UCSD BILD 1: The Cell Lecture Schedule Fall 2022

Professor: **Dr. Brooke Pickett** Professor contact: bpickett@ucsd.edu Office Hour: Th 12:30pm – 1:30pm, H&SS 1145B Quarter start: **9/22/22** Quarter end: 12/10/22

<u>Overview:</u> Welcome to BILD 1! In this class, we will develop an understanding for cellular structure and function, biological molecules, bioenergetics, the genetics of both prokaryotic and eukaryotic organisms, and the elements of molecular biology. Note that students should plan on spending **two to three hours of studying for every hour of class.** I know transitioning to in-person classes is still a bit stressful, so let's keep that in mind and make sure to treat each other with patience and understanding. **We're in this together, so if you have any issues or concerns, please let me know right away.**

COURSE MEETING TIMES

This course will be **fully in-person** (see schedule below). Please look closely at the following course meeting times and the more detailed lecture schedule in this syllabus.

Lecture:

Section	Day	Time	Room
All	TTh	6:30pm – 7:50pm	MOS 0114

Discussion:

Section	Day	Time	Room	IA
A01	М	1pm – 1:50pm	APM 2301	Minji
A02	М	4pm – 4:50pm	WLH 2112	Chumo
A03	Т	8pm – 8:50pm	CENTR 220	Kendall
A04	F	4pm – 4:50pm	HSS 2321	Sabrina
A05	Th	8pm – 8:50pm	HSS 2321	Kendall
A06	F	8am – 8:50am	CENTR 220	Shuhao
A07	F	3pm – 3:50pm	APM 2301	Ananth

IA Information:

IA Name	Email	Office Hours	Location
Chumo Chen	chc031@ucsd.edu	M 5pm – 5:50pm	TBD
Minji Kang	m5kang@ucsd.edu	M TBD	TBD
Ananth Karanam	atkarana@ucsd.edu	F 2pm – 2:50pm	TBD
Kendall Kearns (PhD)	kkearns@ucsd.edu	W 2:30pm – 3:30pm	Zoom
Sabrina Wu	sywu@ucsd.edu	M 2pm – 3pm	TBD
Shuhao Xu	s5xu@ucsd.edu	M 8am – 8:50am	Zoom

COURSE DESCRIPTION

<u>Recommended Textbook:</u> "Campbell Biology", 12th Edition by Urry, Cain, Wasserman, Minorsky and Orr (Pearson 2021) ISBN 9780135188743. If you order directly from the publisher, the loose-leaf version of the book is \$60: https://www.pearson.com/store/p/campbell-biology/P100002940947/9780135856215. You can also choose to purchase the ebook (allows you to highlight and make notes directly on the page, reads the book to you). See the **"Reading Schedule" below** to keep up with the course reading. This book is recommended, not required.

There is also a free Openstax Biology textbook pdf posted under the "Important Files" module in CANVAS – this is a very general, but useful, source of information with limited diagrams and information.

Prerequisites: prior completion of high school- or college-level chemistry course.

<u>CANVAS</u>: all course related information will be posted on our Canvas site. The lecture slides will be posted before lecture. Please check the Canvas site and your UCSD e-mail regularly for any announcements as these will contain essential information.

<u>Lecture Structure:</u> Lecture will be presented via Zoom (<u>https://zoom.us/</u>). The most important aspects of the material are presented in lecture. Lecture attendance is expected, as concepts will be presented in a step-wise fashion designed to help you learn the material. Participation questions will be presented during lecture. Lecture slides are available for download from CANVAS prior to the lectures and lecture recordings will also be posted to CANVAS after lecture under the "Media Gallery". At the start of each lecture, the corresponding textbook chapters will be displayed – these are chapters you should read in order to better understand the presented material. Homework assignment questions will be pulled directly from the lecture information.

<u>Discussion Section Structure</u>: Discussion sections are an ideal time to ask your IA questions about course material, homework questions, exam preparation, post-exam questions, etc. In general, your IA will go over the 1) main slides from lecture, 2) the answers to homework questions, and 3) answer any other questions you may have. Homework questions will be available on CANVAS before the discussion section. They consist of questions designed to help you understand the material presented in lecture and <u>are not to be turned in or graded</u>. Discussion section attendance is highly recommended, but not mandatory.

DETAILED COURSE SCHEDULE

Below is the <u>tentative</u> lecture schedule; i.e. schedule may be a little ahead or behind track as the course progresses. Review sessions are remote via Zoom and are schedule outside of class time via a Doodle poll, they are not mandatory. The second table is the lecture topic and the corresponding recommended textbook reading for that topic.

