

Instructor/TA Info

Instructor Information

Jaycie Loewen: Jaycie Loewen

Office Location: Onine/Zoom

Office Hours: Wed 12:00pm-4:00pm

Or By Appointment

Email: jaycie@cognitivefxusa.com

Course Information

Description

Students will be given an overview of the field of Behavioral Neuroscience. They will learn the basic functioning and structure of the nervous system, the interaction between various parts of the nervous system and the body and related behavioral manifestations. Students will explore the underlying neurophysiology and pathology related to the senses, movement, sleep, reproduction, emotion, ingestion, learning and memory. They will also learn about the neurophysiology involved in communication, neurological, psychiatric, substance abuse and trauma-related disorders. The course will be geared towards students training to work in teaching, therapeutic, and educational settings.

Materials

Material information is currently unavailable due to problems with the byustore web site.

Learning Outcomes

Basic principles of neuroanatomy and neurophysiology

1. Discuss basic principles of neuroanatomy and neurophysiology.

Psychotropic drugs

2. Critically discuss the way in which psychotropic drugs are distributed, metabolized, and excreted.

Way in which different psychotropic agents modify behavior

3. Compare and contrast the way in which different psychotropic agents modify behavior by altering neurotransmitter systems.

Drug classification

4. Describe drug classification and which drugs are used to treat different disorders.

Psychobiology of drug abuse

5. Be familiar with the psychobiology of drug abuse, classes of abused drugs, and drug abuse treatment alternatives.

Neurologic impairment

6. Be familiar with various forms of neurologic impairment and accompanying behavioral manifestations.

Grading Scale

Grades	Percent
A	93%
A-	90%
B+	87%
B	83%
B-	80%
C+	77%
C	73%
C-	70%

D	63%
D-	60%
E	0%

Grading Policy

Grades for all assignments will be recorded in Gradebook. It is the students' responsibility to monitor their grades on Gradebook and to notify the instructor of any missing or incorrect grade. Any missing or incorrect grades from the midterm memorandum and final paper or from work turned in on the day of the final exam or before must be brought to the attention of the instructor by the day before the date that final grades are due to the registrar's office. Requests to fill in missing grades or to alter incorrect grades will not be accepted after this deadline. Finally, any missing or incorrect grades brought to the instructor's attention must be backed up by evidence of the correct grade and that the work was turned in on time.

Participation Policy

This will constitute 13.3% of the students' grades. In order to have engaging discussions about the course material, students will need to come prepared for class having read the assigned readings. Rather than having weekly quizzes, class participation will be used to evaluate whether the student has completed the assigned reading material. I will make every effort to make sure students each have an opportunity to participate. If you have any concerns about class participation, please speak with me after the first class. Absences excused by the instructor will not be counted against his or her class participation grade.

Attendance Policy

Students are expected to attend all classes except for emergencies and absences excused by the instructor. If they cannot attend a class, they should let the instructor know and find out how to make up what was missed in the class.

Classroom Procedures

Please be respectful in our classroom. Please turn off cell phones while in class. Computers are welcome for note taking but please refrain from surfing the internet, answering email, texting...etc. during class times. These activities are distracting to the students around you and your instructor and your participation and contributions are important. Periods of self study during class time may be allowed on a case to case basis.

Assignments

Assignment Descriptions

Memorandum or briefing

May
22

Due: Saturday, May 22 at 11:59 pm

(Worth **26.7%** of student's grade)

- Students will be expected to prepare a memorandum, or briefing, on a subject relating to neuropharmacology as it relates to treatment for neurological disease, misuse, or abuse.
- Focus on being precise and direct.
- The assignment should follow the general format presented as shown by this article by The University of Edinburgh (https://www.ed.ac.uk/files/atoms/files/how_to_write_a_research_briefing_oct2016.pdf) (<https://www.ed.ac.uk/files>)

- Students will be expected to utilize multiple sources including peer reviewed journal articles. Their research should extend beyond what is covered in the texts. **Sources must be cited.**

- In text and reference list (citation style up to you - I would suggest in text numerical for space as one option). Include separate document with ref list or add to back or bottom of breifing main document.

- Approval by instructor is highly advised but not required.

Student Presentations

Jun
04

Due: Friday, Jun 04 at 11:59 pm

(Worth 13.3% of students' grade)

- Each student will choose a neurological disorder, and related treatments, that has an underlying neurophysiological etiology with connections to behavioral manifestations neural systems such as: visual, auditory, body and chemical senses, sleep, movement, reproduction, emotion, ingestion, learning and memory.

