

Human Physiology I
BIPN 100, Winter 2022
Mon Wed Fri, 9:00-9:50 am
Peterson Hall 110

Instructor: **Dr. James Cooke**
Office: ~~3080C York Hall~~ [under construction]
email: j2cooke@ucsd.edu (if you email me, please include “BIPN 100” in the subject)
Office hours: We’ll decide by taking a poll in the first class.

Materials:

- Textbook: Human Physiology by Silverthorn, 8th edition (older versions are okay, but page numbers will likely be different.)

Evaluation:	Pre-lecture assignments (due Mondays at 8:59 am)	11%
	Surveys	4%
	Midterm 1	25%
	Midterm 2	25%
	Final Exam	35%

Grades will follow the scheme below:

A+	≥ 90%	B-	70-73
A	85 - 89	C+	67-69
A-	80-84	C	64-66
B+	77-79	C-	60-63
B	74-76	D	50-59

No curving, no nonsense, no BS. The grade you receive is the grade you earned.

Podcasts: You can access the podcasts for our class at podcast.ucsd.edu. You’ll need to log in to access them, but they’ll be there after class. Can’t make it to class? No problem - watch the podcast. But I strongly recommend that you take in-class exercises (worksheets, questions, etc) seriously.

Midterm exams: Are in person at the time and location provided by the registrar. Can’t make it to the midterm (for any reason)? No problem, we’ve accommodated for that (see “Accommodations for exams” below).

Accommodations for exams: IF your final exam score is higher than BOTH midterms, I will make the final exam worth 85% and the midterms worth nothing. See “student D” and “E” examples below.

If one of your midterm exam scores (eg: midterm 1) are lower than the final exam, I will take the 25% and allot it the following way:

If your other midterm score (eg: midterm 2) is higher than your final exam score, I will take 10% of the lower midterm and place it on the higher midterm (eg: midterm 2) to make that midterm worth 35% of your grade. The remaining 15% will be added to your final exam score, which will be worth 50% of your grade. See “Student B” and “C” below.

If the other midterm score is also lower than your final exam score, then both midterms are lower than the final and the final is worth 85%.

Consider the examples of 5 students below:

Student	MT1 score (%)	MT2 score (%)	Final exam score (%)	Then...	Final /85; %
A	74	81	71	MT1 25%; MT2 25%; final exam 35%	63.6 / 85, or 75%
B	65	77	74	MT1 0%; MT2 35%; final exam 50%	63.95 / 85, or 75%
C	84	0	70	MT1 35%; MT2 0%; final exam 50%	64.4 / 85, or 76%
D	55	63	82	MT1 0%; MT2 0%; final exam 85%	69.7 / 85, or 82%
E	0	0	70	MT1 0%; MT2 0%; final exam 85%	59.5 / 85, or 70%

Student A has both midterm scores higher than the final exam, so the distribution is the same as “normal” above. Students B and C have both had one midterm score higher than their final, and one midterm score lower. The lower midterm score is broken up between the higher MT score and the final. Student D’s midterm scores are both lower than their final, so the final accounts for all of their exam scores. Same is true for Student E, who hasn’t even taken a midterm at all!

Remember: if you are unable to take one (or both!) of the midterms: that is okay! The accommodations above will compensate for that. Whether you are sick, family emergency, out of town, etc.

Midterm Group Exams: we are going to use group exams for a portion of our midterms. Here’s how it works: you take a midterm and hand it in (pretty typical so far!). You then get into a group of 3 to 5 people. In your groups, you will then answer **one** of the midterm questions (they are typically 1 page long, and take ~10 minutes each) a second time. Here’s how the scoring will work for group exam questions:

If your group score is higher than your individual score for that question, I will make the group score worth 25% of that question and the individual score worth 75% for that question. For example: if you got a 7/10 the first time, and a 10/10 with your group, your final score for that question will be: $(7 \times 0.75) + (10 \times 0.25) = 7.75/10$.