Week	Day	Date	Торіс	
0	0 Th 22-Son		Topic 1: Intro to Biology	
0 111 22-3ep		22-3ep	Topic 2: Chemistry – atomic structure	
	т	27 Son	Topic 2: Chemistry – bonding, water and pH	
1	Topic 3: Macromolecules – General info		Topic 3: Macromolecules – General info	
	Th	29-Sep	Topic 3: Macromolecules – carbs, lipids	
	Т	4-Oct	Topic 3: Macromolecules – proteins, nucleic acids	
2 Th 6-Oct		6 Oct	Topic 4: Cell structure – cell types and endomembrane systems	
		0-001	Topic 4: Cell structure – other cellular structures	
3	Т	11-Oct	Topic 5: Membranes and transport – membrane structure	

			Topic 5: Membranes and transport – chemical movement and transport	
	Th	13-0ct	Tonic 6: Metabolism – energy and enzymes	
	т Т	19 Oct	Evom 1	
	- 1	10-000	Examination recention transduction and	
4 Th		20.04	ropic 7. Cell communication – reception, transduction, and	
		20-Oct	response	
			Topic 8: Cellular respiration and fermentation overview, redox	
	т	25-Oct	Topic 8: Aerobic respiration (Glycolysis, CAC, electron transport),	
5			anaerobic respiration, fermentation	
Ū.	Th	27-0ct	Topic 9: Photosynthesis – background and light reactions	
		27 000	Topic 9: Photosynthesis – Calvin cycle and photorespiration	
	т	1-Nov	Topic 10: Mitosis – cell cycle and division	
6	I	T-INON	Topic 10: Mitosis – checkpoints and cancer	
Th 3-Nov Topic 11: Meiosis		3-Nov	Topic 11: Meiosis – general info and division	
	Т	8-Nov	Exam 2	
7	T Th	8-Nov	Exam 2 Topic 11: Meiosis – division (cont.), nondisjunction	
7	T Th	8-Nov 10-Nov	Exam 2 Topic 11: Meiosis – division (cont.), nondisjunction Topic 12: Genetics – Mendel's model	
7	T Th T	8-Nov 10-Nov 15-Nov	Exam 2Topic 11: Meiosis – division (cont.), nondisjunctionTopic 12: Genetics – Mendel's modelTopic 12: Genetics – nonmendelian inheritance and pedigrees	
7	T Th T Th	8-Nov 10-Nov 15-Nov 17-Nov	Exam 2Topic 11: Meiosis – division (cont.), nondisjunctionTopic 12: Genetics – Mendel's modelTopic 12: Genetics – nonmendelian inheritance and pedigreesTopic 13: Chromosomes – linkage and X-linked traits	
7 8	T Th T Th	8-Nov 10-Nov 15-Nov 17-Nov	Exam 2Topic 11: Meiosis – division (cont.), nondisjunctionTopic 12: Genetics – Mendel's modelTopic 12: Genetics – nonmendelian inheritance and pedigreesTopic 13: Chromosomes – linkage and X-linked traitsTopic 14: DNA replication – DNA and synthesis	
7 8	T Th T Th T	8-Nov 10-Nov 15-Nov 17-Nov 22-Nov	Exam 2Topic 11: Meiosis – division (cont.), nondisjunctionTopic 12: Genetics – Mendel's modelTopic 12: Genetics – nonmendelian inheritance and pedigreesTopic 13: Chromosomes – linkage and X-linked traitsTopic 14: DNA replication – DNA and synthesisTopic 15: Gene expression – transcription, processing, and	
7 8 9	T Th T Th Th	8-Nov 10-Nov 15-Nov 17-Nov 22-Nov	Exam 2Topic 11: Meiosis – division (cont.), nondisjunctionTopic 12: Genetics – Mendel's modelTopic 12: Genetics – nonmendelian inheritance and pedigreesTopic 13: Chromosomes – linkage and X-linked traitsTopic 14: DNA replication – DNA and synthesisTopic 15: Gene expression – transcription, processing, andcodons	
7 8 9	T Th T Th T Th	8-Nov 10-Nov 15-Nov 17-Nov 22-Nov 24-Nov	Exam 2Topic 11: Meiosis – division (cont.), nondisjunctionTopic 12: Genetics – Mendel's modelTopic 12: Genetics – nonmendelian inheritance and pedigreesTopic 13: Chromosomes – linkage and X-linked traitsTopic 14: DNA replication – DNA and synthesisTopic 15: Gene expression – transcription, processing, andcodonsVacation Day	
7 8 9	T Th T Th T T Th Th T	8-Nov 10-Nov 15-Nov 22-Nov 24-Nov 29-Nov	Exam 2Topic 11: Meiosis – division (cont.), nondisjunctionTopic 12: Genetics – Mendel's modelTopic 12: Genetics – nonmendelian inheritance and pedigreesTopic 13: Chromosomes – linkage and X-linked traitsTopic 14: DNA replication – DNA and synthesisTopic 15: Gene expression – transcription, processing, andcodonsVacation DayTopic 15: Gene expression – translation and mutations	
7 8 9 10	T Th Th Th T Th Th	8-Nov 10-Nov 15-Nov 22-Nov 24-Nov 29-Nov	Exam 2Topic 11: Meiosis – division (cont.), nondisjunctionTopic 12: Genetics – Mendel's modelTopic 12: Genetics – nonmendelian inheritance and pedigreesTopic 13: Chromosomes – linkage and X-linked traitsTopic 14: DNA replication – DNA and synthesisTopic 15: Gene expression – transcription, processing, andcodonsVacation DayTopic 15: Gene expression – translation and mutationsTopic 16: Regulation of gene expression – operons and	
7 8 9 10	T Th Th Th T Th Th Th	8-Nov 10-Nov 15-Nov 22-Nov 24-Nov 29-Nov 1-Dec	Exam 2Topic 11: Meiosis – division (cont.), nondisjunctionTopic 12: Genetics – Mendel's modelTopic 12: Genetics – nonmendelian inheritance and pedigreesTopic 13: Chromosomes – linkage and X-linked traitsTopic 14: DNA replication – DNA and synthesisTopic 15: Gene expression – transcription, processing, andcodonsVacation DayTopic 15: Gene expression – translation and mutationsTopic 16: Regulation of gene expression – operons andeukaryotes	
7 8 9 10 Finals	T Th T Th T Th Th Th	8-Nov 10-Nov 15-Nov 22-Nov 24-Nov 29-Nov 1-Dec 6-Dec	Exam 2Topic 11: Meiosis – division (cont.), nondisjunctionTopic 12: Genetics – Mendel's modelTopic 12: Genetics – nonmendelian inheritance and pedigreesTopic 13: Chromosomes – linkage and X-linked traitsTopic 14: DNA replication – DNA and synthesisTopic 15: Gene expression – transcription, processing, andcodonsVacation DayTopic 15: Gene expression – translation and mutationsTopic 16: Regulation of gene expression – operons andeukaryotes	

