

Instructor/TA Info

Instructor Information

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Or By Appointment

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Course Information

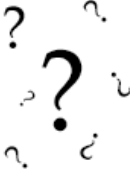
Description

Behavioral neuroscience is the study of the relationship between brain and behavior. It is also sometimes called physiological psychology or biopsychology. Everything we feel, perceive, think, or do originates in the brain. In a very real sense, you are your brain. Behavioral neuroscience comprises several different disciplines, all of which are concerned with answering one fundamental question: How does the brain produce thoughts, feelings, emotions, and behavior? In other words, how do mental events arise from the physical interactions within the brain? In this course, we'll first discuss the basic biology of the brain (which is the hard part of this class) and then move on to the research methods of biopsychology. We'll then talk about different cognitive functions and how they're supported by the brain.

Prerequisites

PSYCH 307, PSYCH 309, PSYCH 310

Materials

Item		Price (new)	Price (used)
	<u>BIOPSYCHOLOGY 9E - Required</u>	183.00	137.25
	by PINEL, J		

Learning Outcomes

1. The brain, experience, and behavior

Students will develop their understanding of how the brain influences one's experience of the world and one's behavior in it.

Measurement: In-class quizzes and/or exams on assigned textbook reading, lectures, and class discussions and written reports and/or in-class presentations of self-selected articles from the scientific literature.

2. Scientific methods and behavioral neurobiology

Students will identify scientific methods, especially those of cognitive neuroscience, that are valuable in behavioral neurobiology.

Measurement: In-class quizzes and/or exams on assigned textbook reading, lectures, and class discussions and written reports and/or in-class presentations of self-selected articles from the scientific literature.

3. Diseases, trauma, drug usage, hormones, and genes

Students will extend concepts and research findings to diseases, trauma, drug usage, hormones, and genes.

Measurement: In-class quizzes and/or exams on assigned textbook reading, lectures, and class discussions and written reports and/or in-class presentations of self-selected articles from the scientific literature.

Grading Scale

Grades	Percent
A	93%
A-	90%
B+	87%
B	83%
B-	80%
C+	77%
C	73%
C-	70%
D+	67%
D	63%
D-	60%
E	0%

Grading Policy

Your grade will be calculated on the number of points you earn from examinations, quizzes, and other assignments divided by the total number of points possible. A general rule of thumb for undergraduate college courses is "2-3 hours of study out of class for every hour in class". A 'C' is an acceptable grade and a 'B' a good grade, while an 'A' represents an outstanding level of accomplishment even in comparison with peers who are often excellent students. We will award grades of C-, D, UW, or E only after individual consideration concerning whether the student's performance in the course merits such a grade.

As a general rule: an adequate answer will receive an adequate grade. What this means is that if you merely answer the question on an essay exam, you may not receive full points. Full points are reserved for exceptional answers where you demonstrate that you have a full understanding of the concept being tested.

Writing good exam questions is one of the hardest parts of my job. Inevitably a bad or poorly worded question slips through. I will entertain **written** challenges to quiz and exam questions up to one week following the return of the quiz or exam to you. Include the question you're challenging, the answer I marked as correct, the answer you gave, and your reasoning for choosing that question. Include relevant passages from the textbook or lecture notes to support your reasoning.

At the end of the semester, there will inevitably be one or two students who are within a percentage point or two of a grade cutoff. You may be tempted to ask if I can "bump you up" those couple of points to the next grade. The answer will be no. Dropping the cutoff by a couple of points for you will mean that now another person will be within a couple of points of the new cutoff. If I lowered the cutoff for you why not lower it for the next student as well, and so on.

Participation Policy

I expect that you will read the material, as listed in the course schedule, *prior to class*. This is expected so you will better understand the topic and in order for us to have more productive discussions in class. This will also help you better understand and retain the material. I will post the lecture slides on Learning Suite at least one day before each class to give you time to download the slides and bring them to class.

The topics we will discuss in class are great for fostering lots of in-class discussion. If you have questions, please ask them. Try to keep your questions on topic, though. It's very easy to get off topic talking about things that are interesting and related to the current topic of discussion. I love having lots of discussion in class, but occasionally, I'll re-direct the conversation before we've exhausted a given topic of discussion. If this happens and you still want to discuss the topic, please feel free to talk to me before/after class or during office hours.