If your group score is lower than your individual score, I will toss the group score and your individual score will be the only grade that is counted.

Pre-lecture assignments: There will be pre-lecture assignments each week (due on Monday at 8:59am). Most of these assignments are a way for us to get an idea of your knowledge about the content for the upcoming week. You are not expected to know the correct answer to (most of) them, but we want you to give a genuine effort without consulting your textbook (or the internet 😊). You will be graded based on your effort, not correctness. The first assignment is due Monday January 10 (**Monday of Week 2**)! The lowest assignment score of the quarter will be dropped.

Surveys: there will be one survey at the beginning of the year asking about your levels of anxiety on tests; one each after the midterms to see how they went; and one at the end of the course to get your opinion on the pre-lecture quizzes (1% each).

Discussion Sections: are voluntary. You can attend any section you like. However, in the event that the room is at (or over) capacity, preference will be given to students registered for that particular section. Sections are scheduled to be in person, at the location and time provided by the registrar. Sections will begin **week 2**.

Student-centered classroom: it is important to me that our classroom is space where we are able to engage with the material in a meaningful way. There is substantial literature indicating that using class time to answer questions and discuss the content with peers leads to improved outcomes (see: Menekse et al., 2013; Freeman et al., 2014). For that reason, we will spend some time each class answering questions and discussing the content in small groups.

Community Centers at UCSD: The community centers listed below are a great resource for our students to find some comfort and support. Many of them have spaces that you can use to host (for example) group study sessions. I encourage you to visit them in person (when safe!) And feel free to reach out to them at any point. You do not need to identify as a member of these community centers to use them. They are full of wonderful people who want you to succeed!

Center	Contact	Center	Contact
ASIAN PACIFIC ISLANDER MIDDLE EASTERN DESI AMERICAN PROGRAMS & SERVICES	https://apimeda.ucsd.edu/index.html	LGBT RESOURCE CENTER	https://lgbt.ucsd.edu/
BLACK RESOURCE CENTER	https://brc.ucsd.edu/	RAZA RESOURCE CENTRO	https://raza.ucsd.edu/index.html
CROSS CULTURAL CENTER	https://ccc.ucsd.edu/index.html	WOMEN'S CENTER	https://women.ucsd.edu/
INTERTRIBAL RESOURCE CENTER	https://itrc.ucsd.edu/index.html	STUDENT VETERANS RESOURCE CENTER	https://svrc.ucsd.edu/

Values: I want our classroom to be a place where we are free to explore the material in a manner that is respectful and engaging. We should feel free to make mistakes and ask challenging questions of each other. To that end, I've included a table below that outlines what students can expect from the teaching team, and what we should be able to expect from them.

	It is expected that students will:	The students can expect that we will:
Honesty	<ul style="list-style-type: none"> demonstrate your knowledge and abilities without outside aids or looking at the answers of others during exams. 	<ul style="list-style-type: none"> evaluate your knowledge of course concepts objectively and honestly. admit if a mistake has been made, and correct the mistake.
Responsibility	<ul style="list-style-type: none"> show up to class on time, ready to think critically about, and engage meaningfully with, course material. 	<ul style="list-style-type: none"> use student-centered approaches in the classroom that have been shown to increase retention of course material, improve grades, and lower failure rates for all students, especially first-generation students and under-represented minorities (Eddy and Hogan, 2014). Start class on time.
Respect	<ul style="list-style-type: none"> use language in the classroom that is inclusive and respectful of myself and your peers. 	<ul style="list-style-type: none"> help facilitate respectful dialogue amongst students. engage with students in a respectful manner.
Fairness	<ul style="list-style-type: none"> contribute meaningfully to group discussions, so as not to take advantage of others. 	<ul style="list-style-type: none"> Create and grade assessments in a manner that is objective and reasonable. Treat all groups equally.
Trustworthiness	<ul style="list-style-type: none"> not post any of our course content (slides, practice problems, pre-reading quiz problems) on the internet 	<ul style="list-style-type: none"> respond to emails in a timely fashion, IF the answer to any question is not in the syllabus
Courage	<ul style="list-style-type: none"> say or do something when you see actions that undermine the above values. 	<ul style="list-style-type: none"> happily receive constructive criticism about our teaching at any time. say or do something when we see actions that undermine the above values.

modified with permission from Dr. Tricia Bertram Gallant.