Topic	Recommended Textbook Reading
	Chapter 1:
	"The Cell: An Organism's Basic Unit of Structure and Function" p. 6
1	"DNA, the Genetic Material" p. 7-8
1	Figure 1.8b: "Gene Expression: Cells use" p. 8
	"The Three Domains of Life" p. 12-13
	Figure 1.13: "The three domains of life" p. 12
	Chapter 2:
	"Elements and Compounds" p. 29
	"The Elements of Life" p. 29
	"Subatomic Particles" p. 30-31
2	"Covalent Bonds" p. 36-37
2	"lonic Bonds" p. 37-38
	"Weak Chemical Interactions" p. 38-39
	Chapter 3:
	"Water and Life"
	"Cohesion of Water Molecules" p. 45-46

	"Water: The Solvent of Life" p. 49
	Chapter 5:
	"Sugars" p. 68-70
	"Fats" p. 72-74
3	"Protein Structure and Function" p. 75, 78
	Figure 5.18: "Exploring Levels of Protein Structure" p. 80-81
	"The Roles of Nucleic Acids" p. 84
	"Components of Nucleic Acids" p. 84-86
	Chapter 6:
	"Comparing Prokaryotic and Eukaryotic Cells" p. 97-99
	"The Nucleus: Information Central" p. 102 (1st paragraph)
	"Ribosomes: Protein Factories" p. 102-104 (1st paragraph)
_	"The Endoplasmic Reticulum: Biosynthetic Factory" p. 104
4	"The Golgi Apparatus: Shipping and" p. 105-106 (1st & 2nd paragraph)
	"Lysosomes: Digestive Compartments" p. 107 (1st paragraph)
	"Vacuoles: Diverse Maintenance Compartments" p. 108
	"Mitochondria and Chloroplast Change Energy" p. 109, 110
	"Roles of the Cytoskeleton: Support and Motility" p. 112, 113
	Chapter 7:
	"The Fluidity of Membranes" p. 128-129
5	Figure 7.7: "Some functions of membrane proteins" p. 130
-	Figure 7.9: "Synthesis of membrane components and" p. 131
	Figure 7.16: "Review: passive and active transport" p. 137
	Chapter 8:
	"Forms of Energy" p. 144-145
	"Free Energy and Metabolism" p. 148-149
6	Figure 8.9: "The structure and hydrolysis of" p. 151
	"Substrate Specificity of Enzymes" p. 155-156
	"Catalysis in the Enzyme's Active Site" p. 156
	Chapter 11:
	"Local and Long-Distance Signaling" p. 215-216
	"The Three Stages of Cell Signaling: A Preview" p. 216-217
	Figure 11.8: "Exploring cell-surface" p. 218-220
7	"Signal Transduction Pathways" p. 221-222
	"Protein Phosphorylation and Dephosphorylation" p. 222-223
	"Small Molecules and Ions as Second Messengers" p. 223
	"Nuclear and Cytoplasmic Responses" p. 226
	"Signal Amplification" p. 227
	Chapter 9:
o	"The Principle of Redox" p. 165-166
0	"The Stages of Cellular Respiration: A Preview" p. 168 through "Fermentation and
	anaerobic respiration enable" p. 180
	Chapter 10:
	"Photosynthesis feeds the biosphere" p. 188
0	"Chloroplasts: The Sites of Photosynthesis in Plants" p. 189
9	"The Two Stages of Photosynthesis: A Preview" p. 191-192
	"The Nature of Sunlight" p. 192
	"Photosynthetic pigments: the light receptors" first paragraph only, p. 192

 "Linear electron flow" p. 197-198 "The Calvin cycle uses the chemical energy" p. 201-202 Figure 10.22: "The Working Cell" p. 208 Chapter 12: "Key roles of Cell Division" p. 235 "Cellular Organization of the Genetic Material" p. 235 "Distribution of Chromosomes during Eukaryotic Cell Division" p. 236 "Phases of the Cell Cycle" p. 237 Figure 12.7: "Exploring Mitosis in an Animal Cell" p. 238-239 "The Cell Cycle Control System" p. 244
 "The Calvin cycle uses the chemical energy" p. 201-202 Figure 10.22: "The Working Cell" p. 208 <i>Chapter 12:</i> "Key roles of Cell Division" p. 235 "Cellular Organization of the Genetic Material" p. 235 "Distribution of Chromosomes during Eukaryotic Cell Division" p. 236 "Phases of the Cell Cycle" p. 237 Figure 12.7: "Exploring Mitosis in an Animal Cell" p. 238-239 "The Cell Cycle Control System" p. 244
