

Cognitive Neuroscience (Psych 3604) • Spring 2021

Tuesday and Thursday 4:00–5:20 pm • Wrighton Hall 300 and online

Instructor: Dr. Jonathan Peelle
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Office hours (online): Wednesdays 2pm-3pm and appointment

Assistant to the Instructor 1: Jenny Crawford
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* Please don't use email for questions on course content. Questions regarding course material should be posted to Slack. That way everybody benefits!

Course-related websites: Quizzes and modules/organization: <http://mycanvas.wustl.edu>
Readings (research papers): <http://perusall.com>
Discussions and announcements: <http://slack.com>

Texts: none

Overall course structure and guiding principles in times of COVID

- The current plan is to have a hybrid course, with in-person lectures at the assigned course time that are streamed live, and also available as recordings after class. In-person instruction depends on the current health situation and is subject to change.
- No in-person attendance is ever required, and **the course is designed so you can get full credit even if all of your participation is asynchronous and remote**. The in-person instruction is offered in case it's useful, but I feel strongly that all students (remote, in-person, synchronous, asynchronous) have the same learning experience.

Course description and goals

This introductory course concerns the biological basis of the mind and how mechanisms in the brain shape human thought and behavior. For example, how does your brain enable you to vividly remember (or forget) your first date, recognize a face, or take notes during class? By the end of the course you will have a working vocabulary of the terms, concepts, and theories of cognitive neuroscience. You will have increased appreciation for how our brains relate to everyday experience, and the skills to begin to evaluate primary research as a foundation for further study.

In order to learn about cognitive neuroscience, you will have to intellectually engage with the material. This involves learning basic vocabulary and principles, and also using critical thinking skills to evaluate what you are reading and hearing. To be engaged you need to spend time reading and thinking outside of class, be physically and mentally present in class, and interact with other class members. I have structured the course to encourage these behaviors, and expect you to do your part by preparing and engaging.

Evaluation and grading

- Exams (60%)
- Quizzes (20%)
- Class participation (20%)

Exams

There are four exams (including the final). Exams will be a combination of multiple choice, short answer questions (including diagram labeling), and long answer questions. I will provide concept lists and long answer lists ahead of time: exam questions will be based on terms from these lists, so there will be no surprises. However, the material might be assessed in a number of ways: you will need to have a thorough understanding of each concept, and not just a short, memorized definition. My goal is for you to engage with the main ideas in the course, which requires understanding some of the details, too.

The final exam is not strictly cumulative: it will focus on material from the final 1/4 of the course. However, it may have neuroanatomy questions (one of the first things we cover), and questions that relate to big-picture and integrative ideas that come up throughout the semester, so you will need to rely on some knowledge and thinking from the entire semester.

There are two grading options for exams:

Traditional grading	Exam drop grading
• Take all 4 exams (including the final) • If you need to miss an exam for a “good” reason, contact me prior to the exam to request a make up. It is then your responsibility to schedule a time for the make up exam with me or a TA. • If you have an unexcused missed exam (because you did not request to miss ahead of time, or your request is not approved) you will get a 0 on the exam.	• I drop your lowest exam grade, no questions asked • If you miss an exam for any reason (being sick, grad school interviews, forgetting about the class) you get a 0. • I do not offer any make up exams, even if you have a very good reason*. • If you are happy with your first three exam grades you do not need to take the final (not taking it gives you a 0 on the final, which will be dropped). * I am not a monster; if you have a serious illness or something come talk to me. But generally the dropped lowest exam is meant to cover all of the circumstances you can think of why someone would miss an exam, and if you are in a situation where you are required to miss more than one exam we probably need to have a talk, anyway. In several years of my offering this option no one has gotten more than 1 exam dropped.

What is **not** an option is a combination, where I drop your lowest exam and then also offer you makeups if you have to miss an exam. (This class exists in the real world where you actually need to take exams.) For example, you may be planning on doing well on the first three exams and not taking the final. But then, you are texting while you are walking 🚶 and get gently run over by the #1 Bus. You’re OK, but miss an exam. Of course getting hit by a bus is a totally reasonable excuse, and under “traditional grading” I would offer you a makeup. But then you’d still need to study for the exam and might do poorly. With “exam drop grading”, I drop your lowest grade, and that would cover being hit by a bus. (Please don’t get hit by a bus.)

