PSY304 Biopsychology

Fall 2021

4 credits • CRN 15402

Class Meetings: TR 12:15-1:45

Midterm 1: Oct 26

Midterm 2: Nov 16

Final exam: June 8

Zoom Link  (https://uoregon.zoom.us/j/99993744865?pwd=MnZldXh1RDhxOGhrYTdia2xQU3RYdz09)

(password = PSY304)

Online discussion:

Packback community  (https://questions.packback.co/communities/4fe162bf-dc3d-4dfd-93d0-aef4df1af67a/curiosity-feed/new#post-91536fec-58d9-4e7e-9194-70314dee0ae5)

(register with the look-up key:
cc0f1493-4370-4ddd-858e-cbf1478eefa4)

Instructor: Matt Smear
Pronouns: he/him
email: smear@uoregon.edu (mailto:smear@uoregon.edu)
Voicemail: (mailto:prd@uoregon.edu) 541-346-4389
Office MW 2:00-3:00, or by appt.
Welcome to PSY304 Biopsychology.

This class is officially offered in person. I will give live lectures in Straub 145 Tuesdays and Thursdays 12:00-1:20 pm and you are welcome to attend in person. At the same time, my goal is to make it as safe and easy as possible for students to access this course in whatever format they are comfortable. Therefore, all lectures will be live-streamed via Zoom and recorded for later viewing. In-person attendance in lecture is not required. Feel free to stay at home if you prefer. And ABSOLUTELY DO NOT ATTEND CLASS IN PERSON IF YOU HAVE ANY SYMPTOMS. If you have COVID symptoms or have been in close contact with someone with known COVID, quarantine and call the UO Health Center at 541-346-2770 (tel:5413462770). As per UO policy, masks are required indoors. I WILL NOT TEACH YOU IF YOU ARE NOT WEARING A MASK OVER BOTH MOUTH AND NOSE. Additional COVID policies and resources are included at the end of this syllabus.

The key to making this endeavor a success is flexibility. We understand that you, as students, are experiencing constraints that you would not typically experience during a regular academic term, so we vow to provide you flexibility and a willingness to help you work around those constraints to the best of our ability. On the other hand, hybrid remote/in-person teaching is new to us as well, and we are facing our own constraints, so we hope that you will provide us some flexibility as we make our way through the term. At every step, we will value your feedback on what is working and what is not, and we'll try our best to make appropriate alterations in order to increase our chance of success.

Communication will be key! I will host “live” office hours through Zoom each week on Mondays and Wednesdays, from 2-3 pm (we will be able to go into private breakout rooms for discussions that should remain confidential). The GEs will also hold regular office hours.
IF YOU WANT TO SPEAK WITH ME, PLEASE DROP ME AN EMAIL TO LET ME KNOW IF YOU PLAN TO COME TO OFFICE HOURS. IF THAT TIME SLOT IS DISADVANTAGEOUS FOR YOU, EMAIL ME AND I WILL MEET YOU AT ANOTHER TIME, DEPENDING ON THE OTHER OBLIGATIONS I HAVE (I HAVE A LOT OF THOSE). I WILL MAKE TIME:

General Course Description:

"The Brain—is wider than the Sky—
For—put them side by side—
The one the other will contain
With ease—and You—beside—

The Brain is deeper than the sea—

For—hold them—Blue to Blue—
The one the other will absorb—
As Sponges—Buckets—do—

The Brain is just the weight of God—
For—Heft them—Pound for Pound—
And they will differ—if they do—
As Syllable from Sound—"

-Emily Dickinson
“For instance, the scientific article may say, ‘The radioactive phosphorus content of the cerebrum of the rat decreases to one-half in a period of two weeks.’ Now what does that mean? It means that phosphorus that is in the brain of a rat—and also in mine, and yours—is not the same phosphorus as it was two weeks ago. It means the atoms that are in the brain are being replaced: the ones that were there before have gone away. So what is this mind of ours: what are these atoms with consciousness? Last week’s potatoes! They now can remember what was going on in my mind a year ago—a mind which has long ago been replaced. To note that the thing I call my individuality is only a pattern or dance, that is what it means when one discovers how long it takes for the atoms of the brain to be replaced by other atoms. The atoms come into my brain, dance a dance, and then go out—there are always new atoms, but always doing the same dance, remembering what the dance was yesterday.”