Figure 10.22: "The Working Cell" p. 208 <i>Chapter 12:</i> "Key roles of Cell Division" p. 235 "Cellular Organization of the Genetic Material" p. 235 "Distribution of Chromosomes during Eukaryotic Cell Division" p. 236 "Phases of the Cell Cycle" p. 237 Figure 12.7: "Exploring Mitosis in an Animal Cell" p. 238-239 "The Cell Cycle Control System" p. 244
 <i>Chapter 12:</i> "Key roles of Cell Division" p. 235 "Cellular Organization of the Genetic Material" p. 235 "Distribution of Chromosomes during Eukaryotic Cell Division" p. 236 "Phases of the Cell Cycle" p. 237 Figure 12.7: "Exploring Mitosis in an Animal Cell" p. 238-239 "The Cell Cycle Control System" p. 244 " " "
 "Key roles of Cell Division" p. 235 "Cellular Organization of the Genetic Material" p. 235 "Distribution of Chromosomes during Eukaryotic Cell Division" p. 236 "Phases of the Cell Cycle" p. 237 Figure 12.7: "Exploring Mitosis in an Animal Cell" p. 238-239 "The Cell Cycle Control System" p. 244
 "Cellular Organization of the Genetic Material" p. 235 "Distribution of Chromosomes during Eukaryotic Cell Division" p. 236 "Phases of the Cell Cycle" p. 237 Figure 12.7: "Exploring Mitosis in an Animal Cell" p. 238-239 "The Cell Cycle Control System" p. 244
10 "Distribution of Chromosomes during Eukaryotic Cell Division" p. 236 "Phases of the Cell Cycle" p. 237 Figure 12.7: "Exploring Mitosis in an Animal Cell" p. 238-239 "The Cell Cycle Control System" p. 244
10 "Phases of the Cell Cycle" p. 237 Figure 12.7: "Exploring Mitosis in an Animal Cell" p. 238-239 "The Cell Cycle Control System" p. 244
Figure 12.7: "Exploring Mitosis in an Animal Cell" p. 238-239 "The Cell Cycle Control System" p. 244
"The Cell Cycle Control System" p. 244
"The Cell Cycle Clock: Cyclins and" p. 245
"Stop and Go Signs: Internal and External Signals" p. 246-248
"Loss of Cell Cycle Controls in Cancer Cells" p. 248
Chapter 13:
"Inheritance of Genes" p. 255
"Sets of Chromosomes in Human Cells" p. 256-257
11 "The Stages of Meiosis" p. 259
Figure 13.8: "Exploring Meiosis in an Animal Cell" p. 260-261
Figure 13.10: "A comparison of mitosis and meiosis" p. 263
Chapter 15:
"Abnormal Chromosome Number" p. 307
Chapter 14:
"Mendel's Experimental, Quantitative Approach" p. 270 through "The Multiplication
12 and Addition Rules p. 277
Degrees of Dominance p. 279 "Nultiple Alleles" p. 280 through "Dedigrees Applyeis" p. 284
Charater 15:
Chapter 15: "Correlating Rehavior of a Cono's Allelos with " n. 205 through "Recombination of
Linked Cones: Crossing Over" n. 202
13 Eigure 15 4: "The chromosomal basis of Mendel's laws" n. 297
"Apportal Chromosome Number" n. 307
"Alterations to Chromosome Structure" first paragraph in 307
Chapter 16:
"Getting Started" n 322-323
14 "Synthesizing a New DNA Strand" n 323-324
"Antiparallel Flongation" n 324-326
Chapter 17:
"Basic Principles of Transcription and Translation" p. 337-339
15 "Molecular Components of Transcription" p. 342
Figure 17.25: "A summary of transcription and translation in" p. 356
Figure 17.27: "Types of small-scale mutations that affect" p. 358
Chapter 18:
"Operons: The Basic Concept" p. 366-367
"Differential Gene Expression" p. 370-371
"Combinatorial Control of Gene Activation" p. 374-375

