<http://www.turnitin.com>) to find textual similarities with other Internet content or previously submitted student work. Students of this course retain the copyright of their own original work, and Turnitin is not permitted to use student-submitted work for any other purpose than (a) performing an originality review of the work, and (b) including that work in the database against which it checks other student-submitted work." **The term paper is due Monday (November 18th) by 5:00PM.** You will need to upload your paper through the assignments tab in the blackboard lecture section (13001). When you upload your term paper properly you will receive an email confirmation. If you do not receive an email confirmation... you will need to resubmit your paper. You can only submit a paper once... so make sure you are uploading your final version. A paper received at 5:01 PM is late, given that blackboard can be temperamental, I would not wait until 4:50 or later to submit your paper. Term Papers receive a 20% late penalty per 24 hours that they are late (this includes weekends - therefore by 5:01PM on Saturday Nov 23rd your paper is now worth 0, if not already submitted). It is your responsibility to make sure that your term paper has been submitted (and that it is the correct version). Only the electronic version received via the term paper assignment will be accepted... no hard copies, no emails to TAs or instructors... etc.

Oral Presentation

An **oral presentation** must be developed by the student for delivery in lab. The subject matter of the oral presentation will usually be the same as that of the term paper. This presentation should be ten minutes in length. It will be followed by a discussion period of five minutes, during which other students are urged to ask questions and to consider the material. The use of visual aids is expected in the presentation. Grades will be assigned on the basis of significance of the topic, quality of the material, and the quality of the presentation. Detailed guidelines will be distributed later. All presentations will be made during the final three weeks of the course.

Proposed lectures.

It is anticipated that student involvement during class will be frequent. The content of lectures may change as a result of questions or interests of the students.

Lecture Schedule, 104 Lxg, Fall 2013

	Date	Topic	Reading	Lecturer
1	Aug 26	Introduction; Scientific Methods; Clinical Trials	Ch 1	Ko
2	Aug 28	Atoms, Ions, and Molecules	Ch 3	Ko
3	Aug 30	Carbohydrates; Lipids	Ch 3	Ko
	Sept 2	<i>University Holiday (Labor Day)</i>		
4	Sept 4	Proteins; Nucleic Acids	Ch 3	Ko
5	Sept 6	Structure and Function of Cells	Ch 4	Ko
6	Sept 9	Cellular Metabolism; Membrane Transports	Ch 4	Ko
7	Sept 11	Tissues; Stem Cells	Ch 5	Ko
8	Sept 13	Bones and Joints	Ch 6	Ko
9	Sept 16	Muscle Structure; Molecular Basis of Contraction	Ch 6	Ko
10	Sept 18	Contractile Properties; Exercise Physiology	Ch 6	Ko
11	Sept 20	Neurons and Bioelectricity	Ch 7	Ko
12	Sept 23	Synaptic Transmission	Ch 7	Ko
13	Sept 25	Drug Addictions	Ch 7	Ko
14	Sept 27	The Spinal Cord and the Brain	Ch 7	Ko
	Sept 30	Exam I, 100 points (Covers 8/26-9/25, 13 lectures)		
15	Oct 2	Brain Imaging; Brain Diseases	Ch 7	Ko
16	Oct 4	Fight or Flight Responses; Stress	Ch 7	Ko
17	Oct 7	Pain, Taste, Smell, and Hearing	Ch 8	Ko
18	Oct 9	Eyes and Vision	Ch 8	Ko
19	Oct 11	Skin and Hair	Ch 9	Ko
20	Oct 14	The Lymphatic System and Immune Responses	Ch 9	Ko
21	Oct 16	Pathogens; Infection Diseases; AIDS	Ch 10	Ko

22	Oct 18	Heart Structure; EKG; Cardiac Cycle	Ch 12	Yazejian
23	Oct 21	Blood Vessels; Blood Pressure	Ch 12	Yazejian
24	Oct 23	Blood	Ch 12	Yazejian
25	Oct 25	Lung Structure; Ventilation; Lung Volume Changes	Ch 13	Yazejian
26	Oct 28	Gas Exchange; Regulation of Breathing	Ch 13	Yazejian
27	Oct 30	The Digestive Organs	Ch 15	Yazejian
28	Nov 1	Digestion	Ch 15	Yazejian
	Nov 4	Exam II, 100 points	(Covers 9/27-10/28, 13 lectures)	
29	Nov 6	Nutrition	Ch 14	Yazejian
30	Nov 8	Eating Disorders	Ch 14	Yazejian
31	Nov 11	Kidneys and Urine Formation	Ch 16	Yazejian
32	Nov 13	Control of Electrolyte and pH Balance	Ch 16	Yazejian
33	Nov 15	Endocrine Glands	Ch 17	Yazejian
34	Nov 18	Hormonal Regulation	Ch 17	Yazejian
		(TERM PAPER IS DUE TODAY)		
35	Nov 20	Reproductive Physiology	Ch 18	Yazejian
36	Nov 22	Fertilization, Pregnancy, and Development	Ch 19	Yazejian
37	Nov 25	Genetics, Biotechnology, and Human Health	Ch 20	Yazejian
	Nov 27	<i>University Holiday (Thanksgiving Holiday)</i>		
	Nov 29	<i>University Holiday (Thanksgiving Holiday)</i>		
38	Dec 2	Cancer	Ch 11	Yazejian
39	Dec 4	TBA		Yazejian
40	Dec 6	wrap-up/review		Yazejian
	Dec 18 Wed.	Exam III, 100 points	(Covers 10/30-12/6, 14 lectures) 11:00-1:00 p.m.	

Some other important dates:

August 26-30	Late registration and change of program
September 2	Labor Day, University Holiday
September 13	This is a very important day. Examine it carefully. last day to register and add classes; last day to drop without W and receive refund; last day to elect Pass/No Pass grading option; last day to purchase or waive tuition refund insurance;
November 15	Last day to drop with grade of W
November 27-30	Thanksgiving recess
December 6	Classes end
December 7-10	Study days
December 11-18	Final Examinations
Dec 19-Jan 12	Winter recess