Attendance Policy

Attendance is required as we will be dealing with issues and examples not necessarily covered in the text. I will learn your names and expect you will answer questions and offer comments on the material. To help you encode the material covered in class and to help motivate you to do the reading before class, we will have in-class quizzes (10 multiple-choice questions and a short answer) the last 15 minutes of each class. If you miss class, please (a) speak to the TA or me and obtain notes from at least one trusted classmate, (b) check Learning Suite for any newly posted material, and (c) attend office hours for additional clarification when needed. You may drop 2 quizzes, so if you miss an in-class quiz, we'll count that as one of the ones that is dropped. If you know in advance that you need to miss quizzes, please let me know as soon as possible (see Make Up Policy below).

Late Work Policy

Due dates/times for all assignments are listed on Learning Suite. Late assignments will be graded for reduced points according to the table below. As you can see, assignments turned in a couple of hours late will be graded for nearly full points. After a day or so, though, the max points possible drops off dramatically. Assignments more than 3 days late will be graded for half points. If there are extenuating circumstances, please let us know and we will consider exceptions to this policy.

Hrs Late	Max Score
1	0.99
2	0.98
3	0.98
4	0.98
5	0.98
6	0.98
7	0.97
8	0.97
9	0.97
10	0.97
11	0.96
12	0.96
13	0.95
14	0.95
15	0.95
16	0.94
17	0.93
18	0.93
19	0.92
20	0.92
21	0.91
22	0.90
23	0.89

24	0.88
25	0.88
26	0.87
27	0.86
28	0.85
29	0.83
30	0.82
31	0.81
32	0.80
33	0.79
34	0.77
35	0.76
36	0.75
37	0.74
38	0.73
39	0.71
40	0.70
41	0.69
42	0.68
43	0.67
44	0.66
45	0.64
46	0.63
47	0.62
48	0.62
49	0.61
50	0.60
51	0.59
52	0.58
53	0.58
54	0.57
55	0.57
56	0.56
57	0.55
58	0.55

59	0.55
60	0.54
61	0.54
62	0.53
63	0.53
64	0.53
65	0.53
66	0.52
67	0.52
68	0.52
69	0.52
70	0.52
71	0.51
72	0.51
>72	0.50

Electronics Use Policy

Part of the [BYU Honor Code \(http://saas.byu.edu/catalog/2011-2012ucat/GeneralInfo/HonorCode.php\)](http://saas.byu.edu/catalog/2011-2012ucat/GeneralInfo/HonorCode.php) is to respect others. One simple way to show respect to your classmates and instructor is to refrain from using electronic devices in inappropriate and distracting ways in class. Surfing the Internet in class is disruptive for students sitting around you and has been shown to negatively impact not only your grade but also your neighbors'. Texting in class is disruptive for your instructor, who takes it as a sign that you have mentally checked out of class and considers it the height of rudeness. **Cell phone use is not permitted** in class. I welcome the use of laptops/tablets in class to help you take notes or augment our discussion (e.g., looking up relevant information on Wikipedia). I will however ban the use of electronics in class if they are used inappropriately.

Study Guides

Quizzes and exams will be based on the assigned readings (both from the text and supplemental readings posted to Learning Suite) and in-class discussion. I provide copies of my lecture slides to supplement your notes and the reading assignments are thoughtfully considered. Consequently, I will not provide an additional study guide on top of these resources. You are, of course, free to create your own study guide or you may be able to prevail upon your TA to create a study guide for you (I leave that up to him/her).

Readings

The readings will be assigned from the text and may be supplemented by pdf's and links posted to Learning Suite. All assigned readings should be completed before the class for which they are assigned. I will prepare my lectures with the assumption that everyone has already read the relevant material. This will allow you to come prepared to ask questions and answer my questions in class.

Make-up Policy

Part of the reason for allowing you to drop two quiz scores is to make allowance for missed quizzes. As such, if you miss a quiz it will count as one that you drop. Since missing more than 2 will negatively impact your grade, you probably don't want to do that.

As you will see, the dates of the exams are listed on the schedule. If, you miss, forget, or otherwise fail to take an exam – do not email me or the TA asking, "What can I do for you?". My answer is I am sorry but you cannot take the exam.

Some excuses that are often provided – but are not acceptable.

- I was planning on taking the test on such-and-such a day – but became sick/ill thus I did not take the exam.

- I was traveling or otherwise out of town and missed the exam.
- Weddings, family reunions, etc. are not excuses for missing quizzes or exams.
- As per University policy, early flights home during finals week are not acceptable excuses for taking the exam at a different time.