- Each student will prepare a PowerPoint presentation that includes a background, body, and conclusions.

- Each student will be expected to present a **20-minute** PowerPoint to the class via Zoom and screen sharing,

- They will also be asked to describe and answer questions related to the underlying structural and/or physiological mechanisms, based on readings and from Carlson and Birkett (12th Edition), or their chosen topic.

- Students will be expected to research their disorder using multiple sources including more than 7 peer reviewed journal articles (NOT the textbook). Their research should extend beyond what is covered in the texts. **Sources must be cited.**

- Students should include some interesting clinical examples (case studies, for example) and they can use video content (up to 2-3 minutes) if so desired.

- They must also demonstrate an understanding of what can be known about their topic based on an understanding of behavioral neuroscience and its limitations for understanding the brain/mind.

- Focus topics must be preapproved by the instructor by **May 8th**.

- PowerPoints should be uploaded to BYU Learning Suite (or emailed to the instructor if problems occur) prior the class session in which the student is presenting.

Peer Review

Jun

Due: Friday, Jun 11 at 11:59 pm

Worth 13.3% of student's grade

Students will review a random mid-term memorandum prepared by another student as assigned by the instructor.

- Students are expected to provide reviews that provide quality, critical assessment of the memorandum/briefing, additional scientific literature or resources to support, challenge, and overall improve the memorandum, and provide comments with a supportive and positive message
- Students may choose how to organize their review (for example, whether comments are made on the file itself or provided in a separate document).

Participation

Jun
16

Due: Wednesday, Jun 16 at 11:59 pm

Student Research Paper

Jun
17

Due: Thursday, Jun 17 at 11:59 pm

(Worth **33.3%** of students' grade)

Students will be expected to write up a literature review that is 5-8 pages.

- Literature reviews should cover recent research published in the scientific literature relating to a disease AND therapeutic approaches (both pharmacological and non-pharmacological if applicable) related to behavioral neuroscience. Reviews may cover a previously discussed disorder or therapy (such as in the memorandum) but it is expected that the proposal will have unique and original content. The review should provide 1) an overview of the neuroanatomy and neurophysiology of their topic of choice 2) a discussion of recent publications/research findings related to their topic of choice 2) a proposal of future directions of the field based on recent research.
- Proposal of topics may be sent to the instructor at any time but are required by **May 30th**

APA Formatting

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

Late submissions

If assignments (memorandum, peer review, final paper) are submitted late, points may be taken off as indicated in the associated rubric, at the instructor's discretion. If the student requires extended time to submit an assignment (+24 hours), a request must be submitted to the instructor at least 24 hours before the assignment is due (this rule may be superseded by a current Accommodation Letter). Assignments will depreciate 20% every day, starting 24 hours after the assignment was due, if the instructor is not notified beforehand and/or no extension has been discussed, also at the instructor's discretion.

Preventing Sexual Misconduct

Brigham Young University prohibits all forms of sexual harassment—including sexual assault, dating violence, domestic violence, and stalking on the basis of sex—by its personnel and students and in all its education programs or activities. University policy requires all faculty members to promptly report incidents of sexual harassment that come to their attention in any way and encourages reports by students who experience or become aware of sexual harassment. Incidents should be reported to the Title IX Coordinator at t9coordinator@byu.edu or (801) 422-8692 or 1085 WSC. Reports may also be submitted online at <https://titleix.byu.edu/report> (<https://titleix.byu.edu/report>) or 1-888-238-1062 (24-hours a day). BYU offers a number of resources and services for those affected by sexual harassment, including the university's confidential Sexual Assault Survivor Advocate. Additional information about sexual harassment, the university's Sexual Harassment Policy, reporting requirements, and resources can be found in the University Catalog, by visiting <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. A disability is a physical or mental impairment that substantially limits one or more major life activities. Whether an impairment is substantially limiting depends on its nature and severity, its duration or expected duration, and its permanent or expected permanent or long-term impact. Examples include vision or hearing impairments, physical disabilities, chronic illnesses, emotional disorders (e.g., depression, anxiety), learning disorders, and attention disorders (e.g., ADHD). If you have a disability which impairs your ability to complete this course successfully, please contact the University Accessibility Center (UAC), 2170 WSC or 801-422-2767 to request a reasonable accommodation. The UAC can also assess students for learning, attention, and emotional concerns. If you feel you have been unlawfully discriminated against on the basis of disability, please contact the Equal Opportunity Office at 801-422-5895, eo_manager@byu.edu, or visit <https://hrs.byu.edu/equal-opportunity> (<https://hrs.byu.edu/equal-opportunity>) for help.

