

BICD110

Cell Biology

Spring quarter, 2023
Last Updated [April 3, 2023]

Instructor: Professor Douglass Forbes

Important Note: *This syllabus, along with course assignments and due dates, are subject to change. It is the student's responsibility to check Canvas for corrections or updates to the syllabus. Any changes will be clearly noted in a course announcement or through email. NOTE: All educational sessions (i.e., lectures and discussion sections) will be recorded and made available asynchronously to the class. Exams will be synchronous (not asynchronous) and will be Zoom proctored.*

Course Overview

Welcome to BICD 110, Cell Biology. BICD110 this year will be given fully online throughout Spring quarter.

Logistics: *Class will meet live by Zoom on Tuesday and Thursday 12:30-1:50pm each week. Invitations to those Zoom Chats should normally be visible on the class Canvas site.*

ACTION ITEM NOW: The first lecture will be on Techniques, primarily microscopic techniques. I will put the lectures slides (in pdf form) on the class Canvas web site immediately before the first class period, which is at 12:30pm, Tuesday, April 4.

The first day, I will give an Intro and Welcome, then spend the majority of the class period on a Techniques lecture. Questions can be asked via the Chat function of Zoom. An IA will cohost with me so that she can relay your questions to me.

Similarly, for Lectures 2-19, a pdf file of the slides for the day's lecture will also be posted immediately before the class. The live lectures will be recorded and made available on the class web site in the Media Gallery for those of you unable to attend lecture synchronously. (Note: It takes a bit of time for Zoom to get lecture recordings back to me and for me to slightly edit them; the recorded lecture should be available by that evening or the next morning for asynchronous viewing.)

Overview of what we will cover: I love Cell Biology and think it integral to fully understanding almost any other area of biology or medicine. This course will attack the cell from the ground up starting from: the structure of Membranes, how to get small molecules into the cell (Membrane Transport), large items into the cell (Endocytosis), how the cell is compartmentalized and uses a complex set of organelles to direct traffic and cell function (ER, Golgi, Lysosomes, Nucleus, Mitochondria) and how each of these areas are not only vital, but often altered or mutant in human disease. We will explore the major three Cytoskeletons of the cell, and the way that choreographed alteration of the cytoskeleton and their "motors" gives rise to different unique structures in the cell, such as cilia, flagella, the ability of cells to locomote, etc. We will study Cell-Cell Communication from communication across the shortest distances to signaling across miles as seen with pheromones. We will cover Cancer, Oncogenes, and anti-cancer

therapies. In an Immunology lecture, I will provide you a good basis for understanding many of the key Immunology concepts, such as how our bodies can recognize so many antigens and achieve immunity to them (as in COVID virus vaccination). Immunology also ties into the latest anti-cancer techniques. I will also give you a Careers lecture. Lastly, we will cover Cell-Cell Junctions and the Extracellular Matrix (ECM), two topics that are absolutely essential to developing into a multicellular organism.

Course Goals:

- Build a picture of the cell in your mind
- Learn to read research papers
- Learn that people do science and learn a subset of Scientists' names
- Discuss careers
- Provide a support community for dealing with the present challenges

Website:

- The class website is located at CANVAS <https://canvas.ucsd.edu>
- Contact Head IA: [Melissa Heredia](mailto:mheredia@ucsd.edu) (email: mheredia@ucsd.edu) for website ?'s.
- Please contact your own IA for questions on the class material.

Discussion Sections:

- Discussion sections will be held online once a week with your I.A.
- **SECTIONS WILL MEET ON WEEK 1 WITH THEIR IA**
 - **NO DISCUSSION paper is assigned for the first week,
- Some weeks you will discuss original research papers
PLEASE READ THE PAPER BEFORE SECTION!!
- Week 2's paper will be posted on our website by Friday.
- Other weeks you will review class material from a previous exam.
- **The subject matter in research papers will be on the exams (~10% of class pts).**

Instructional Team

Instructor

Douglass Forbes, Ph.D.
Professor, (she/her)
Cell and Developmental Biology
dforbes@ucsd.edu
My Virtual Office Hours: To be determined

Instructional Assistants:

Melissa Heredia (grad)	mheredia@ucsd.edu	Section B01, B09
Jack Ord	jord@ucsd.edu	Section B08
Kirstin Dukleth	kdukleth@ucsd.edu	Section B06
Ada Lyu	chlyu@ucsd.edu	Section B04
Daniel Mayrink	dmayrink@ucsd.edu	Section B03
Nicole Nashed	nnashed@ucsd.edu	Section B02
Madeline Williams	mgwillia@ucsd.edu	Section B07
Samantha Wong	sjw004@ucsd.edu	Section B05

Sections: Below are the scheduled online sections. Further details will be announced.