IF YOU KNOW OF A CONFLICT REGARDING AN EXAM LET ME KNOW BEFORE THE EXAM BEGINS – THEN ARRANGEMENTS CAN BE MADE.

Assignments

Assignment Descriptions

Quiz 1

Sep
13

Due: Wednesday, Sep 13 at 11:59 pm

In-class quizzes consist of 10 multiple choice questions and one short answer question.

Quiz 2

Sep
20

Due: Wednesday, Sep 20 at 12:00 am

In-class quizzes consist of 10 multiple choice questions and one short answer question.

Research Paper-Critical Review

Sep
21

Due: Thursday, Sep 21 at 11:59 am

The purpose of this assignment is to get you started reading and evaluating primary research papers in cognitive neuroscience. This is going to be a key skill in completing the final research report project. You will write a brief (600-900 words) paper summarizing a research article and relating it to the information presented in the textbook and lecture. Papers will thus be graded on four content areas, on general mechanics (spelling, grammar) and style, and on your analysis of the research (see the rubric under the 'Content' tab). Your analysis could include things that you did not like about the paper, things that you thought were particularly good, or future directions that this research could go, for example. Papers should be written at a level that a general scientific audience would understand. The target article and grading rubric will be provided under the 'Content' tab in Learning Suite.

Quiz 3

Sep
27

Due: Wednesday, Sep 27 at 11:59 pm

In-class quizzes consist of 10 multiple choice questions and one short answer question.

Research Paper-Topic/Outline

Oct
04

Due: Wednesday, Oct 04 at 11:59 pm

A topic or thesis statement for your research paper and an outline of the paper. The topic/thesis statement should be a well-organized paragraph (about 150-200 words). The outline can be as detailed as you like. This will be due IN CLASS; please bring a printed copy to class. See the assignment description under the 'Content' tab for more detail.

Quiz 4

Oct
04

Due: Wednesday, Oct 04 at 11:59 pm

In-class quizzes consist of 10 multiple choice questions and one short answer question.

Quiz 5

Oct
11

Due: Wednesday, Oct 11 at 11:59 pm

In-class quizzes consist of 10 multiple choice questions and one short answer question.

Midterm (Essay 2)

Oct
20

Due: Friday, Oct 20 at 11:59 pm

The second midterm essay question, worth 25 points.

Midterm (Essay 1)

Oct
20

Due: Friday, Oct 20 at 11:59 pm

Midterm essay 1

Midterm (MC)

Oct
20

Due: Friday, Oct 20 at 11:59 pm

Midterm exam will consist of 75 multiple choice questions and 2 essay questions.

Quiz 6

Oct
25

Due: Wednesday, Oct 25 at 11:59 pm

In-class quizzes consist of 10 multiple choice questions and one short answer question.

Quiz 7

Nov
01

Due: Wednesday, Nov 01 at 11:59 pm

In-class quizzes consist of 10 multiple choice questions and one short answer question.

Quiz 8

Nov
08

Due: Wednesday, Nov 08 at 11:59 pm

In-class quizzes consist of 10 multiple choice questions and one short answer question.

Research Paper-Critical Review 2

Nov

15 Due: Wednesday, Nov 15 at 11:59 pm

You will write a brief (600-900 words) paper summarizing a research article of your own choosing and relating it to the information presented in the textbook and lecture. Papers will thus be graded on four content areas, on general mechanics (spelling, grammar) and style, and on your analysis of the research (see the rubric under the 'Content' tab). Your analysis could include things that you did not like about the paper, things that you thought were particularly good, or future directions that this research could go, for example. Papers should be written at a level that a general scientific audience would understand.

For this assignment, you will choose a primary research article on a topic in Neuroscience. Preferably, the topic will align with the topic of your final research paper. The grading rubric will be the same as for the 1st paper assignment and will be provided under the 'Content' tab in Learning Suite.

Quiz 9

Nov 15 Due: Wednesday, Nov 15 at 11:59 pm

In-class quizzes consist of 10 multiple choice questions and one short answer question.

Quiz 10

Nov 22 Due: Wednesday, Nov 22 at 11:59 pm

In-class quizzes consist of 10 multiple choice questions and one short answer question.

Quiz 11

Nov 29 Due: Wednesday, Nov 29 at 11:59 pm

In-class quizzes consist of 10 multiple choice questions and one short answer question.