GRADING CRITERIA AND SCALE

The grading scale for the course is standard (see second table below). The course will not be curved and the final grades will not be rounded. For example, this means a grade of 89.9% will not be rounded up to a 90%.

Assessment	Points
Lecture	336
Exam 1	100
Exam 2	100
Exam 3	100
Participation (18, 2pts)	36
Discussion Section	75
Study Guide Assignments (3, 10pts)	30
Homework Assignments (9, 5pts)	45
Extra Credit	5
Total for Course	411

Letter	Percent	GPA
A+	96-100	4.0
А	94-95	4.0
A-	90-93	3.7
B+	86-89	3.3
В	84-85	3.0
B-	80-83	2.7
C+	76-79	2.3
С	74-75	2.0
C-	70-73	1.7
D	60-69	1.0
F	<60	0

EXAMS

There will be three exams (see schedule above), none of which are cumulative (yay!). We will have exam reviews before every test, each one will be scheduled via a Doodle poll and will take place outside of lecture hours. I highly suggest either making a study guide or digital flash cards (using the free Anki program – apps.ankiweb.net) after each lecture. This is a fast-paced course so it is imperative to keep up with the material. None of the exam grades will be dropped and make-up exams will only be given with a doctor's note.

PARTICIPATION

At the end of every lecture, a simple question will be asked based on the material we just went over. Students will write their answers on a small slip of paper, with their name, and then pass it down the row to their IA. <u>Students are only allowed to hand in one slip of paper</u>. If a student attempts to hand in a slip of paper for a student who is not there, both students will lose participation points for that day. The participation answers are not graded for accuracy, just completion. Students must be present in lecture the <u>entire lecture</u> to receive participation points. Each lecture is worth 2pts for a total of 36pts by the end of the quarter. <u>The lowest participation grade will be dropped at the end of the quarter</u>. See attendance policy below for further information.

