

BISC 104 – How the Body Works
Fall 2017

This GE (D, Life Science) course 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.

Instructor: Bruce Yazejian; yazejian@usc.edu
Office: HNB B20; 740-2220

Laboratory Director: Michael Moore; moore@college.usc.edu
Office: 371B ZHS; 740-6084

Teaching Assistants:

Peter Luu; luup@usc.edu

Asif Zubair; asifzuba@usc.edu

Textbook: (recommended, not required)

Visualizing Human Biology by Kathleen Anne Ireland Wiley/The National Geographic Society, *Fourth Edition*. [Recommended]

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

Lecture: MWF 1–1:50 PM, THH 102

Grading:

The possible numbers of points for the various evaluations are:

Exam 1	100 points
Exam 2	100 points
Exam 3	100 points
Exam 4	100 points
<u>Laboratory (see below for breakdown)</u>	<u>100 points</u>
Total	500 points

Exam content: 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 class generally do not do as well on examinations.

Exams days. If you arrive late for an exam and another student has already finished their exam and left the exam room you will not be permitted to take the exam and will receive a score of zero for that exam.

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.

Missed Exams, assignments, quizzes, etc.: No make-up exams will be given. Students who are unable to take an exam at the scheduled time must give written notification, preferably in advance. Students who miss an exam, assignment, quiz, etc. for a legitimate reason (*e.g.* a medical issue) must provide written documentation of said reason within seven days of the exam or assignment due date. Documentation must be sent to Dr. Moore. If documentation is not received within seven days the score for the missed assignment will be a zero. Upon receipt of valid documentation, the score for the missing assignment will be prorated. In other words, the score for the missed assignment will be the average of the score for the other like assignments. (For example, if exam 2 is missed, that score will become the average of exams 1, 3, and 4). This policy does not apply for the fourth exam which cannot be missed.

Please note that this course involves conceptual ideas that may not easily be 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.

Final grades: Grades will be assigned on a curve, based 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 students' 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 provided on Blackboard is provisional as it is based on the number of points possible at that point in the course. Only the total number of points earned by the end of the semester will determine course grades.

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 to change status has passed.

Laboratory portion: Each student must enroll in one section of laboratory. Lab sections will start the week of August 28. (There will be no labs during the first week of classes.) The lab section meets once each week for two hours. The labs will serve to further elucidate various lecture topics either through discussion and/or laboratory exercises and activities. The material covered in the labs is critical to understanding the overall course. As a result, the lab is an integral part of this course, and cannot be taken separately. For certain

exercises and activities additional handouts will be provided in lab and/or on Blackboard. More information about the labs will be supplied at a later date. Be sure to attend the first offering of your lab section.

Academic conduct, 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 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.

Lecture Schedule, BISC 104, Fall 2017

Lecture #	Date	Topic	Chapter(s)
1	Aug 21	Introduction to and overview of the course.	
2	Aug 23	How are we put together, anyway? (Organization of the human body)	1&2
3	Aug 25	A (little) bit of chemistry (Bonding of atoms)	3
4	Aug 28	What exactly are all those chemicals for? (Molecules important for biology)	3
5	Aug 30	The (fun)damental unit of life. (Cell structure and organization)	4
6	Sept 1	Cells talk to each other. Wait, what? (Chemical messengers of communication)	4
	Sept 4	<i>University Holiday (Labor Day)</i>	
7	Sept 6	Cells are OK by themselves, but they're even better together. (Tissues)	5
8	Sept 8	We're soft on the outside, crunchy on the inside. (Bones and joints)	6
9	Sept 11	Don't just sit there...move your body around (Musculoskeletal system)	6
10	Sept 13	When muscles are excited, they get shorter (Excitation-contraction coupling)	6
11	Sept 15	Review for Exam 1	

	Sept 18	Exam 1, 100 points	(Covers lectures 1-10)
12	Sept 20	The brain is rechargeable (Electrical properties of neurons) Neurons have their own language (Synaptic transmission)	7
13	Sept 22	What is that three pounds of flesh up there between our ears? (Structure and organization of the nervous system)	7
14	Sept 25	What could possibly go wrong? (Your brain on drugs)	7
15	Sept 27	The body on autopilot. (The sympathetic and parasympathetic nervous systems)	7
16	Sept 29	I know you're out there...I can hear/taste/smell you. (The special senses)	8
17	Oct 2	The eyes have it. (The visual system)	8
18	Oct 4	Smooth and furry. (Skin and hair)	9
19	Oct 6	Cover your mouth when you cough! (The lymphatic system and immune responses)	9
20	Oct 9	Just because you can't see it doesn't mean it can't hurt you. (Pathogens, infectious diseases)	10
21	Oct 11	Review for Exam 2	
	Oct 13	Exam 2, 100 points	(Covers lectures 11-20)
22	Oct 16	Pop quiz: what beats 3 billion times without stopping? (Heart structure and function)	12
23	Oct 18	There will be blood... (Arteries, veins capillaries)	12
24	Oct 20	It's not ketchup. (Components of blood)	12
25	Oct 23	Take a deep breath... (Lung structure and ventilation)	13

