

BISC 480 – Biology of Development (Spring 2020)

Instructors:

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Meeting times:

Lec 13046R 2:00-3:20pm Tu: RRI 221 Th:RRI 421/SRI 320 (CHLA)
Dis 13048R 3:30-4:20 Th: RRI 221

Overview:

The aim of this course is to introduce students to the advanced aspects of developmental biology, from the molecular level to the level of the cells, tissues, and organs, including:

- * Fundamentals of gene regulation in developmental context
- * Methods of manipulating developmental processes
- * Systems biology
- * Cell populations

Prerequisite:

Biological Sciences 220/221

Recommended preparation:

Biological Sciences 120 or 121, Introduction to Biology I
Biological Sciences 311 or 320, Molecular Biology
Biological Sciences 325, Genetics

Week	Date	Topic	Reading	Instructor	Discussion
1	Jan 14 Jan 16	Class Intro	Chapter 1	Sergey	Papers: Quail Kelp Flies
2	Jan 21 Jan 23	Invertebrate 1	Chapter 2	Sergey	Literature research, forming plans
3	Jan 28 Jan 30	Vertebrate 1	Chapter 3	Rusty	Research 1
4	Feb 04 Feb 06	Invertebrate 2	Chapter 6	Sergey	Review Session, Research 2
5	Feb 11 Feb 13	Vertebrate 2	Chapter 5	Rusty	Exam style MIDTERM 1
6	Feb 18 Feb 20	Cell differentiation & stem cells	Chapter 8	Rusty	Research 3
7	Feb 25 Feb 27	Morphogenesis	Chapter 9	Rusty	Cutting cadavers in HSC, Mike Habib
8	Mar 03 Mar 05	Plant development	Chapter 7	Sergey	Research 4
9	Mar 10 Mar 12	Organogenesis I	Chapter 11	Rusty	MoNH (Dr. Allison Shultz)

	Mar 15-22	SPRING BREAK			
10	Mar 24 Mar 26	Organogenesis II	Chapter 11	Rusty	Review Session
11	Mar 31 Apr 02	Evolutionary Development I	Chapter 14	Sergey	MIDTERM 2
12	Apr 07 Apr 09	Evolutionary Development II	Chapter 14	Sergey	Research 6
13	Apr 14 Apr 16	Regeneration	Chapter 13	Sergey	Literature Research, preparation for presentations.
14	Apr 21 Apr 23	Nervous system, Invertebrate	Chapter 12	Sergey	Literature Research, preparation for presentations.
15	Apr 28 Apr 30	Nervous system, Vertebrate	Chapter 12	Rusty	Presentations
	May 7, 2-4p	FINAL EXAM			

Permission of instructor can be requested if you have not met the prerequisites. Familiarity with basic chemistry and physics is assumed. Facility with algebra is recommended.

Text: *Principles of Development*, Lewis Wolpert (Author), Cheryll Tickle (Author), 5th edition

Web Site: Course materials and announcements will be posted to Blackboard. You are responsible for checking the website.

Course E-mails will be sent only to your official USC email address.

Course Credit:

Midterm Exam 1 30% (chapters 1, 2, 3)

Midterm Exam 2 30% (chapters 4, 7, 8, 10, 11)

Final Exam 40% (20% chapters 12, 14, 15; 20% cumulative – presentations on research projects)

Discussion sections will be led by Teaching Assistants and will supplement and complement lectures. Some lectures and discussion sessions will be implemented as practical hands on wet lab exercises.

The syllabus may change slightly during the semester. Exam dates are firm.

Course Policies:

1) Exam dates are firm. There are no makeup exams in the course. Performance on the final may be prorated to substitute for a missing midterm exam, if an excuse considered valid by faculty is presented in a timely fashion. An acceptable written excuse or documentation must be provided to the faculty. The final exam will be administered only on the date and time set by the University.

2) Midterm exams will be returned to students by the TAs during discussion section. The final examination will not be returned but will be retained for one semester by the faculty.

3) Regrades: If you think an answer you have provided was graded incorrectly or if there is an arithmetic error, you may seek a regrade. You must provide a written explanation of why you think your answer was graded incorrectly. Regrade requests are to be submitted to your TA. If a regrade is agreed upon, then the ENTIRE EXAMINATION may be subject to a regrade. Your grade may therefore go up, go down, or remain the same. Regrade requests must be received within one week of when the exam key is posted for midterms, or by the second week of classes the following semester for the final exam.

4) No special assignments for extra credit are permitted.

5) Academic integrity policies of the University will be strictly followed. Infractions can result in severe penalties. There may be assigned seating for exams. No student may be admitted to an exam after the first student has left the exam.

Statement on academic integrity: USC seeks to maintain an optimal learning environment. General principles of academic honesty include 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. All students are expected to understand and abide by these principles. Scampus, the Student Guidebook, contains the Student Conduct Code in Section 11.00, while the recommended sanctions are located in Appendix A: <http://www.usc.edu/dept/publications/SCAMPUS/gov/>. Students will be referred to the Office of Student Judicial Affairs and Community Standards for further review, should there be any suspicion of academic dishonesty. The Review process can be found at: <http://www.usc.edu/student-affairs/SJACS/>.

6) Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to one of the Professors as early in the semester as possible. DSP is located in STU 301 and is open 8:30 AM – 5:00 PM, Monday thru Friday, Phone number: 213-740-0776.

7) It may be necessary to make adjustments to the syllabus during the semester. Check the course web site or class announcements on Blackboard for updates. **Exam dates will not be changed.**

8) Any questions or concerns regarding these policies should be addressed to the faculty.

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 Part B, Section 11, “Behavior Violating University Standards” policy.usc.edu/scampus-part-b. 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>.

Support Systems:

Student Counseling Services (SCS) – (213) 740-7711 – 24/7 on call

Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention. engemannshc.usc.edu/counseling

National Suicide Prevention Lifeline – 1 (800) 273-8255

Provides free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week. www.suicidepreventionlifeline.org

Relationship and Sexual Violence Prevention Services (RSVP) – (213) 740-4900 – 24/7 on call

Free and confidential therapy services, workshops, and training for situations related to gender-based harm. engemannshc.usc.edu/rsvp

Sexual Assault Resource Center

For more information about how to get help or help a survivor, rights, reporting options, and additional resources, visit the website: sarc.usc.edu

Office of Equity and Diversity (OED)/Title IX Compliance – (213) 740-5086

Works with faculty, staff, visitors, applicants, and students around issues of protected class. equity.usc.edu

Bias Assessment Response and Support

Incidents of bias, hate crimes and microaggressions need to be reported allowing for appropriate investigation and response. studentaffairs.usc.edu/bias-assessment-response-support

The Office of Disability Services and Programs

Provides certification for students with disabilities and helps arrange relevant accommodations. dsp.usc.edu

Student Support and Advocacy – (213) 821-4710

Assists students and families in resolving complex issues adversely affecting their success as a student EX: personal, financial, and academic. studentaffairs.usc.edu/ssa

Diversity at USC

Information on events, programs and training, the Diversity Task Force (including representatives for each school), chronology, participation, and various resources for students. diversity.usc.edu

USC Emergency Information

Provides safety and other updates, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible. emergency.usc.edu

USC Department of Public Safety – UPC: (213) 740-4321 – HSC: (323) 442-1000 – 24-hour emergency or to report a crime. Provides overall safety to USC community. dps.usc.edu