STUDY GUIDE ASSIGNMENTS

Creating study guides out of the lecture slides is a great way to prepare for the exams. This allows you to study the study guide, rather than going through dozens of lecture slides. During these assignments, you will each add 10 questions OR 10 answers to a shared study guide for your discussion section (this will be done via Googledocs). Make sure to write your name in parentheses next to whatever questions and answers you write so you get credit for your work. To be clear, you could write 6 questions and 4 answers, or 8 questions and 2 answers, or 5 questions and 5 answers, etc. As long as it adds up to 10. We will do this assignment once for each exam (Exam 1, 2, and 3).

HOMEWORK ASSIGNMENTS

Homework assignments will be posted on CANVAS each week and will pertain to the material we cover that week. They are open notes, open book, are not timed, and are due on Friday at midnight each week. Depending on the week and the amount of material covered, the homework assignments will differ in the total number of questions. If students complete the homework assignment with a strong attempt at correct answers and integrity, they will receive the full 5pts. A point is subtracted from the total for every answer that is not completed sincerely and honestly.

EXTRA CREDIT

Extra credit are points given out for doing something above and beyond what is required. There are five points of possible extra credit in this course. Asking for extra credit points beyond this or asking for added points to boost your grade is inappropriate and not in line with the ethics of academia; any requests of this nature will be dismissed.

WEEKLY CHECKLIST

Below is a helpful checklist that students can follow each week to make sure they are up to date on all tasks:

- □ Attend weekly lecture and discussion section
- □ Read the portions of the textbook that correspond to that week's lectures
- □ Answer weekly homework assignments by Fri each week
- Work on study guide assignments as you study

COURSE POLICIES

Below you will find the class policies regarding attendance, late assignments, extra credit, accommodations, and cheating.

ATTENDANCE

<u>Lecture attendance</u>: lecture attendance is necessary in order to understand the material and perform well on the assignments. If lecture is not attended, participation points will be lost. Students who are feeling sick, or who are COVID-positive, can watch the lecture podcast (via the "Media Gallery" tab in CANVAS).

<u>Attendance and COVID</u>: **DO NOT** attend lecture if you are feeling sick, have been in contact with a COVIDpositive person, or are COVID-positive – please protect your fellow students, IAs, and professors. As stated above, the lecture recording can be watched remotely.

<u>Add/drop deadlines</u>: Deadline for all students (undergraduate and graduate students) to add or re-enroll in classes if canceled for non-payment via WebReg is Oct 7. Deadline for all students (undergraduate and graduate) to drop classes without "W" grade on transcript is Oct 21. Deadline for Undergraduate students to drop with "W" grade on transcript is Nov 4. Deadline for Graduate students to drop with "W" grade on transcript is Nov 28.

LATE ASSIGNMENTS

Late assignments are not accepted unless there is a doctor's note, a prior request for accommodations, or existing accommodations. If a student is struggling, it is their responsibility to seek out help and let the professor know of their circumstances <u>before</u> assignments/quizzes are to take place (excepting emergencies). <u>Students cannot ask for accommodations retroactively</u> – this includes asking for an extension for work that has already been due.

LEARNING OUTCOMES (LOs)

- 1) Explain the relationship between chemical structure and function of molecules such as DNA, RNA, proteins, amino acids, and lipids.
- 2) Compare and contrast how the structures and elements of prokaryotic cells, eukaryotic cells, and viruses' impact how they function.
- 3) Predict how and when molecules may enter or exit cells through various pathways in the cell membranes.
- 4) Analyze how energy is produced and used by cells, including processes such as cellular respiration and photosynthesis.
- 5) Explain how cells receive and act on external chemical signals, including the stages of cell signaling and how signals are amplified.
- 6) Explain mechanisms that lead to genetic diversity including mutation and meiotic recombination.
- 7) Analyze how environment interacts with genotypes to produce phenotypes.
- 8) Explain patterns and mechanisms of inheritance.
- 9) Apply the central dogma to explain how genes give rise to the traits we observe in organisms.
- 10) Explain how gene expression can be modulated.

ACADEMIC INTEGRITY

Honesty is primarily the responsibility of each student. The College considers cheating to be a voluntary act for which there may be a reason, but for which there is no acceptable excuse. It is important to understand that collaborative learning is considered cheating unless specifically allowed for by the professor. The term cheating includes but is not limited to: plagiarism, receiving or knowingly supplying unauthorized information, using unauthorized material or sources, changing an answer after work has been graded and presenting it as improperly graded, illegally accessing confidential information through a computer, taking an examination for another student or having another student take an examination for you, and forging or altering grade documents.