B01	Wednesday	8:00-8:50 am	mheredia@ucsd.edu	Virtual section
B02	Friday	11:00-11:50 am	nnashed@ucsd.edu	Virtual section
B03	Friday	12:00-12:50 pm	dmayrink@ucsd.edu	Virtual section
B04	Tuesday	6:00-6:50 pm	chlyu@ucsd.edu	Virtual section
B05	Tuesday	7:00-7:50 pm	sjw004@ucsd.edu	Virtual section
B06	Tuesday	8:00-8:50 pm	kdukleth@ucsd.edu	Virtual section
B07	Thursday	6:00-6:50 pm	mgwillia@ucsd.edu	Virtual section
B08	Thursday	7:00-7:50 pm	jord@ucsd.edu	Virtual section
B09	Thursday	8:00-8:50 pm	mheredia@ucsd.edu	Virtual section

In Spring 2022, all instruction for this class will be conducted in a remote format. In general, this means the class will include a series of real-time and recorded sessions, in addition to learning activities and opportunities to connect with the instructional team and other students such as Discussion Sections. Just as with a regular course, it is expected that you will spend ~12 of hours per week on this course.

Grading Information

NOTE: Exams will be synchronous (not asynchronous). This course will have two exams, a midterm and a final exam. The midterm exam will be given during the normal lecture time (12:30-1:50pm) on Thursday April 4th. **It is expected that you will be able to attend the exams on the specified date by the instructor and the University. Some of you may encounter a serious situation out of your control, such as illness, and be unable to take the exam during the designated time. Under such circumstances, you are required to contact Professor Forbes to ask if you can make a specific arrangement ahead of time. This rare event should be used only in serious situations and is not automatic. It is not for students taking another class at the same time. An inability to take these two exams for any reason except those addressed above will not warrant requests for make-up exams.**

All the exams will be closed book/closed internet/closed Canvas material, and other electronic devices off, except accessing the exam questions on-line. Zoom proctoring may be used by us. Exam questions will be derived from the lectures, Discussion papers, and (for the Final) the problem set. All is designed to test your understanding of the materials.

Scoring Breakdown

Point Distribution:

- a) One Midterm; worth 100 points; Thursday, May 4th
- b) Final worth 150 points; Monday, June 12 from 11:30 am - 2:29 pm
- c) Other occasional assignments (that are not large, but important to do)

**Note: Material from the Discussion papers will be ~10% of each exam.
In addition, Scientists' Names will be worth ~10% of the Final.**

Grading Scale

A = 90-100%
A- = 87-89%
B+ = 81-86
B = 70-80%

C+ = 65-69%
C = 55-64%
C- = 50-53%
D = 44-49%
F = 44%-below

Pass/No Pass Option (see below)

The Division of Biological Sciences recognizes the challenges facing all students. Faculty and staff across campus are here to support you.

Course Policies

Classroom conduct: While all the course materials will be offered on-line rather than in the classroom setting, general policies remain the same. Please refrain from all unnecessary use of electronics, side conversations, and multi-tasking including eating, newspaper reading during the live sessions. Please turn off your cell phones and be respectful of classmates. You are invited to participate in creating an environment of mutual respect and intellectual productivity by listening and speaking with an open mind.

Make up exams and lateness: A student may not take a make-up test unless she/he has an excused absence. Excused absences are given only with presentation of a valid medical or emergency excuse (for self or family member) in writing although a medical doctor's note will not be required for this year. Any other failure to take an exam when it is scheduled will result in no credit for the exam. There are no makeups for the final exam unless you meet the conditions set out in the undergraduate handbook.

Accommodations: Anyone in need of classroom or exam accommodations for a disability is encouraged to contact the Office for Students with Disabilities and should also inform me as soon as possible.

Academic integrity: Academic Integrity is expected of everyone at UC San Diego. This means that you must be honest, fair, responsible, respectful, and trustworthy in all of your actions. Lying, cheating, or any other forms of dishonesty will not be tolerated because they undermine learning and the University's ability to certify students' knowledge and abilities. Thus, any attempt to get, or help another get a grade by cheating, lying or dishonesty will be reported to the Academic Integrity Office and will result in sanctions. Sanctions can include an F in the class and suspension or dismissal from the University. So, think carefully before you act. Before you act, ask yourself the following questions: a) is my action honest, fair, respectful, responsible, and trustworthy, and b) is my action authorized by the instructor? If you are unsure, don't ask a friend, ask your instructor, instructional assistant, or the Academic Integrity Office. You can learn more about academic integrity at academicintegrity.ucsd.edu. (Source: Bertram Gallant, T. (2017). *Teaching for integrity. UC San Diego Academic Integrity Office.*)

Absolutely no cheating will be tolerated. All suspicions of integrity violation will be reported to the Academic Integrity Office according to university policy. The Policy on Integrity of Scholarship (academicintegrity.ucsd.edu) list some of the standards by which you are expected to complete your academic work, but your good ethical judgment (or asking me for advice) is also expected as we cannot list every behavior that is unethical or not in the spirit of academic integrity.

