

BISC 110: Good Genes, Bad Genes

Units: 4

Spring 2024

Lecture: Mon, Wed 12-1:20pm

ZH#159

Discussion Section (50 minutes): Tuesdays 9-9:50am, 10-10:50am, 11-11:50am, & 2-2:50pm or Wednesdays 9-9:50am & 10-10:50am

Instructor: Professor Matthew Michael

Office: 116 RRI

Office Hours: By appointment

Contact Info: mattm@usc.edu

Teaching Assistants:

Office Hours: By appointment

Course Description and Learning Objectives

BISC 101 will provide non-major undergraduates with a basic understanding of molecular biology, with a particular emphasis on how advances in molecular biological research have impacted medicine, commerce, and society in general. The course will introduce students to the Scientific Method, the basics of experimental design and data interpretation, and will allow students to emerge with an ability to think critically about DNA-based science and how these technologies influence modern life, in both positive and negative ways.

The course is designed to satisfy the GE-D requirement for Core Literacies under the New USC General Education Program.

Prerequisite(s): none

Co-Requisite (s): none

Concurrent Enrollment: none

Recommended Preparation: High School Biology

Course Notes

Standard letter grading will be used.

Required Reading and Supplementary Materials

There is no text book assigned for this course. Short reading assignments will be issued throughout the semester.

Description and Assessment of Assignments

BISC101 is a standard, lecture-based course. Students are expected to attend lecture and discussion section. Student learning will be assessed through Quizzes in Discussion section.

Grading

There will be 14 discussion sections held throughout the semester (see schedule). Each discussion section will review the previous week's material and then there will be a 10-point quiz. The lowest two quiz scores will be dropped, and thus your grade will be based on 12 x 10-point quizzes. If you miss a discussion section for any reason, no need to contact the teaching staff as we will count that as a drop. If you miss two discussion sections throughout the semester no need to contact the teaching staff as you have two drops to cover the absences. If you miss two discussion sections and then miss a third we require a note from your doctor stating that you were seen and we will call and verify the information. Without a verified note from your doctor any missed quiz counts as zero after your two drops are used up. All quizzes must be taken in person in discussion. Attendance at discussion will be taken. If you take your quiz remotely you will get a zero. The quiz scores comprise all of the grade; there will be no papers, or writing assignments, or any other form of graded work beyond the quizzes.

Assignment Submission Policy

n/a

Additional Policies

Required reading: All assigned reading is required and this material is fair game for the quizzes.

BISC110 schedule Spring 2024

Lectures:			Sections:		
Date	Lec #	Topic	Dates	Section #	Section coverage
8-Jan	1	Syllabus			
10-Jan	2	Darwin			
15-Jan	HOLIDAY				
17-Jan	3	Mendell	1/16-1/17	1	Lec 1 and 2
22-Jan	4	Chromosomes			
24-Jan	5	DNA	1/23 & 1/24	2	Lec 3
29-Jan	6	Watson & Crick & Franklin I			
31-Jan	7	Watson & Crick & Franklin II	1/30 & 1/31	3	Lec 4 and 5
5-Feb	8	DNA replication & repair			
7-Feb	9	Cracking the code	2/6 & 2/7	4	Lec 6 and 7
12-Feb	10	The Central Dogma			
14-Feb	11	Gene Expression	2/13 & 2/14	5	Lec 8 and 9
19-Feb	Holiday				
21-Feb	12	Playing God	2/20 & 2/21	6	Lec 10 and 11
26-Feb	13	Playing God II			
28-Feb	14	Genes & Profits	2/27 & 2/28	7	Lec 12
4-Mar	15	The Human Genome Project			
6-Mar	16	The Human Race	3/5 & 3/6	8	Lec 13 and 14
18-Mar	17	GATTACA			
20-Mar	18	Genetics in Film & TV	3/19 and 3/20	9	Lec 15 and 16
25-Mar	19	DNA disease			
27-Mar	20	Who owns the DNA?	3/26 and 3/27	10	Lec 17 and 18
1-Apr	21	Gene Therapy			
3-Apr	22	Personalized Medicine	4/2 and 4/3	11	Lec 19 and 20
8-Apr	23	CRISPR			
10-Apr	24	CRSFR II	4/11 and 4/12	12	Lec 21 and 22
15-Apr	25	Cloning animals and people			
17-Apr	26	PCR & CSI	4/16 and 4/17	13	Lec 23 and 24
22-Apr	27	Modern topics in DNA science	4/23 and 4/24	14	Lec 25, 26, and 27
24-Apr	no lecture	no lecture			

Statement on Academic Conduct and Support Systems

Academic Conduct

Plagiarism – presenting someone else’s ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in *SCampus* in Section 11, *Behavior Violating University Standards*<https://scampus.usc.edu/1100-behavior-violating-university-standards-and-appropriate-sanctions/>. Other forms of academic dishonesty are equally unacceptable. See additional information in *SCampus* and university policies on scientific misconduct, <http://policy.usc.edu/scientific-misconduct/>.

Discrimination, sexual assault, and harassment are not tolerated by the university. You are encouraged to report any incidents to the *Office of Equity and Diversity* <http://equity.usc.edu/> or to the *Department of Public Safety* <http://capsnet.usc.edu/department/department-public-safety/online-forms/contact-us>. This is important for the safety whole USC community. Another member of the university community – such as a friend, classmate, advisor, or faculty member – can help initiate the report, or can initiate the report on behalf of another person. *The Center for Women and Men* <http://www.usc.edu/student-affairs/cwm/> provides 24/7 confidential support, and the sexual assault resource center webpage sarc@usc.edu describes reporting options and other resources.

Support Systems

A number of USC’s schools provide support for students who need help with scholarly writing. Check with your advisor or program staff to find out more. Students whose primary language is not English should check with the *American Language Institute* <http://dornsife.usc.edu/ali>, which sponsors courses and workshops specifically for international graduate students. *The Office of Disability Services and Programs* http://sait.usc.edu/academicsupport/centerprograms/dsp/home_index.html provides certification for students with disabilities and helps arrange the relevant accommodations. If an officially declared emergency makes travel to campus infeasible, *USC Emergency Information* <http://emergency.usc.edu/> will provide safety and other updates, including ways in which instruction will be continued by means of blackboard, teleconferencing, and other technology.