-Richard Feynman

These quotes illustrate the central challenge of Biopsychology: how can "last week's potatoes" be built into something "wider than the sky"? Short answer: we don't know! In this course, I will try to give you an understanding of what we do know about the brain so far, as well as what we don't. On top of that, I will expose you to some of the latest cutting-edge research. But my primary goal is to stoke your sense of wonder about the mysterious majesty of the brain.

We begin by exploring the cells, or neurons, that make up the brain – their structure and function, with a focus mostly on how these neurons “communicate” with one another using electrical currents and chemical signals. We also discuss how the chemical interaction between neurons is affected by drugs (those prescribed by a doctor, as well as those that aren’t…), so that we can better understand their
behavioral effects and associated benefits (and dangers). We also study the anatomy of the brain and the way in which different functions are segregated within the tissue. We then explore many of these functions in depth, including, for example:

- Sensation (mainly vision and smell), which allows us to discover things about the world around us.
- Learning and memory, which provides a means of storing (and later recalling) that new-found information.
- Reproductive behavior, which is – well, you know what that’s for…
- Emotions, which modulate and color our behavior and interactions with others.

Finally, we discuss what happens when things go wrong in the brain – lesions due to trauma or stroke, and psychiatric conditions like autism, schizophrenia, and depression, to name a few.

The course assumes minimal prior knowledge about neuroscience, as well as a strong desire to learn how last week’s potatoes can think, act and feel.

**Course Goals:** By the end of this course you should be able to:

- Identify neural structures and anatomical subdivisions of the nervous system, explain neural communication, and discuss how chemicals affect neural processing;
- Describe how our underlying physiology influences a wide range of human behaviors;
- Reflect on course topics and apply the information you learned to your own lives;
- Understand (with appropriate skepticism) neuroscience-related reports in the popular press.

**Optional Course Material:** The textbook (*The Mind’s Machine, 3rd Ed.*, by Watson & Breedlove) is available in two ways:

- Because this textbook and I emphasize different things, I am making buying the text optional this quarter. Nevertheless, I encourage you to consult the textbook to supplement the lessons I give in lectures.
- Due to the difficulty some of you may experience getting the textbook, I have posted pdfs of the different chapters into Canvas.

If you’d rather have the full textbook, you can buy or rent the text from the Duckstore ([https://www.uoduckstore.com/Minds-Machine-Foundations-of-Brain-and-Behavior](https://www.uoduckstore.com/Minds-Machine-Foundations-of-Brain-and-Behavior)). The ebook version is $49.98, used printed is $124.00, and new printed is $165.25. (Note that printed copies can NOT be picked up from the Duckstore, but will provide free shipping instead.) If you do want the full version of the text, the Duckstore prices are very competitive, and I encourage you to use this local option.

Supplemental material for the textbook (including practice quizzes) can be found at [http://3e.mindsmachine.com/](http://3e.mindsmachine.com/), when registering for the site, you may need to enter the instructor’s email address, [prd@uoregon.edu](mailto:prd@uoregon.edu).
**Technical Requirements:** Our class will primarily communicate through our Canvas site; log into [canvas.uoregon.edu](http://canvas.uoregon.edu) using your DuckID to access our class. Announcements and emails are archived there and automatically forwarded to your UO email, and can even reach you by text (check and adjust your settings under Account > Notifications). If you have questions about accessing and using Canvas, visit the [Canvas support page](https://service.uoregon.edu/TDClient/2030/Portal/Requests/ServiceDet?ID=38635). Canvas and Technology Support also is available 6 am-12 am any day by phone (541-346-4357) or live chat ([livehelp.uoregon.edu](https://livehelp.uoregon.edu)).