Those students found to have committed academic misconduct will face administrative sanctions imposed by their college's Dean of Student Affairs and academic sanctions imposed by me. Students can also face

suspension and dismissal from the University; those sanctions are not at my discretion. Academic sanctions can range from an F on the assignment to an F in the class. The appropriate sanctions are determined by the egregiousness of the Policy violation. Students who assist in or are complicit with cheating could also be in violation of the Policy. Thus, students who become aware of their peers either facilitating academic misconduct or committing it should report their suspicions to me for investigation. ***MORE INFO AND CONSIDERATIONS ARE AT THE END OF THIS DOCUMENT***

For further information:

https://academicintegrity.ucsd.edu/index_old.html

Communication Guidelines

As we move through the quarter, you might have questions about the course structure, content, or general inquiries for the instructional team.

If the question is related to course structure, please be sure to read the syllabus and look through the course on Canvas before asking your IA.

Netiquette

Netiquette is a set of rules for behaving properly online. Your instructor and fellow students wish to foster a safe online learning environment. All opinions and experiences, no matter how different or controversial they may be perceived, must be respected in the tolerant spirit of academic discourse. You are encouraged to comment, question, or critique an idea but you are not to attack an individual. Working as a community of learners, we can build a polite and respectful course community. The following netiquette tips will enhance the learning experience for everyone in the course:

- Do not dominate any discussion.
- Give other students the opportunity to join in the discussion.
- Do not use offensive language. Present ideas appropriately.
- Be cautious in using Internet language. For example, do not capitalize all letters since this suggests shouting.
- Popular emoticons such as 😊 or / can be helpful to convey your tone but do not overdo or overuse them.
- Avoid using vernacular and/or slang language. This could possibly lead to misinterpretation.
- Never make fun of someone's ability to read or write.
- Keep an "open-mind" and be willing to express even your minority opinion. Minority opinions have to be respected.
- Think and edit before you push the "Send" button.
- Do not hesitate to ask for feedback.
- Using humor is acceptable

Adapted from:

Mintu-Wimsatt, A., Kernek, C., & Lozada, H. R. (2010). *Netiquette: Make it part of your syllabus*. *Journal of Online Learning and Teaching*, 6(1). Retrieved from http://jolt.merlot.org/vol6no1/mintu-wimsatt_0310.htm

Course Materials & Technology

All relevant course material will be posted on UCSD Canvas.

We do not use a text book.

Students will read primary research papers prior to attending a subset of the Discussion sections. The papers will be posted on our UCSD Canvas class site, usually on the Friday before the Section where the paper is discussed.

Canvas

Our course will be hosted on the Canvas learning management system (<https://canvas.ucsd.edu>). Once you login with your UC San Diego username and password, you will be able to access additional course materials, scheduled sessions, opportunities for interaction and more.

Tip: You can download the Canvas Mobile App and connect to “UC San Diego” to access your courses on your Android or iOS device: <https://community.canvaslms.com/docs/DOC-4048> (check to see if still correct)

Zoom

Our course will make use of Zoom for lectures, real-time office hours, Discussion sections, and pre-exam Review sessions. Learn more and download the Zoom Client for Meetings, and/or the Zoom Mobile Apps at <https://ucsd.zoom.us/>

NOTE: All lectures and Discussion Sections will be recorded and made available asynchronously to the class. (Remember: the midterm and final have to be done synchronously at the appointed time.)

Course Technology Requirements

To participate in this course, you will need the following:

- A laptop or desktop with a current operating system and internet access
- You will also need access to the following tools to fully participate in this course such as exams:
 - Webcam (for video conferencing through Zoom; proctoring).
 - Microphone (for audio conferencing through Zoom)
 - A stable internet
 - Current browser

Academic Senate Rules (from the Academic Senate homepage):

With guidance and support from the Academic Senate, due to changes in campus operating status during the Novel Coronavirus (COVID-19) pandemic, it is possible that several temporary academic exceptions may have been approved for SP23 or not. These may be detailed on the Academic Senate

homepage or elsewhere. Please seek that information in its entirety as grading options (grade or P/NP) and the add/drop/and change to grading option deadlines for SP23 may have been adjusted. It is your responsibility to seek out the campus deadlines appropriate for Spring Quarter 2023.