Quiz 12

Dec 06 Due: Wednesday, Dec 06 at 11:59 pm

in-class quiz worth 15 points

Course evaluations

Dec 12 Due: Tuesday, Dec 12 at 11:59 pm

Five points for filling out the course evaluations.

Research Paper-Final

Dec 13 Due: Wednesday, Dec 13 at 11:59 pm

The assignment is to write a research paper critiquing the media portrayal of a neuroscience topic covered in this course. In your critique, you must include summaries and references to at least 6 primary research articles (meta-analyses count toward the 6, review articles do not). The preliminary assignments should help you refine your thesis/topic and resource selection as part of the writing process. You are encouraged to visit either the FHSS writing center or the University writing center for help with this assignment.

The media portrayal may be limited to a single movie/TV show/book/article/etc, or it may be a common portrayal across a number of venues. For example, you may choose to critique the portrayal of amnesia in the cult classic *50 First Dates*. Alternately, you may choose to critique the portrayal of amnesia more generally in movies, TV shows, and books such as *50 First Dates*, *Memento*, *Overboard*, *Gilligan's Island*, the Jason Bourne series, etc. Here are some example topics and media portrayals to get you started:

- 10% brain (*Inception*, *Lucy*, *Limitless*, etc.)
- Amnesia (*50 First Dates*, *Overboard*, etc.)
- Football & CTE (*Concussion*)
- Coma/paralysis (*The Diving Bell and the Butterfly*)
- Reading thoughts from scanners (*Paycheck*, *Eternal Sunshine of the Spotless Mind*)
- Male/Female brain differences (*Men are from Mars...*)

Note that you must pick a topic directly related to the content of the course. Any of the topics covered in the textbook are fair game (even if it's from a chapter that we don't have time to cover in class). You may NOT choose dissociative identity disorder/multiple personality disorder (partly because we cannot read another paper about *Split* without tearing our hair out).

Papers will be scored according to the following criteria:

- Papers should be a minimum of 2,000 words.
- Papers should be in APA format including a title page and a reference section (neither of which are included in the 2,000 word count). Do not include an abstract.
- The body of the paper should present a summary of the media portrayal you're targeting and review of the relevant literature drawn from at least 6 primary research papers.
- To receive full points, your topic must be related to the topics covered in the course. As a rule of thumb, if your topic is not mentioned in the index of the textbook, it is unlikely that you will receive full points for your topic. If you have any questions about your topic choice, please ask a TA or the instructor.
- Your review should support a central thesis. For example, your thesis statement might be something like "In addition to the terrible acting and unfunny jokes, *50 First Dates* also insults us with an inaccurate portrayal of how amnesia occurs in the real world". Then in your review talk about the evidence supporting your claim about the science (the claims about terrible acting are self-evident).

SONA extra credit

Dec
13

Due: Wednesday, Dec 13 at 11:59 pm

Up to 15 points extra credit for participation in SONA studies. If you do not qualify for any studies on SONA, you may complete an alternate paper assignment. You may earn up to 15pts TOTAL between SONA participation and the alternate paper assignment.

SONA alternate paper

Dec
13

Due: Wednesday, Dec 13 at 11:59 pm

You may read and summarize one of the papers listed under the content tab for 7.5 points each. Your summary should be 1-2 double-spaced pages. If you choose to do multiple summaries, include them all in the same document. Be sure to indicate which paper you are summarizing in each section. You may earn up to 15pts TOTAL between SONA participation and this alternate paper assignment.

Masterson Talk

Dec
14

Due: Thursday, Dec 14 at 11:59 pm

5pts for attending Travis Masterson's talk on 9/22 and submitting a 1-page summary of the talk.

The final will be worth 200 points.

University Policies

Honor Code

In keeping with the principles of the BYU Honor Code, students are expected to be honest in all of their academic work. Academic honesty means, most fundamentally, that any work you present as your own must in fact be your own work and not that of another. Violations of this principle may result in a failing grade in the course and additional disciplinary action by the university. Students are also expected to adhere to the Dress and Grooming Standards. Adherence demonstrates respect for yourself and others and ensures an effective learning and working environment. It is the university's expectation, and every instructor's expectation in class, that each student will abide by all Honor Code standards. Please call the Honor Code Office at 422-2847 if you have questions about those standards.

Preventing Sexual Misconduct

In accordance with Title IX of the Education Amendments of 1972, Brigham Young University prohibits unlawful sex discrimination against any participant in its education programs or activities. The university also prohibits sexual harassment-including sexual violence-committed by or against students, university employees, and visitors to campus. As outlined in university policy, sexual harassment, dating violence, domestic violence, sexual assault, and stalking are considered forms of "Sexual Misconduct" prohibited by the university.