The class will also make use of the Zoom videoconferencing app synchronously with live lectures. Here are a few tips for making productive use of Zoom:

- For help and troubleshooting with Zoom, visit the Zoom Help Center at [https://support.zoom.us/hc/en-us](https://support.zoom.us/hc/en-us).
- Join a session by clicking on the appropriate “Join” button on the session listings accessed by clicking on the “Zoom Meetings” link in the main menu to the left on Canvas. You can join Zoom sessions from either your computer or your smart phone.
- You can also dial into a Zoom meeting from any phone, for an audio-only experience (or to use the microphone on your phone while viewing video on your computer). Go to [https://uoregon.zoom.us/u/abg6PggCbr](https://uoregon.zoom.us/u/abg6PggCbr) and select the phone number closest to your location, then enter the meeting number (shown in the Zoom session listing on Canvas) when prompted.
- Clicking on “Join” for the first session (even before it begins) will take you to a page that will allow you to download the Zoom application (if you have not done so already), where you can explore the options and test your video and audio prior to joining your first live class session.
- Try to be on time when the meeting starts, since it can be distracting to have participants join late. However, I’d rather have you late than not at all, so do join in even if commitments cause you to be delayed.
- Your video should default to being off when you first join a session, but I encourage you to turn it on (by clicking the video icon at the bottom left corner of the screen) – doing so will make the class more interactive and lively, and will help me learn names and faces. If your computer has no camera, this is OK – you will not need one.
- Your microphone should also default to being off when you first join a session, so you’ll need to turn it on if you want to be heard (you can unmute by clicking the microphone icon at the bottom left corner of the screen, or pressing and holding the space bar). After you contribute your thoughts or questions, please mute your audio again.
- Use the text chat option to pose questions or offer insights “on the side” while others are contributing.
- If you cannot attend, I will try to record each Zoom session and post it to Canvas so that you can listen in later.
If you face Internet access challenges: computer labs are open for students at the Eugene campus. Some companies are offering free or discounted access during this challenging time – to learn more, visit Information Services’ web page on going remote. *(https://service.uoregon.edu/TDClient/2030/Portal/KB/ArticleDet?ID=101263)*

**Optional Websites:** You can get more neuroscience-related information at the following web sites:

- [http://brainconnection.brainhq.com/](http://brainconnection.brainhq.com/)
- [http://faculty.washington.edu/chudler/introb.html](http://faculty.washington.edu/chudler/introb.html)
- [http://www.mindhacks.com/](http://www.mindhacks.com/)
- [http://ect.downstate.edu/courseware/neuro_atlas/](http://ect.downstate.edu/courseware/neuro_atlas/)
- [http://learn.genetics.utah.edu/content/addiction/](http://learn.genetics.utah.edu/content/addiction/)
- [http://www.brainfacts.org](http://www.brainfacts.org/)
- [http://www.erowid.org/psychoactives/](http://www.erowid.org/psychoactives/)

If you know of other web sites of interest, please pass them along to the instructor.

**Course Format:** The material in this course will be presented through a combination of live lectures and discussions via Zoom, videos and other “lab” activities via Canvas, and online discussion via Packback.

**Grading:** Grading will be based on the combined scores from the online discussions (10%), "labs" (10%), two midterm exams (25% each), and the final exam (30%). Letter grades will be determined as follows: A (90 - 100% of total possible points), B (80 - 89%), C (70 - 79%), D (60 - 69%), F (0 - 60%). However, the instructor reserves the right to relax (but not stiffen) this criterion, depending on the actual distribution of grades.

I will be mindful of the many impacts the unfolding events related to COVID-19 may be having on you. During this unusual time, if you are not able to do an assignment, please communicate with me and we will strive to create an alternative plan to complete required coursework.

Barring a specific need for adjustment, non-exam assignments will be due in this course Sundays at 11:59 pm (discussion entries and quizzes) – I hope these regular deadlines simplify what you need to keep in mind about the routine of the course.

“Lab” Activities (10% of final grade): Due to the constraints of remote learning this term, we will be unable to do the normal hands-on lab activities that we would typically do in Biopsych. Instead, we will offer a variety of activities that you will do online (watch a video or read a paper, then write a short
reflection) or in your own home (make a model neuron using household or craft supplies you have on hand). Labs will be due by 11:59 pm most Sundays of the term.