Please see the UCSD rules on Academic Integrity and Standards (academicintegrity.ucsd.edu). When in doubt, just ask a member of the teaching team. The teaching team and I are obligated to report all incidents of cheating to the Academic Integrity Office.

Teaching Team, Sections and Office Hours

Who	email	What	Where	When
Jasper Hsu	j2hsu@ucsd.edu	Discussion Section	Solis 110	Mon 10 - 11 am
			Solis 110	Mon 11 - noon
		Office hours	Zoom: see calendar	Thur 1 - 2 pm
Nicole Marcus	namarcus@ucsd.edu	Discussion Section	HSS 1305	Mon 10 - 11 am
			HSS 2154	Mon 1 - 2 pm
		Office Hours	Audrey's Cafe in Geisel	Wed 10 - 11 am
Sindhu Daggapati	sdaggupa@ucsd.edu	Discussion Section	HSS 2154	Mon 4 - 5 pm
		Office hours	in front of John's Market	Mon 3 - 3:45 and Mon 5 - 5:30
Connor Davies	crdavies@ucsd.edu	Discussion Section	Center 217B	Fri 8 - 9 am
		Office hours	Tables out front of Peterson Hall	Mon 10 - 11 am
Anne Illustrisimo	milustri@ucsd.edu	Discussion Section	U301 122	Fri 4 - 5 pm
		Office hours		
Kyanh Ly	kply@ucsd.edu	Discussion Section	Center 217B	Mon 8 - 9 am
		Office hours	Audrey's Cafe in Geisel 2 East	Tues 5:30 - 6:30
Jason Tran	jat003@ucsd.edu	Discussion Section	Solis 110	Wed 3 - 4
		Office hours		
Katelynn Tran	kltran@ucsd.edu	Discussion Section	APM 2301	Fri noon - 1
		Office hours	Zoom: see calendar	Mon noon - 1 pm

Tentative Schedule BIPN100, Winter 2022

Week	Date	Topic
1	Jan 3 - 7	membranes and membrane transport Resting membrane potential
2	Jan 10 - 14	action potentials: channels and their function action potentials: refractory periods and propagation
3	Jan 19 - 21	Synaptic transmission: vesicular release; receptors; termination; EPSPs and IPSPs; post-synaptic summation
4	Jan 24 - 28	Spinal cord organization Sensory systems
4	Jan 26, 8:00-10:00 pm	Midterm #1, up to and including spinal cord organization
5	Jan 31 - Feb 4	Autonomic nervous system Endocrinology: Feedback loops, hormones, receptors, HPA axis
6	Feb 7 - 11	Skeletal muscle: excitation-contraction coupling, cross-bridges and power strokes, recruitment, contraction, metabolism
7	Feb 14 - 18	Smooth muscle contraction and regulation Cardiac muscle: EC coupling; Action potentials
7	Feb 16, 8:00-10:00 pm	Midterm #2, focusing on Sensory systems to skeletal muscle
8	Feb 23 - 25	Cardiac muscle: Action potentials of pacemaker cells inotropy, chronotropy, dromotropy Cardiac muscle: EKGs; Wigger's diagram; P/V loops
9	Feb 28 - Mar 4	Blood flow, pressure and resistance Capillary exchange; Regulation of blood pressure Renal physiology: filtration and reabsorption
10	Mar 7 - 11	Renal physiology: secretion, excretion Measuring renal flow rates Endocrine control of renal function
11	Mar 16, 8:00 - 11:00am	Final exam: Comprehensive, but more on Weeks 7-10