University policy requires all university employees in a teaching, managerial, or supervisory role to report all incidents of Sexual Misconduct that come to their attention in any way, including but not limited to face-to-face conversations, a written class assignment or paper, class discussion, email, text, or social media post. Incidents of Sexual Misconduct should be reported to the Title IX Coordinator at t9coordinator@byu.edu or (801) 422-8692. Reports may also be submitted through EthicsPoint at <https://titleix.byu.edu/report> (<https://titleix.byu.edu/report>) or 1-888-238-1062 (24-hours a day).

BYU offers confidential resources for those affected by Sexual Misconduct, including the university's Victim Advocate, as well as a number of non-confidential resources and services that may be helpful. Additional information about Title IX, the university's Sexual Misconduct Policy, reporting requirements, and resources can be found at <http://titleix.byu.edu> (<http://titleix.byu.edu>) or by contacting the university's Title IX Coordinator.

Student Disability

Brigham Young University is committed to providing a working and learning atmosphere that reasonably accommodates qualified persons with disabilities. If you have any disability which may impair your ability to complete this course successfully, please contact the University Accessibility Center (UAC), 2170 WSC or 422-2767. Reasonable academic accommodations are reviewed for all students who have qualified, documented disabilities. The UAC can also assess students for learning, attention, and emotional concerns. Services are coordinated with the student and instructor by the UAC. If you need assistance or if you feel you have been unlawfully discriminated against on the basis of disability, you may seek resolution through established grievance policy and procedures by contacting the Equal Employment Office at 422-5895, D-285 ASB.

Mental Health Concerns

Mental health concerns and stressful life events can affect students' academic performance and quality of life. BYU Counseling and Psychological Services (CAPS, 1500 WSC, 801-422-3035, caps.byu.edu) provides individual, couples, and group counseling, as well as stress management services. These services are confidential and are provided by the university at no cost for full-time students. For general information please visit <https://caps.byu.edu> (<https://caps.byu.edu>); for more immediate concerns please visit <http://help.byu.edu> (<http://help.byu.edu>).

Schedule

Date	Topic	Reading	Due
Week 1			
W Sep 06 Wednesday	Introduction	Ch 1* *Unless otherwise noted, all readings are from Pinel's <i>Biopsychology</i> .	No Quiz
Week 2			
W Sep 13 Wednesday	Neuroanatomy	Ch 3	Quiz 1
Week 3			
W Sep 20 Wednesday	Neurons, Synapses & Neurotransmitters	Ch 4	Quiz 2
Th Sep 21 Thursday			Research Paper-Critical Review
Week 4			
W Sep 27 Wednesday	Methods & Neuroimaging	Ch 5	Quiz 3
Week 5			
W Oct 04 Wednesday	Vision	Ch 6	Research Paper-Topic/Outline Quiz 4
Week 6			
W Oct 11 Wednesday	Somatosensation & Motor Control	Ch 7.3, Ch 8	Quiz 5
Week 7			
W Oct 18 Wednesday	Tour MRI Research Facility	--	--
F Oct 20 Friday			Midterm (MC) Opens
			Midterm (Essay 1)
			Midterm (Essay 2)
			Midterm (MC) Closes
Week 8			
W Oct 25 Wednesday	Brain Damage & Recovery	Ch 10	Quiz 6
Week 9			
W Nov 01 Wednesday	Memory	Ch 11	Quiz 7
Week 10			
W Nov 08 Wednesday	Sleep	Ch 14	Quiz 8
Week 11			

W Nov 15 Wednesday	Eating	Ch 12	Quiz 9 Research Paper- Critical Review 2
Week 12			
T Nov 21 Tuesday	Friday Instruction		
W Nov 22 Wednesday	No Classes		Quiz 10
Week 13			
W Nov 29 Wednesday	Sex & Drugs	Ch 13 & 15	Quiz 11
Week 14			
W Dec 06 Wednesday	Language	Ch 16	Quiz 12
Week 15			
W Dec 13 Wednesday	Schizophrenia	Ch 18	Research Paper- Final SONA alternate paper SONA extra credit
Th Dec 14 Thursday	Final Exam: 120 MARB 5:00pm - 6:50pm		Final Masterson Talk
Week 16			
W Dec 20 Wednesday			