**Online Discussion participation (10% of final grade):** To talk about the brain on the internet, we will use the Packback Questions platform. Here, you can ask and answer questions about in-class topics and beyond -- whatever you’re confused or curious about. In order to receive your points for the week, you must post one question and answer two questions from other students. **YOU MUST POST THESE POSTS BY Sunday at 11:59pm.** Once a week, I will choose the most relevant questions and talk about them in class.

These posts can be related to the specifics of the information covered in the course material, but can also be more speculative and go beyond the course material (as long as it is still related to the general topic of that week’s material). Here are some tips for writing effective posts:

- Write clearly and concisely and be aware that humor or sarcasm often doesn’t always translate in an online environment.
- Be supportive and considerate when replying to others’ posts. This means avoiding use of jargon or inappropriate language, and it means disagreeing with respect and providing clear rationale or evidence to support your different view.
- Although you should keep your discussion posts focused on the topic of that assignment, I encourage you to explore related information in sources beyond those required in the course (e.g., other texts, reputable online sites, or primary journal articles) in order to support your points (as applicable).
- Try to use correct spelling and grammar and proofread your submissions. After submitting, use the edit feature to make corrections and resubmit (don’t create a new or duplicate post that corrects your error).
- Make sure that you read other postings **before** contributing your ideas and thoughts, to ensure that you are providing a unique contribution.
- Contribute and interact often!
- **To receive credit, your posts must be substantive.** Merely saying that you agree with the post of another student will not count – you must **contribute** to the discussion!

**Exams (Midterm #1: 25%, Midterm #2: 25%, & Final: 30%):** The midterm and final exams will be composed of multiple choice, matching, fill-in-the-blank and short answer questions. The final exam will contain questions drawn from the entire course, but with a greater focus on material covered since Midterm #2. If unforeseen circumstances during the term prevent you from taking an exam, notify your instructor **immediately.**

**Extra Credit:** Students interested in an extra credit assignment can serve as subjects in the Psychology Human Subjects Pool. The Human Subjects Pool is designed to provide students the opportunity to see first hand how psychology experiments are performed; at the same time, you’ll be providing data that will help a researcher learn how the brain works. If you decide to participate, you
will earn 1 point of extra credit toward your final grade in the course for each hour you serve as a subject, up to a maximum of 3 points (credits beyond the maximum of 3 will not be counted). For example, 3 hours of credit would increase a final grade of 79 up to an 82, giving you a B– for the course instead of a C+.

To participate, follow the guidelines for the Human Subject Pool posted at https://uopsych.sona-systems.com/Default.aspx?ReturnUrl=%2f. Since it is impossible to predict the number of experiments that will be available on any given week, I suggest that you do not wait until the last week of the term before participating. It is uncertain whether any experiments will be available during finals week. Note that it is your responsibility to faithfully follow the rules of the Human Subject Pool (http://psychology.uoregon.edu/research/human-subjects-pool/). If you do not follow these rules, you will be penalized, in the form of a subtraction from your already-completed extra credit. If you have any questions or comments about this extra credit assignment, do not hesitate to contact your instructor or GE.

Students that prefer not to participate in the Psychology Human Subjects Pool can instead collect extra credit by writing a short paper on a topic within Biopsychology. If this is your preference, please contact your instructor or GE to discuss the details of the requirement.

Classroom climate: All classes at the University of Oregon welcome and respect diverse experiences, perspectives, and approaches. What is not welcome are behaviors or contributions that undermine, demean, or marginalize others based on race, ethnicity, gender, sex, age, sexual orientation, religion, ability, or socioeconomic status. We will value differences and communicate disagreements with respect. It is my goal that you feel comfortable and respected – both by me and your peers – in this class. Please let me know if I or other students make you feel uncomfortable, so that appropriate corrections can be made. If you feel that you or someone else has been the victim of bias in this class, you may consider contacting the Bias Response Team (bias.uoregon.edu/index.html).

Creating a Professional Learning Environment: Our learning environment provides an opportunity to practice being professional and rigorous in our contributions. As much as possible, use correct spelling, grammar, and style for academic and professional work. Use discussions and activities as opportunities to practice the kind and quality of work expected for assignments. Moreover, seize the chance to learn from others and develop your interpersonal skills, such as mindful listening and awareness of one’s own tendencies (e.g., Do I contribute too much? Too little?).

