

Course Syllabus

HUMAN PHYSIOLOGY I

BIPN 100 (Spring, 2024)

EMAIL: bipn100@gmail.com

INSTRUCTOR: Vineet Augustine, Ph.D.,
Office Hours: Tuesday 10:00 - 11:00 a.m.
Office: Pacific Hall 2124B

SECTIONS, OFFICE HOURS and TAs/IAs:

TA: **Jie Zhang**

IAs: **Alexander Pham, Amber Selstad and Minh-Nha Kawamura**

Our TA and IAs are fantastic! They are going to host section, office hours, and a weekly review session. I strongly encourage you to attend all of the above!

Section: Friday, 8:00 - 8:50 am. Zoom: <https://ucsd.zoom.us/j/2576415105> 
(<https://ucsd.zoom.us/j/2576415105>)

Office hours:

Jie: Mondays, 5:00 - 6:00 pm @ Bio Sci Student Lounge at Pacific Hall 3140

Zoom: <https://ucsd.zoom.us/j/2576415105> 

(<https://ucsd.zoom.us/j/2576415105>)

Alexander: Wednesdays, 11:00 am - 12:00 pm @ Hybrid: Pacific Hall 3100H

Zoom: <https://ucsd.zoom.us/j/4748874099> 

(<https://ucsd.zoom.us/j/4748874099>)

Amber: Mondays, 2:00 - 3:00 pm @ Hybrid: Tables outside of Galbraith Hall

Zoom: <https://ucsd.zoom.us/j/4748874099> 

(<https://ucsd.zoom.us/j/4748874099>)

Minh-Nha: Fridays, 9:00 - 10:00 am @ Hybrid: Outside tables by Bird Rock Coffee Roasters /the Trolley

<https://ucsd.zoom.us/j/4748874099>

Weekly Review Session: Fridays, 4:00 - 6:00 pm @ Solis 104 (will be podcast)

This course covers the physiology of the nervous, endocrine, muscular, cardiovascular, and renal systems. There will be two lectures (CTL (Catalyst) 0125, Tuesdays/Thursdays 8:00 am - 9:20 am) per week. Two midterms and a final will be given.

Topics

Grade

Midterm #1 Homeostasis, Communicating across membranes, Nervous System	30%
Midterm #2 Endocrine System, HPA, Skeletal, Smooth Muscles, Cardiac Muscle, EKGs, Cardiovascular System	30%
Final Regulation of Hemodynamics, Renal System, Fluid Balance, and Everything Else	40%

MATERIALS

- Text (Optional): Human Physiology, Silverthorn.
- Materials on Canvas (syllabus, class notes, problem sets, etc.)

CANVAS: Announcements, lecture slides, quizzes, problem sets, class discussion forums, and grades are communicated via Canvas. Please check regularly.

PROBLEM SETS: They consist of questions that will help you evaluate your understanding of the material covered in the lectures and the reading. Treat them like exams (answer the questions before looking at the answers). Those who work through the problem sets are more likely to receive higher

grades. These problems sets are to aid in studying and generate discussion. They are not turned in or graded.

NO CHEATING: You are not allowed to look at other students' work. Working with someone else is cheating. Students caught cheating will receive 0 points for that exam and will be reported to the Academic Integrity Office for further administrative action.

BIPN 100 SCHEDULE (subject to change)

- Lectures will be podcast.
- Midterms and the final are based on material covered during lectures.

<u>LECTURE</u>	<u>DATE</u>	<u>TOPICS</u>
#1	April 2	Introduction to the course Background Homeostasis Fluid compartments Transport across membranes
#2	April 4	Communicating across membranes Equilibrium potential

Membrane potential

#3 April 9 Neuron Structure/Function
Action Potentials

#4 April 11 Synaptic Transmission

#5 April 16 Organization of the Nervous System

#6 April 18 Sensory Systems

#7 April 23 Autonomic Responses

#8 April 25 Reflexes

MIDTERM #1

#9 April 30 Endocrine Systems/Receptor Basics

#10 May 2 Hypothalamus/Pituitary Axis

#11 May 7 Skeletal Muscle Structure/Function

#12 May 9 Smooth Muscle

#13 May 14 Cardiac Muscle

#14 May 16 Cardiac Cycle

#15 May 21 EKG, Cardiovascular System

#16 May 23 Regulation of hemodynamics

MIDTERM #2

#17 May 28 Regulation of hemodynamics

#18	May 30	Renal System
#19	June 4	Electrolyte Control
#20	June 6	Systemic interplay between systems
		FINAL

The best way to study for this class is to do the following:

- 1). Come to lecture and take notes (or write notes on the lecture slides).
- 2). Copy your notes. While you do this (or while reading through the lecture slides), use the textbook (or some kind of reference) to help fill in the details or clarify the concepts. The best time to do this is the same day as the lecture. You should also make summary tables (such as a table of receptors, their transduction pathways, locations, and functions) and draw out the transduction pathways/other important figures.
- 3). Make a list of questions while you study the lectures. Bring the list with you to office hours and sections so you can make sure to get answers to all of your questions.
- 4). Study before going to section.
- 5). First do the problem set questions without looking at the answers. This is the best way to practice problem solving and assess how well you know the material. Then check your answers against the answers that are provided. Make a list of questions about things that don't make sense or about how to do the problem solving.
- 6). The office hours can be used for going over doubts.

YOU ARE NOT ALLOWED TO:

1). Post any class materials (including lectures, audio or video recordings, problem sets, exams, etc.) on the internet.

Any of these will be reported as a violation to the Academic Integrity Office

Last but not least.

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. UC San Diego 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 \(mailto:\(858\)534-8298\)](tel:(858)534-8298), [ophd@ucsd.edu \(mailto:ophd@ucsd.edu\)](mailto:ophd@ucsd.edu) or [http://ophd.ucsd.edu \(http://ophd.ucsd.edu/\)](http://ophd.ucsd.edu). Students may receive confidential assistance at CARE at the Sexual Assault Resource Center at (858) 534-5793, [sarc@ucsd.edu \(mailto:sarc@ucsd.edu\)](mailto:sarc@ucsd.edu) or [http://care.ucsd.edu \(http://care.ucsd.edu/\)](http://care.ucsd.edu) or Counseling and Psychological Services (CAPS) at [\(858\) 534-3755 \(tel:%28858%29%20534-3755\)](tel:(858)534-3755) or [http://caps.ucsd.edu \(http://caps.ucsd.edu/\)](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 department Chair, a faculty member 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 UC San Diego is committed to upholding University policies regarding nondiscrimination, sexual violence and sexual harassment.