Student Resources

Academic Support

UC San Diego Library

- Ask a Librarian: <https://library.ucsd.edu/ask-us/>
- Library Help: <https://library.ucsd.edu/ask-us/triton-ed.html>

Teaching + Learning Commons

- Writing Hub: <https://writinghub.ucsd.edu/>
Improve writing skills and connect with a peer writing mentor
- Academic Achievement Hub: <https://aah.ucsd.edu/>
Supplemental instruction, content tutoring and learning strategy tutoring

Office of Academic Support & Instructional Services (OASIS): <https://oasis.ucsd.edu/>

Intellectual and personal development support

Student Success Coaching Program: <https://successcoaching.ucsd.edu/>

Peer mentor program that includes information, resources, and support in meeting your goals

Additional Student Resources for Your Personal Well-Being

The Hub Basic Needs

The Hub addresses basic needs insecurities you might face. They provide necessary resources, break stigma surrounding basic needs, and foster a sense of belonging for every student. The Hub builds community to help one another.

<https://basicneeds.ucsd.edu/> | basicneeds@ucsd.edu | (858) 246-2632

Counseling and Psychological Services (CAPS)

Services and programs that enhance the college experience, promote academic success, and help you develop effective coping skills

<https://CAPS.ucsd.edu> | (858) 534-3755

CARE at the Sexual Assault Resource Center

<https://care.ucsd.edu> | sarc@ucsd.edu | (858) 534-5793

Office for the Prevention of Harassment & Discrimination (for Students)

https://ophd.ucsd.edu/policies-procedures/polpro_student.html

Undocumented Student Services: <https://uss.ucsd.edu/>

Triton Concern Line: (858) 246-1111

<http://blink.ucsd.edu/go/students-of-concern>

Report students of concern

Student Accommodations

Students requesting accommodations for this course due to a disability must provide via email a current Authorization for Accommodation (AFA) letter issued by the Office for Students with Disabilities (OSD) which is located in University Center 202 behind Center Hall. Students are required to present their AFA letters to Faculty (please make arrangements to contact me privately) and to the OSD Liaison in the department in advance so that accommodations may be arranged.

Office for Students with Disabilities (OSD)

<https://disabilities.ucsd.edu/> | osd@ucsd.edu | (858)534-4382

UC San Diego Principles of Community

The University of California, San Diego is dedicated to learning, teaching, and serving society through education, research, and public service. Our international reputation for excellence is due in large part to the cooperative and entrepreneurial nature of the UC San Diego community.

To foster the best possible working and learning environment, UC San Diego strives to maintain a climate of fairness, cooperation, and professionalism. These principles of community are vital to the success of the University and the well being of its constituents. UC San Diego faculty, staff, and students are expected to practice these basic principles as individuals and in groups.

<https://ucsd.edu/about/principles.html>

Equity, Diversity and Inclusion

UC San Diego (as an institution) and I (as a human being and instructor of this course) are committed to full inclusion in education for all persons. Services and reasonable accommodations are available to students with temporary and permanent disabilities, to students with DACA or undocumented status, to students with health or other personal concerns, and to students with other kinds of support needs. Please feel free to let me know if there are circumstances affecting your ability to participate in class. Some resources that might be of use include:

Office of Equity, Diversity, and Inclusion

<https://diversity.ucsd.edu/> | diversity@ucsd.edu | (858) 822-3542

Equity and Inclusion During COVID-19:

<https://diversity.ucsd.edu/COVID-19-EDI/index.html>

Student Life: Diversity

<https://students.ucsd.edu/student-life/diversity/>

UC San Diego Policies

Academic Integrity

Academic Integrity is expected of everyone at UC San Diego. This means that you must be honest, fair, responsible, respectful, and trustworthy in all of your actions. Lying, cheating or any other forms of dishonesty will not be tolerated because they undermine learning and the University's ability to certify students' knowledge and abilities. Thus, any attempt to get, or help another get, a grade by cheating, lying or dishonesty will be reported to the Academic Integrity Office and will result sanctions. Sanctions can include an F in this class and suspension or dismissal from the University. So, think carefully before you act by asking yourself:

- a) Is what I'm about to do or submit for credit an honest, fair, respectful, responsible & trustworthy representation of my knowledge and abilities at this time and,
- b) Would my instructor approve of my action?

You are ultimately the only person responsible for your behavior. So, if you are unsure, don't ask a friend—ask your instructor, instructional assistant, or the Academic Integrity Office. You can learn more about academic integrity at <http://academicintegrity.ucsd.edu>

(Source: Academic Integrity Office, 2018)

UCSD Student Conduct Code

https://students.ucsd.edu/files/student-conduct/ucsandiego-student-conduct-code_interim-revisions1-16-18.pdf

University of California Diversity Statement

<https://regents.universityofcalifornia.edu/governance/policies/4400.html>

Religious Accommodation

[EPC Policies on Religious Accommodation, Final Exams, Midterm Exams](#)