By default, I will use the “exam drop” grading option, because I think it is better. However, if you would like to be graded using the “traditional” option, let me know in writing (via email) any time before the first exam. **After Exam 1 there are no changes to the grading option allowed.**

Quizzes

Research shows that (a) having many short study sessions (distributed learning) leads to better memory than few long study sessions (massed learning), and (b) that testing material actually enhances long-term retention. To help you learn and remember the course material, there will be 10–15 short quizzes throughout the semester. They may cover basic questions from an

assigned reading or slightly more detailed questions that draw on information from both the reading and lecture. The goal is to encourage you to understand each topic as we go through a combination of reading, lectures, and extra help (if necessary). The quizzes will also give you an idea of the types of questions to expect on the exams. You will have a week to complete each quiz, and multiple attempts are allowed. **No late submissions are allowed for quizzes**; after the due date, you will get a 0 (but I will drop the lowest $\frac{1}{3}$ of your quiz grades).

Class participation

The advantage of a class is that it provides a space to interact with each other and with me, to talk through ideas together (even if we are asynchronous). Your participation is what makes this experience effective (and hopefully enjoyable). Class participation grades are based on:

- Online participation (7%)
- Perusall contributions (10%)
- Research participation (3%)

Online comments for credit are made in the #discussions-for-grading Slack channel.

Although I value your contributions to other Slack channels (please use these liberally!) only ones in #discussion-for-grading count for your grade. Online participation includes asking questions that encourage others to think more deeply about the material, answering questions posed by other students, and responding to questions posted by instructors. **Five meaningful comments** are considered sufficient for full online participation credit. (“Meaningful” is not simply writing “yes, I agree” but a thoughtful answer, probably including links to a website or pages from the readings, as described on the first day of class.) For credit, contributions must be posted to Slack—some questions will be locked after time passes, after which it is not possible to contribute. **Online contributions will be accepted until the beginning of our final class** as indicated by the system time when you post. Comments are not eligible for regrading (it’s not practical in a large class). To make sure you get credit for your posts, complete them early and make sure they are clearly credit-worthy. When in doubt, make another post that you are sure is credit-worthy.

Perusall is a platform for commenting on documents which we will use for research articles. Perusall automatically scores your contributions, including the number and quality of your comments and interactions with other students. For the most part if you put some effort in you will get full credit. I will drop the lowest $\frac{1}{3}$ of your Perusall scores to give you some flexibility in your participation (and allow for some glitches in the scoring). There is no re-scoring for Perusall: the website has the final say. Perusall comments must be made by each assignment deadline—**late contributions do not count**. You should be able to access Perusall by clicking each assignment under “assignments”. Please let me know if you have any questions.

Research participation is tracked through Sona (<http://wuppsych.sona-systems.com>). For instructions see <http://eyes.wustl.edu/pool/>. Importantly, you need to make sure to associate

your Sona account with this course (Cognitive Neuroscience Psych 3604), and enter your student ID, to make sure credits synchronize correctly.

You will need 6 hours of participation for full credit. There are three ways to earn research credit:

- Participate in a research study listed on Sona. (You can participate in other research studies, for example, for pay or your own enjoyment, but only studies listed on Sona provide research participation credit. By the end of the semester there are frequently no open slots, so participate early if this is the route you would like to go. Many research studies are available online, so no in-person participation is necessary.
- Sign up for, and attend, a talk listed on Sona. These are typically in the Department of Psychological and Brain Sciences and only a limited number of sign-up slots are available. If you attend a talk, but did not sign up through Sona, you will not receive credit. (I'm not sure whether this will be an option this semester—keep your eye on Sona.)
- Read and comment on a research article. Each research talk or article is worth 1 hour of research participation, so I expect you to spend about an hour (not longer, but not shorter) responding to each one. If you choose the research article option, you will need to complete a form (linked from Canvas) for credit.

Research participation is accepted until the official Sona deadline (no exceptions).

(Usually this is midnight on the last day of classes.)

[Note that research participation “double counts”: if you have two classes that each require 6 research participation credits, you only need to complete 6 credits (not 12).]