Also use good “net etiquette”: identify yourself with your real name, write or speak in the first person, and use a subject line that clearly relates to your contribution. Good netiquette also means using humor or sarcasm carefully, remembering that non-verbal cues (such as facial expressions) are not always possible or clear in a remote context. In addition, your language should be free of profanity, appropriate for an academic context, and exhibit interest in and courtesy for others’
contributions. Certain breaches of netiquette can be considered disruptive behavior.

Our goal is to learn together by learning from one another. As we move forward learning during this challenging time, it is important that we work together and build on our strengths. Not everyone is savvy in remote learning, including your instructor, and this means we need to be patient with each other, identify ways we can assist others, and be open-minded to receiving help and advice from others. No one should hesitate to contact me to ask for assistance or offer suggestions that might help us learn better.

**Students Needing Accommodations for Accessibility**: The University of Oregon is working to create inclusive learning environments. Please notify me if there are aspects of the instruction or design of this course that result in disability-related barriers to your participation. You are also encouraged to contact the Accessible Education Center ([https://aec.uoregon.edu](https://aec.uoregon.edu)) at 541-346-1155 or uoaec@uoregon.edu ([mailto:uoaec@uoregon.edu](mailto:uoaec@uoregon.edu)).

**Students for whom English is a Second Language**: If you are a non-native English speaker and think you may have trouble in this course due to language difficulties, please see me as soon as possible to make any necessary special arrangements.

**Academic Integrity for Remote Learning**: All work submitted in this course must be your own. Violations (cheating on exams, or turning in another student’s work on an assignment, etc.) will be taken very seriously, and are noted on student disciplinary records. If you are caught cheating, you will receive a 0 on the assignment; you may also receive a failing grade for the course. If you are in doubt regarding any aspect of these issues as they pertain to this course, please consult with the instructor before you complete any relevant requirements of the course. For more information, see the UO web site regarding student conduct, [http://dos.uoregon.edu/conduct](http://dos.uoregon.edu/conduct).

In our remote class, I will ask you to certify that your exams and assignments are your own work. Exams will be timed (with adjustments as prescribed by the Accessible Education Center) and Canvas will automatically vary the questions students receive. If a technological glitch disrupts your exam, don’t panic. Take a photo to document the error message you’re receiving and then email or call me.

**Biopsychology Class Schedule (PSY 304) Winter 2021**

**Course Outline**: This is only a working draft of the course outline; it will be revised as the quarter progresses. Dates on which particular topics are to be presented in lecture are subject to change, but we will not change the dates of quizzes or exams unless absolutely necessary. The official updated version of the outline will reside on the Canvas web site. Updated print versions can also be obtained from the instructors or teaching assistant during normal office hours.
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<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Topic</th>
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<tbody>
<tr>
<td>1</td>
<td>Sep 28</td>
<td>An Intro to Brain &amp; Behavior</td>
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<td></td>
<td>Sep 30</td>
<td>Cells &amp; Structures (part 1)</td>
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<tr>
<td>2</td>
<td>Oct 5</td>
<td>Cells &amp; Structures (part 2)</td>
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<td></td>
<td>Oct 7</td>
<td><strong>Class cancelled</strong></td>
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<tr>
<td>3</td>
<td>Oct 12</td>
<td>Neurophysiology</td>
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<td></td>
<td>Oct 14</td>
<td>The Chemistry of Behavior (part 1)</td>
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<tr>
<td>4</td>
<td>Oct 19</td>
<td>The Chemistry of Behavior (part 2)</td>
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<td></td>
<td>Oct 21</td>
<td>Neuroscience tools</td>
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<tr>
<td>5</td>
<td>Oct 26</td>
<td><strong>Midterm Exam #1</strong> Vision (part 1)</td>
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<td></td>
<td>Oct 28</td>
<td>Vision (part 1)</td>
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<td>6</td>
<td>Nov 2</td>
<td>Vision (part 2)</td>
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<td>Nov 4</td>
<td>Olfaction</td>
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<tr>
<td>7</td>
<td>Nov 9</td>
<td>Hormones and Sex</td>
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<tr>
<td></td>
<td>Nov 11</td>
<td><strong>VETERANS DAY; no class</strong></td>
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8
Nov 16
Midterm Exam #2

9
Nov 18
Emotions

Nov 23
Learning and Memory (part 1)

Nov 25
THANKSGIVING; no class

10
Nov 30
Learning and Memory (part 2)

Dec 2
Psychiatric Conditions

Thursday, December 9
8 am
Final Exam – Comprehensive, but focused mainly on material after midterm 2.