26	Oct 25	In with the good air out with the bad air (Gas exchange in the respiratory system)	13
27	Oct 27	Step away from the cigarette. (Respiratory diseases)	13
28	Oct 30	I can't believe I ate the whole thing. (Nutrition and the digestive system)	14&15
29	Nov 1	The most under-appreciated part of the body. (Urinary system)	16
30	Nov 3	Review for Exam 3	
	Nov 6	Exam 3, 100 points (Covers lectures 21-29)	
31	Nov 8	Everyone poops (and pees too) (Urine formation)	16
32	Nov 10	It's in your blood. (Hormones)	17
33	Nov 13	Blame it on the hypothalamus. (Central endocrine glands)	17
34	Nov 15	What <i>doesn't</i> make a hormone? (Peripheral endocrine glands)	17
35	Nov 17	Essentially one long tube. (Male reproductive system)	18
36	Nov 20	Designed to receive sperm. (Female reproductive system)	18
	Nov 22	<i>University Holiday (Thanksgiving Holiday)</i>	
	Nov 24	<i>University Holiday (Thanksgiving Holiday)</i>	
37	Nov 27	And you thought we were done with hormones. (Female reproductive cycle)	18

38	Nov 29	It all starts in the Fallopian tubes. (Fertilization, pregnancy and development)	19
39	Dec 1	Choose your parents wisely. (Genetics and biotechnology)	20
	TBD	Review for Exam 4	
	Wednesday, Dec 13 11:00-1:00 p.m. Exam 4, 100 points (Covers lectures 30-39)		

Please note the following important dates:

Friday, September 8 is the last day to change from a letter grade to Pass/No Pass option.

Friday, September 8 is the last day to drop without a "W".

Friday, October 6 is the last day to change from Pass/No Pass option to a letter grade.

Friday, November 10 is the last day to drop with a "W".

Laboratory Portion

There is no lab manual. Lab exercises will be handed out prior to laboratory meetings. Grading of the lab portion will consist of eleven lab quizzes (7 points each) and performance on an oral presentation (23 points). See below for the schedule of these. Presentations will consist of a ten to fifteen minute oral report on a topic of students' choosing. Presentation topics must be related to physiology and must be approved by the TA at least three weeks before the beginning of the three weeks of presentations (see below). The use of visual aids in the presentation is expected (*e.g.* PowerPoint slides). Grades will be assigned on the basis of organization, subject knowledge and the clarity of the presentation. A grading rubric for the presentation will be made available on Blackboard. Lab quizzes will be given in the first five minutes of lab (and only the first 5 minutes of lab). Note: those arriving later than five minutes after the beginning of lab will not be allowed to take the quiz and will earn a zero for that quiz. Lab quizzes will be based on the lab exercise or the presentations from the previous week.

Week of	Laboratory Exercise	Lab Quiz?
Aug 22 nd	No Labs	No
Aug 29 th	Scientific Method 1	No
Sept 5 th	Scientific Method 2	No

Sept 12 th	Skeletal Muscle Physiology	Yes
Sept 19 st	EMG-Grip Strength	Yes
Sept 26 th	The Brain	Yes (Presentation topics need to be approved by this week)
Oct 3 rd	Cardiovascular Physiology	Yes
Oct 10 th	ECG-Heart Sounds	Yes
Oct 17 th	Presentations	Yes
Oct 24 th	Presentations	Yes
Oct 31 st	Presentations	Yes
Nov 7 th	Breathing-Rest-Exercise	Yes
Nov 14 th	Endocrine System Physiology	Yes
Nov 21 st	No Labs - Thanksgiving	No
Nov 28 th	The Senses	Yes

The Laboratory portion of the course totals 100 points.

Number	Points	Exercise	Total Points
11	7	Lab Quiz	77
1	23	Presentation	23