Canvas time zone issues

As far as I know, Canvas does NOT automatically update to the current location's time zone, unlike our computers/phones. You will need to manually update your Canvas time zone to your CURRENT time zone, because it is very likely that it is set to Central Time, which may not be correct for you. However, once you reset this time zone, everything will automatically display correctly and adjust as needed. Follow these instructions:

<https://community.canvaslms.com/docs/DOC-10622-4212717410>

Grading

Letter grades will be assigned as shown in the table below based on rounding to the nearest integer (i.e., a 92.499 rounds down to a 92 and thus an A-; a 92.500 or 92.501 would round up to a 93).

A+	A	A-	B+	B	B-	C+	C	C-	D+	D	D-
97	93	90	87	83	80	77	73	70	67	63	60

If you are taking the course Pass/Fail, you will pass if you earn at least a C- (70%).

Incomplete

A grade of [Incomplete](#) indicates that the work of a student has been generally acceptable (including meeting deadlines) but that extenuating circumstances led to certain requirements not having been met, are reserved for extremely rare circumstances, typically in consultation with your academic advisors. In cases where the majority of work has not been completed a [retake](#) is typically a more appropriate option.

Course schedule

All assignments for a class are due at the start of class (4:00 pm Central). Please do not leave submissions to the last minute so that technical problems do not get in the way of an on-time submission.

The topics below are tentative but give you a sense of the progression. The topics and deadlines will be kept up-to-date on Canvas so please check there. Canvas deadlines are always the official ones. Class topics may change depending on how fast we progress, but Exam deadlines will not change.

Jan 26	Introduction
Jan 28	Neuroanatomy
Feb 2	Neurons
Feb 4	Neurons
Feb 9	Methods
Feb 11	[review session]
Feb 16	Hemispheric specialization

EXAM 1 (due Feb 18th, you'll have a week to work on it)

Feb 18	No class: Exam 1 due by midnight
Feb 23	Vision
Feb 25	Vision
Mar 2	NO CLASS - Wellness Day
Mar 4	Hearing
Mar 9	Attention and perception
Mar 11	[review session]
Mar 16	Mental imagery

EXAM 2 (due Mar 18, you'll have a week to work on it)

Mar 18	No class: Exam 2 due by midnight
Mar 23	Speech and language
Mar 25	NO CLASS - Wellness day
Mar 30	Speech and language (continued)
Apr 1	Executive function (Crawford)
Apr 6	Decision making (Crawford)
Apr 8	Memory
Apr 13	[review session]

EXAM 3 (due Apr 20, you'll have a week to work on it)

Apr 15	Semantic memory
Apr 20	No class: Exam 3 due by midnight
Apr 22	Consciousness
Apr 27	Music
Apr 29	Psychopathology
May 4	Q&A

May 13 Final exam due by 6 pm (no late submissions accepted)

Course policies

Canvas and Slack

We will use Canvas (<http://canvas.wustl.edu>) for overall course organization (and quizzes/exams), and Slack for announcements and discussions about course content. You are responsible for all content on both Canvas and Slack, so check them regularly and/or set up notifications so you receive emails about posts. If you do not have access to either Canvas or the Slack workspace please let me or a TA know immediately—**it is your responsibility to make sure you have access**. Any assignments turned in online are graded based on the time in Canvas, and you are responsible for making sure assignments get submitted properly. Please leave yourself enough time before the deadline to check that your assignment was submitted.

Reading

The readings are all required and I expect you to do them. Many of the most important topics will be covered in both readings and in class—this is to give you two chances to absorb it, and to ask questions about what you have read. Other material will be covered only in the readings, or only in class. Even if sections of the papers aren't tested directly, the readings will give you a

context and vocabulary that will help you understand the topics (and the things that appear on exams).

Classroom etiquette

Please avoid interfering with other students' ability to participate in class. Disruptive behavior includes: cell phone use, talking, eating (drinks are fine), arriving late, and leaving early. Infractions may result in lowered participation grades or dismissal from class. Also, research suggests that chronic media multitaskers have lower working memory performance and less attentional focus—so limiting your electronic multitasking is to your benefit, as well as your peers'.

Inclusive environment

In this class we treat everyone with respect and consideration in what they say and the manner in which they say it in order to foster a productive and inclusive learning environment. Please come see me if you ever feel this is not the case.