Additional COVID Info and Resources

OUR WELL-BEING: HEALTHY AND ENGAGED

The following resources are available to you:

- University Health Services  (https://health.uoregon.edu/) or call (541) 346-2770
- University Counseling Center  (https://counseling.uoregon.edu/) or call (541) 346-3277 or (541) 346-3227 (after hrs.)
- MAP Covid-19 Testing  (https://coronavirus.uoregon.edu/testing#students)
- Corona Corps  (https://coronavirus.uoregon.edu/corona-corps) or call (541) 346-2292
- Academic Advising  (https://advising.uoregon.edu/) or call (541) 346-3211
- Dean of Students  (https://dos.uoregon.edu/) or call (541)-346-3216
Duck Nest is here for you:

Life at college can be complicated. Students often feel overwhelmed or stressed, experience anxiety or depression, struggle with relationships, or just need help navigating challenges in their life. If you’re facing such challenges, you don’t need to handle them on your own—there’s help and support on campus. As your instructor if I believe you may need additional support, I will express my concerns, the reasons for them, and refer you to resources that might be helpful. It is not my intention to know the details of what might be bothering you, but simply to let you know I care and that help is available. Getting help is a courageous thing to do—for yourself and those you care about. University Health Services help students cope with difficult emotions and life stressors. If you need general resources on coping with stress or want to talk with another student who has been in the same place as you, visit the Duck Nest (located in the EMU on the ground floor) and get help from one of the specially trained Peer Wellness Advocates. Find out more at [health.uoregon.edu/ducknest](https://health.uoregon.edu/ducknest).

University Counseling Services (UCS) is here for you:

University Counseling Services (UCS) has a team of dedicated staff members to support you with your concerns, many of whom can provide identity-based support. All clinical services are free and confidential. Find out more at [counseling.uoregon.edu](https://counseling.uoregon.edu) or by calling 541-346-3227 (anytime UCS is closed, the After-Hours Support and Crisis Line is available by calling this same number).

Remote, tech, advising, and more resources to help you:

[https://remote.uoregon.edu/](https://remote.uoregon.edu/)

To prevent or reduce the spread of COVID-19 in classrooms and on campus, all students and employees must:

- Comply with [vaccination policy](https://coronavirus.uoregon.edu/vaccine)
- Wear face coverings [here](https://coronavirus.uoregon.edu/prevention#face-coverings) in all indoor spaces on UO campus
• Complete weekly testing (https://coronavirus.uoregon.edu/testing) if not fully vaccinated or exempted
• Wash hands (https://coronavirus.uoregon.edu/prevention#healthy-hand-washing) frequently and practice social distancing when possible
• Complete daily self-checks (https://coronavirus.uoregon.edu/prevention#health-checks)
• Stay home/do not come to campus if feeling symptomatic (https://coronavirus.uoregon.edu/prevention#if-sick-stay-home)
• Complete the UO COVID-19 case and contact reporting form (https://oregon.qualtrics.com/jfe/form/SV_6lfKVJkE0jAGPvn) if you test positive or have been in close contact with a confirmed or presumptive case

OUR CLASSROOM BEHAVIOR: HEALTHY AND ENGAGED


A few highlights:
* Eating and drinking in classrooms is not allowed.
* Wear face coverings in all indoor spaces.
* Make sure your mask fits you well.
* Get tested regularly.
* Get to know your neighbors in class, and let them know if you test positive.
* Watch for signs and symptoms with the daily symptom self-check.
* Stay home if you’re sick.
* Students should not attend class if they are ill, have symptoms, are quarantining, or are not compliant with the university’s vaccination or testing requirement