Academic Honesty

The first injunction of the Honor Code is the call to "be honest." Students come to the university not only to improve their minds, gain knowledge, and develop skills that will assist them in their life's work, but also to build character. "President David O. McKay taught that character is the highest aim of education" (The Aims of a BYU Education, p.6). It is the purpose of the BYU Academic Honesty Policy to assist in fulfilling that aim. BYU students should seek to be totally honest in their dealings with others. They should complete their own work and be evaluated based upon that work. They should avoid academic dishonesty and misconduct in all its forms, including but not limited to plagiarism, fabrication or falsification, cheating, and other academic misconduct.

Inappropriate Use Of Course Materials

All course materials (e.g., outlines, handouts, syllabi, exams, quizzes, PowerPoint presentations, lectures, audio and video recordings, etc.) are proprietary. Students are prohibited from posting or selling any such course materials without the express written permission of the professor teaching this course. To do so is a violation of the Brigham Young University Honor Code. It is also unethical to post your own work (study sheets, papers) from the course on file sharing websites as you are encouraging others to engage in plagiarism. These policies continue indefinitely (not limited to the duration of the

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>).

Plagiarism

Intentional plagiarism is a form of intellectual theft that violates widely recognized principles of academic integrity as well as the Honor Code. Such plagiarism may subject the student to appropriate disciplinary action administered through the university Honor Code Office, in addition to academic sanctions that may be applied by an instructor. Inadvertent plagiarism, which may not be a violation of the Honor Code, is nevertheless a form of intellectual carelessness that is unacceptable in the academic community. Plagiarism of any kind is completely contrary to the established practices of higher education where all members of the university are expected to acknowledge the original intellectual work of others that is included in their own work. In some cases, plagiarism may also involve violations of copyright law.

Intentional Plagiarism-Intentional plagiarism is the deliberate act of representing the words, ideas, or data of another as one's own without providing proper attribution to the author through quotation, reference, or footnote.

Inadvertent Plagiarism-Inadvertent plagiarism involves the inappropriate, but non-deliberate, use of another's words, ideas, or data without proper attribution. Inadvertent plagiarism usually results from an ignorant failure to follow established rules for documenting sources or from simply not being sufficiently careful in research and writing. Although not a violation of the Honor Code, inadvertent plagiarism is a form of academic misconduct for which an instructor can impose appropriate academic sanctions. Students who are in doubt as to whether they are providing proper attribution have the responsibility to consult with their instructor and obtain guidance. Examples of plagiarism include:

Direct Plagiarism-The verbatim copying of an original source without acknowledging the source.

Paraphrased Plagiarism-The paraphrasing, without acknowledgement, of ideas from another that the reader might mistake for the author's own.

Plagiarism Mosaic-The borrowing of words, ideas, or data from an original source and blending this original material with one's own without acknowledging the source.


Insufficient Acknowledgement-The partial or incomplete attribution of words, ideas, or data from an original source. Plagiarism may occur with respect to unpublished as well as published material. Copying another student's work and submitting it as one's own individual work without proper attribution is a serious form of plagiarism.

Respectful Environment

"Sadly, from time to time, we do hear reports of those who are at best insensitive and at worst insulting in their comments to and about others... We hear derogatory and sometimes even defamatory comments about those with different political, athletic, or ethnic views or experiences. Such behavior is completely out of place at BYU, and I enlist the aid of all to monitor carefully and, if necessary, correct any such that might occur here, however inadvertent or unintentional. "I worry particularly about demeaning comments made about the career or major choices of women or men either directly or about members of the BYU community generally. We must remember that personal agency is a fundamental principle and that none of us has the right or option to criticize the lawful choices of another." President Cecil O. Samuelson, Annual University Conference, August 24, 2010 "Occasionally, we ... hear reports that our female faculty feel disrespected, especially by students, for choosing to work at BYU, even though each one has been approved by the BYU Board of Trustees. Brothers and sisters, these things ought not to be. Not here. Not at a university that shares a constitution with the School of the Prophets." Vice President John S. Tanner, Annual University Conference, August 24, 2010