Late submissions

No late submissions are accepted for Perusall or for quizzes, which close at the due date and time (Saint Louis time). Please don't be caught off guard by deadlines. Quizzes and Perusall assignments relate to the topics we are covering in class, and so completing these at the right time is an integral part of the assignment. I will do my best to remind you of deadlines, but it is your responsibility to check on these.

Exam 1, Exam 2, and Exam 3 may be turned in late but will lose 20% regardless of how late (1 minute or 1 week). Exam 1, Exam 2, and Exam 3 must be turned in by the Exam 4 deadline. No late submissions will be accepted. Exam 4 may not be turned in late, for any reason, as we will need to calculate final grades: any non-submissions by the deadline receive a zero.

Academic integrity

We will follow the university policy on academic integrity (<http://wustl.edu/policies/undergraduate-academic-integrity.html>). By enrolling in this course you are making a personal commitment to me to honestly represent your own work, which I expect you to honor without exception. Violations of academic integrity (including plagiarism or misrepresenting your work) will result in a 0 for the assignment in question and referral to the academic integrity committee. ~~Use of any electronic device or notes during a quiz or exam is strictly prohibited and may result in a grade of 0 regardless of what you were using it for.~~ Violations of academic integrity may also result in a penalty applied to your final course grade.

If you have questions about what counts as plagiarism, please talk to me. One example that comes up from time to time (not the only one!): using text from another source (for example, cutting and pasting a sentence from a website or research article into your discussion post, comment, or reflection) without giving credit always counts as plagiarism.

Missed classes and exams

Attendance *per se* does not affect your grade. However, you may also miss important announcements which may affect your grade and/or happiness. I expect you to view recordings of all classes if you don't attend synchronously.

There are no makeups for missed quizzes, for any reason, but I will drop the lowest 1/3 of your quiz grades (to account for illnesses, oversleeping, travel, quizzes that everyone hates, adding the class late, etc.).

If you need to miss one of the first three exams for a religious observance or university event (including athletics), **and you inform me about it via email the first week of class**, I will arrange a makeup exam, regardless of other exam dropping options.

If you choose the "exam drop" grading option, I will drop the lowest of your four exam grades, which is intended to cover extenuating circumstances (for example, being sick, scheduled surgery, grad school interviews, travel for family events, etc.) and give you some flexibility in your schedule.

The last exam will be due during our scheduled time during finals week (like the other exams, you will have a week to work on this untimed exam). **No alternate times or makeups will be offered for any reason, including if you have another class with a final scheduled at the same time.** Please check your course schedule now, and consider changing your class schedule if you have conflicts or feel your final schedule is not manageable. Taking the final is not required (for example, if you are happy to keep your first three exam grades). But, I strongly suggest you plan on taking it and arrange your schedule accordingly.

If you need to be away for an extended period due to illness, family emergency, or other reason, please let me know as soon as possible. Please speak with me in person (i.e., during office hours), and also email me so that we have a record.

Re-grading

You have the right to request regrading of anything if you feel a mistake has been made. During regrading, the entire work will be regraded, which may result in either a higher or a lower total grade. If you feel an error has been made in grading, send me a detailed email explaining the error within 1 week of when the work was turned back to you. Your email should explain in detail why your answer should be given credit with specific references to the lecture slides and readings to support your case. After one week, no regrading requests will be considered. Note that regrading is intended to correct grading **errors**, not to negotiate a higher grade. Grades on long answer questions seldom improve. Regrades are final (I am always happy to discuss your exams with you!).

Old exams

I may share exams from prior semesters. These can be helpful because it gives you a sense of the types of questions that might be asked, and there are questions that repeat across semester. There are also some errors on old exams, and the exact terms on the concept list have probably changed. So use the old exams with care! I do not provide an answer key but am happy to discuss questions with you.

Adjustments to grades

Some of you will be unhappy with a grade. For example, you may have a final average of 89.4999 and *really wish* it were an 89.5. Unfortunately I am not able to change the laws of mathematics, no matter how much I like you. Instead, I work to build in grace throughout the semester (by dropping lowest grades, giving extra credit, etc.)—this way everyone gets the same deal. I do not adjust grades.

ADA accommodations

Students who are seeking support for a disability or a suspected disability should contact Disability Resources at 314-935-4153. If needed, please obtain a Verification of Individual Student Accommodation (VISA) from the Disability Resources center at Cornerstone and email it to me by the second week of class. See: <http://disability.wustl.edu>.

