

LIFE 201B: INTRODUCTORY GENETICS – MOLECULAR EMPHASIS

Spring Semester, 2019

Clark Building, A104, MWF 11:00-11:50

Instructors:

- ◆ Dr. Eric Ross, Dept. of Biochemistry and Molecular Biology
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Office hours: By appointment
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- ◆ Dr. Tom Santangelo, Dept. of Biochemistry and Molecular Biology
Office hours: By appointment
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- ◆ GTAs:
 - Ben Johnson
Office hours: Thursday, 4:30-5:30. Location: Yates 308
E-mail: benj.johnson@colostate.edu
 - Julianna Sun
Office hours: 12:00-1:00, Monday. Location: Yates 308
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 - Robert Williams
Office hours: Wednesday, 10:00-11:00. Location: Yates 308
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 - Ryan Czarny
Office hours: Monday, 2:00-3:00; Location: Yates 308
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 - Chih-Feng Tien
Office hours: Monday, 1:00-1:00. Location: Yates 308
E-mail: chih.tien@colostate.edu
- ◆ Text book: Essential Cell Biology, Alberts et al., 4th edition.

#	Day	Date	Topic	Reading	Instructor
1	Wed	1/23	Introduction to course / review of Mendelian genetics	657-663	Ross
2	Fri	1/25	DNA and RNA structure	76-77, 171-179	Ross
3	Mon	1/28	DNA and RNA structure: melting and hybridization	Handout	Ross
4	Wed	1/30	DNA replication; DNA polymerase	197-199	Ross
5	Fri	2/1	DNA replication; additional proteins	199-209	Ross

6	Mon	2/4	DNA replication in eukaryotes / telomerase	209-211	Ross
7	Wed	2/6	DNA damage repair	211-216	Ross
8	Fri	2/8	General recombination	216-218, 652-653	Ross
9	Mon	2/11	Site-specific recombination / retrotransposons	299, 307-311	Ross
10	Wed	2/13	Review		Ross
	Fri	2/15	Exam 1 (lectures 1-10)		Ross
11	Mon	2/18	Chromosome structure I	179-191	Ross
12	Wed	2/20	Chromosome structure II	179-191	Ross
13	Fri	2/22	Genomics I	325-354	Ross
14	Mon	2/25	Genomics II	325-354	Ross
15	Wed	2/27	Genomics III	325-354	Ross
16	Fri	3/1	Genomics IV	325-354	Ross
17	Mon	3/4	Transcription: From DNA to RNA	223-232	Ross
18	Wed	3/6	Transcription regulation, prokaryotes I	261-269	Ross
19	Fri	3/8	Transcription regulation, prokaryotes II	261-269	Ross
20	Mon	3/11	Transcription regulation, eukaryotes	270-277	Ross
21	Wed	3/13	Review		Ross
	Fri	3/15	Exam 2 (lectures 11-21)		Ross
Spring break (3/12-3/16)					
22	Mon	3/25	RNA processing I	232-238; 252-257	Santangelo
23	Wed	3/27	RNA processing II	232-238; 252-257; 318-321	Santangelo
24	Fri	3/29	Genetic code, tRNA I	238-252	Santangelo
25	Mon	3/26	Genetic code, tRNA II	238-252	Santangelo

26	Wed	4/1	Translation I	238-252; 280-285	Santangelo
27	Fri	4/3	Translation II	238-252; 280-285	Santangelo
			Molecular Genetic Basis of Development		
28	Mon	4/8	Mitosis	603-633	Santangelo
29	Wed	4/10	Meiosis	645-657	Santangelo
30	Fri	4/12	Gametogenesis	645-657	Santangelo
	Mon	4/15	Exam 3 (lectures 22-29)		Santangelo
31	Wed	4/17	Underlying principles of development I	261-286; 346-356; 525-539; 633-642; 657-679	Santangelo
32	Fri	4/19	Underlying principles of development II	261-286; 346-356; 525-539; 633-642; 657-679	Santangelo
33	Mon	4/22	Underlying principles of development III	261-286; 346-356; 525-539; 633-642; 657-679	Santangelo
34	Wed	4/24	Model systems to study development	26-37	Santangelo
35	Fri	4/26	Stem cells	702-712	Santangelo
			Molecular Genetic Basis of Disease		
36	Mon	4/29	Genetic basis of cancer I	218-220; 553-559; 712-725	Santangelo
37	Wed	5/1	Genetic basis of cancer II	218-220; 553-559; 712-725	Santangelo
38	Fri	5/3	Genetic basis of cancer III	218-220; 553-559; 712-725	Santangelo
39	Mon	5/6	Genetic basis of cancer IV	218-220; 553-559; 712-725	Santangelo
40	Wed	5/8	Genetic basis of cancer V	218-220; 553-559; 712-725	Santangelo
41	Fri	5/10	Review		Santangelo
Finals week Thursday, 5/16			7:30-9:30 AM Exam 4 (lectures 30-41)		Santangelo

COURSE DESCRIPTION FOR LIFE 201B

Title:	INTRODUCTORY GENETICS – MOLECULAR EMPHASIS	
Credits:	3	
Term offered:	Spring 2018	
Prerequisites:	Life102; C111 and C112, or concurrent registration.	
Format:	The class will meet as a group three days/week for lectures	
Evaluation:	85% of your grade will be based on your performance on 4 exams (50-minutes each). Exams may be curved. With regard to re-grading your exam, please submit a typed description of the rationale for why more points are warranted. For full consideration, this document should be submitted within one week of the return of the exam in question. An additional 15% of your grade will be based on online quizzes.	
Potential Grading:	90%-100%	A
	80%-89%	B
	70%-79%	C
	60%-69%	D
	Below 60%	F
	Plus/minus grading will be used.	
Text:	Essential Cell Biology, Alberts et al., 4 th edition.	
Other materials:	Handouts and/or additional assigned readings	
Objectives:	To provide an integrated interdisciplinary experience for biomedically oriented students covering biochemistry, cell and molecular biology, microbiology, developmental biology and genetics.	

This course will adhere to the CSU Academic Integrity Policy as found in the General Catalog – 1.6, pages 7-9 (<http://www.catalog.colostate.edu/Content/files/2012/FrontPDF/1.6POLICIES.pdf>) and the Student Conduct Code (<http://www.conflictresolution.colostate.edu/conduct-code>). At a minimum, violations will result in a grading penalty in this course and a report to the Office of Conflict Resolution and Student Conduct Services.