If any act of academic dishonesty is observed, **the professor is required to report it.** The student will **automatically receive a zero** on that test or assignment (the grade received as a result of an academic integrity violation stays calculated into the student's GPA even if the student retakes the class). There will also be an AI Administrative Fee of \$50 (posted to the student account), mandatory AI Training, at least one Disciplinary Action, and possibly other actions per the professional judgement of the Appropriate Administrative Authority (AAA). Discipline may include probation, suspension (from a Quarter to Two Years), or dismissal. <u>Please do not risk your GPA and/or future career by cheating.</u>

COVID-RELATED FAQs

1. Why are there no remote options for this course?

Students who have a documented need for accommodation either because of travel restrictions or because of health restrictions have already been identified and this data has been shared with the appropriate academic programs. To the extent that we have capacity, programs and faculty have tried

to accommodate students needing remote instruction for Winter. *To operate programs in both inperson and remote modalities increases demands on university infrastructure, and our ability to do so is limited.* While individual students may express a preference for additional remote offerings, *we do not have the instructional or operational capacity to simultaneously deliver all or most courses in both in-person and remote formats.* Students who have an accommodation need must work with the Office for Students with Disabilities (OSD) to have their accommodation reviewed and documented.

- 2. What accommodations are there for students who are sick/unable to join an in-person class? As stated under the "Attendance Policy" students can choose to watch the lecture recording rather than attend the lecture in-person. Please see the "Attendance Policy" portion of the syllabus.
- 3. What happens if another student in the class tests positive for COVID? When a student tests positive for COVID, the contact tracing team immediately takes over. The student will need to quarantine for up to 10 days. The contact tracing team will determine if others were exposed through contact with the infected individual, and if so, they will be contacted and advised to be tested. If all protocols are followed (including vaccine mandates and masking), being in a room with an infected individual does not automatically qualify as exposure. To date, no exposure events have been traced back to in-class activities at UCSD.
- 4. What should I do if I feel sick?

Complete the symptom screener and if needed, get tested for COVID. Do not come to campus unless given the all-clear.

5. What happens if the professor/IA tests positive for COVID?

The professor/IA will quarantine for 10 days and the contact tracing team will determine if others were exposed. If the professor were to quarantine, instruction would be remote for the quarantine period and a substitute professor may be provided.

6. What rules do the professor/IA/students have to follow in the classroom?

Wearing two cloth masks or one KN95 mask is **required at all times**, regardless of vaccination status. No eating or drinking is allowed in class, regardless of whether the class is indoor or outdoor. The only exception from this rule are short hydration breaks for instructors while lecturing. Social distancing restrictions have been lifted, but physical contact should be limited where possible. The full masking policy is posted on the UCSD website: <u>https://adminrecords.ucsd.edu/PPM/docs/516-30.html? ga=2.168746281.923449004.1631056456-1539867882.1625773689</u>.

7. Can we eat/drink in the classrooms?

No, but instructors may take hydration breaks while lecturing. Students should step outside to hydrate, if needed, during class and break times.

8. How have classrooms been prepared for a safe return, and what safeguards are in place?

Facilities Management has provided extensive information on their activities preparing classrooms and other facilities for individuals to return to campus. More information about the specifics related to air filtration in classrooms and campus buildings, as well as cleaning protocols and more can be found on their COVID-19 information page (Facilities Management Response to the COVID-19 Pandemic (ucsd.edu)).

RESOURCES FOR STUDENTS

If a student is struggling, it is **their responsibility to seek out help and let the professor know of their circumstances before assignments/quizzes are to take place** (excluding emergencies). <u>Students cannot ask</u> <u>for accommodations retroactively</u>. A complete list of student resources can be found on the CANVAS homepage.