Quizzes and Exams are untimed and you will generally have a week to work on them.

University policies and guidance

Accommodations based on sexual assault

Official wording I've been asked to include in the syllabus: The University is committed to offering reasonable academic accommodations to students who are victims of sexual assault. Students are eligible for accommodation regardless of whether they seek criminal or disciplinary action. Depending on the specific nature of the allegation, such measures may include but are not limited to: implementation of a no-contact order, course/classroom assignment changes, and other academic support services and accommodations. If you need to request such accommodations, please direct your request to Kim Webb, Director of the Relationship and Sexual Violence Prevention Center, or Jen Durham Austin, Support Services Counselor. Both Kim Webb and Jen Durham Austin are confidential resources; however, requests for accommodations will be shared with the appropriate University administration and faculty. The University will maintain as confidential any accommodations or protective measures provided to an individual student so long as it does not impair the ability to provide such measures.

If a student comes to me to discuss or disclose an instance of sexual assault, sex discrimination, sexual harassment, dating violence, domestic violence or stalking, or if I otherwise observe or become aware of such an allegation, **as a faculty member of**

Washington University, I am required to immediately report it to my Department Chair or Dean or directly to the University's Title IX Director.

You can also report incidents or complaints to the Office of Student Conduct and Community Standards or by contacting WUPD at (314) 935-5555 or your local law enforcement agency. See also <https://titleix.wustl.edu>. You may want to spend some time online searching for Title IX cases to get an understanding of how these cases frequently proceed.

You can also speak **confidentially** and learn more about available resources at the Relationship and Sexual Violence Prevention Center by calling (314) 935-3445 for an appointment or visiting the 4th floor of Seigle Hall.

Bias Reporting

The university has a process through which community members who have experienced or witnessed incidents of bias, prejudice or discrimination against a student can report their experiences to the University's Bias Report and Support System (BRSS) team. See: brss.wustl.edu.

Mental Health

Mental Health Services' staff works with students to resolve personal and interpersonal difficulties, many of which can affect the academic experience. These include conflicts with or worry about friends or family, concerns about eating or drinking patterns, and feelings of anxiety or depression. If you think you might be struggling in any of these areas please contact them.

Center for Diversity and Inclusion

The Center of Diversity and Inclusion (CDI) supports and advocates for undergraduate, graduate, and professional school students from underrepresented and/or marginalized populations, creates collaborative partnerships with campus and community partners, and promotes dialogue and social change. One of the CDI's strategic priorities is to cultivate and foster a supportive campus climate for students of all backgrounds, cultures and identities. See: diversityinclusion.wustl.edu.

Improving your grade

If your grade is not as good as you would like it to be, I suggest starting with the following:

- Take a look at how much time you are devoting to the course. You need to devote enough time to master the material. People will differ in how much time they need to do well. You may need to consider letting some things in your schedule go if your grades are not what you would like. (This is certainly not the only reason for not doing as well as you like, but it's a good one to keep in mind as you think about your situation.)
- Be intentional about your study habits. One reason I provide the concept and long answer lists ahead of time is to give you structure in studying. The first thing I suggest is

to have a running list of concept list items and fill them in as you do the reading and in lecture. For any items you aren't sure of, post to Canvas to see what others think and/or come to office hours.

- Come talk to me or a TA regularly (not just right before the exam, and not only at the end of the semester). We can help answer specific questions, but also provide general suggestions for studying.

Frequently asked questions and frequently given answers

I know the syllabus says the final exam time is set and there are “no exceptions”, but I think I have a really good reason. Can that be an exception?

No.

I really want a higher grade than I earned. Can you give me more points?

No. I'm sorry you're disappointed in your grade. I would be happy to meet with you to talk about class, but as a policy I don't adjust people's grades unless there was an error in grading. Instead I work hard to build in some grace along the way — dropping your lowest exam grade, dropping lowest quiz grades, extra credit — to give everyone the same opportunities and hopefully some wiggle room for challenging circumstances.

But I only need .0001 more points, are you sure I can't have it?

Yes.

I did not complete most of the assignments/quizzes/readings during the semester. Can I just take an incomplete and finish this work later?

No.