- Teaching + Learning Commons (<u>https://commons.ucsd.edu/students/academic%20support.html</u>) Made up of six unique, but integrated hubs, The Teaching + Learning Commons provides comprehensive academic support for students. Includes tutoring, writing help, learning strategy workshops, and study groups.
- 2. The Writing and Critical Expression Hub (<u>http://commons.ucsd.edu/students/writing/index.html</u>) provides support for undergraduates working on course papers, i.e. laboratory reports and the research proposal, as well as other independent writing projects. Writing mentors can help at any stage of the writing process, from brainstorming to final polishing. The Writing and Critical Expression Hub offers: one-onone writing tutoring by appointment; supportive and in-depth conversations about writing, the writing process, and writing skills; help with every stage in the writing process, walk-in tutoring; and workshops on writing.
- 3. *Office for Students with Disabilities (OSD)* (<u>https://osd.ucsd.edu/</u>) Assists students with documented disabilities (psychological, psychiatric, learning, attention, chronic health, physical, vision, hearing, brain injury) to provide accommodations in classrooms and labs. OSD is a great resource if you think you may have test anxiety due to an underlying condition that interferes with the ability to learn, focus, or concentrate. In many cases, students are entitled to assistance with test taking, such as extra time to complete a test, testing in a less distracting room or having questions read aloud. Their mission is to offer quality programs and services that empower students with disabilities to access and engage in educational activities at the College. Please notify your instructor immediately if you require special health or disability accommodations.
- Counseling and Psychological Services (CAPS) UCSD counseling services are still open during quarantine. This is an amazing resource for coping with anxiety and stress issues. For first-time appointments, you can now go directly to MyStudentChart.ucsd.edu and book an appointment online. The CAPS website is: <u>https://wellness.ucsd.edu/CAPS/services/Pages/Appointments.aspx</u>.
- 5. The Office for the Prevention of Harassment & Discrimination (OPHD) Provides assistance to students, faculty, and staff regarding reports of bias, harassment, and discrimination. OPHD is the UC San Diego Title IX office. Title IX of the Education Amendments of 1972 is the federal law that prohibits sex discrimination in educational institutions that are recipients of federal funds. Students have the right to an educational environment that is free from harassment and discrimination. Students have options for reporting incidents of sexual violence and sexual harassment. Sexual violence includes sexual assault, dating violence, domestic violence, and stalking.

Information about reporting options may be obtained at OPHD at 858-534-8298, ophd@ucsd.edu, or http://ophd.ucsd.edu. Students may receive confidential assistance at CARE at the Sexual Assault Resource Center at 858-534-5793, sarc@ucsd.edu, or http://care.ucsd.edu, or Counseling and Psychological Services (CAPS) at 858-534-3755 or http://caps.ucsd.edu.

Students may feel more comfortable discussing their particular concern with a trusted employee. This may be a student affairs staff member, a faculty member, a department chair, or other university official. These individuals have an obligation to report incidents of sexual violence and sexual harassment to OPHD. This does not necessarily mean that a formal complaint will be filed. If you find yourself in an uncomfortable situation, ask for help. The university is committed to upholding policies regarding nondiscrimination, sexual violence, and sexual harassment.

OTHER TIPS

Office hours

Office hours are a great resource if you have any questions about the course content. You can also consider office hours to be more like study sessions or free-formed fireside chats, where we can talk about anything related to your academic and general experiences on campus. Stop by for just a few minutes or stay for the entire duration – your choice! Join us with your own questions or come and see what other students have questions about. Please feel free to email and set up a separate appointment with me if necessary. Office hours with instructional assistants will be posted on CANVAS.

College Survival Skills

- Keep a calendar of all exam/assignment due dates and appointments
- Plan on spending two to three hours of studying for every hour of class
- Be on time to class, ask questions when needed, and participate
- Take notes in class and review them often
- Complete all assignments on time
- Take advantage of services on campus to help you succeed such as tutoring
- Arrange for needed accommodations early in the term
- Visit the ACCESS office for assistance, questions, counseling, and class selection they are here to help
- Plan time to eat, sleep and have some fun
- If trouble arises, seek assistance as soon as possible

Coping Skills for Test Anxiety

- Breathing techniques or holding something small to fidget with (like a rubber band)
- Reframing thoughts: believing in yourself and remembering this is just one exam
- Doing the hardest questions (like short answer) first so you can relax a little bit
- Studying as you go, instead of all at once
- Studying in a place that is relaxing or familiar
- Making a routine maybe adding a few questions to a study guide right after each lecture. Routine tends to decrease stress.
- Having breakfast and water (no coffee) right before a test

Self-Advocacy Tips

- Understand my disability and learn ways to compensate
- Learn how to explain my disability and needs to others
- Learn how to ask for appropriate accommodations
- Learn that it is OK to use appropriate accommodations
- Identify my strengths and weaknesses

- Learn that it is OK to ask for help
- Express my needs clearly to all college employees, especially the ACCESS staff and my instructors, early in the term
- Take responsibility and develop independence in coordinating your services
- Meet with instructors when needed

*** This syllabus is subject to change. Any changes will be announced in class and on CANVAS. Students will be responsible for all changes.