Schedule

Date	Column 1	Column 2
Week 1		

T Apr 27 Tuesday	<p>Class session: Introduction to neuroanatomy and neurophysiology</p> <ol style="list-style-type: none"> 1. Class overview 2. Lecture 1: Introduction to neuroanatomy and neurophysiology CPSE 608- lecture 1 - 20210427-1.pptx Download 	
Th Apr 29 Thursday	<p>Class session: Pharmacokinetics and Pharmacodynamics</p> <ol style="list-style-type: none"> 1. Review of the structural and functional aspects of the nervous system 2. Syllabus review and group presentation discussion 3. Lecture 2: Introduction to pharmacokinetics and pharmacodynamics 4. Group work due at end of class 	<p>Carlson and Birkett Chapters 2-3 Optional</p> <p>Drug Classification Video Optional</p> <div data-bbox="987 663 1377 1276" style="border: 1px solid black; padding: 10px; text-align: center;"> <p>Categorizing ...</p>  </div> <p>Drug Classification</p>
Week 2		
T May 04 Tuesday	<p>Class Session: Neuropharmacology</p> <ol style="list-style-type: none"> 1. Review of pharmacokinetics and pharmacodynamics 2. Lecture 3: Looking at neuropharmacology in an epilepsy frame 3. Group exercise: Epilepsy concept/brain map due at end of class 	<p>Carlson & Birkett Chapter 4</p> <p>REQUIRED READING: Pediatric Epilepsy Mechanisms Download</p>

Th May 06 Thursday	<p>Class session: Neuroplasticity</p> <ol style="list-style-type: none"> 1. Review neuropharmacology 2. Lecture: The importance of executive, inhibitory, and neurovascular functions 3. Group work due at end of class 	<p>REQUIRED READING</p> <p>Teaching as Brain Changing- Exploring Connections between Neuroscience and Innovative Teaching.pdf Download</p>
Week 3		
T May 11 Tuesday	<p>Class session: Vision and Audition</p> <ol style="list-style-type: none"> 1. Review neurodevelopment 2. Lecture: Vision and audition 3. Group work due at end of class 	Carlson & Birkett Chapters 6, 7
Th May 13 Thursday	<p>Class session: The body and the chemical senses</p> <ol style="list-style-type: none"> 1. Review vision and audition 2. Lecture: Chemical sensation, substance abuse, movement, and how they are connected 3. Group work due at end of class 	Carlson and Birkett Chapters 7, 9, 18
Week 4		
T May 18 Tuesday	<p>Class session: Biorhythms</p> <ol style="list-style-type: none"> 1. Review chemical senses, substance use, movement 2. Lecture: Sleep and wakefulness, ingestion, and the importance of neuro-based biorhythms 3. Group work due at end of class 	Carlson & Birkett Chapters 9, 12 Student Presentations (TBD)
Th May 20 Thursday	<p>Class session: Emotion, learning, and memory</p> <ol style="list-style-type: none"> 1. Review Biorhythms 2. Memorandum/briefing preparation 3. Lecture: 4 Presentations: Sami C, Misty C, Kami W, Emily C, Julia F 	Carlson & Birkett Chapters 11 and 13 Student Presentations (TBD)
Sa May 22 Saturday	Memorandum/Briefing DUE AT	Grading Rubric CPSE 608

Week 5		
T May 25 Tuesday	<p>Class session: Reproduction, mindfulness</p> <ol style="list-style-type: none"> 1. Review 2. Lecture: Reproduction, mindfulness 3. Presentations: Alison A, Greer F, Rory W, Emily T, Christina T 	<p>Carlson & Birkett Chapter 10</p> <p>Student presentations (TBD)</p>
Th May 27 Thursday	<p>Class session: Neurological disorders</p> <ol style="list-style-type: none"> 1. Review reproduction and mindfulness 2. Lecture: 3. Presentations: Oscar O, Travis S, Shannon S, Julia B, Ben O 	<p>Carlson and Birkett Chapter 15</p> <p>Student presentations (TBD)</p>
Week 6		
M May 31 Monday	Memorial Day	
T Jun 01 Tuesday	<p>Class session: Stress, anxiety, and neurodevelopmental disorders</p> <ol style="list-style-type: none"> 1. Review neurological disorders 2. Lecture: 3. Presentations: Brandon A, Jeff B, Matt I, Chelsey L, Stephen J 	<p>Carlson and Birkett Chapter 17</p> <p>Student presentations (TBD)</p>
Th Jun 03 Thursday	<p>Class session: Human communication, speech and language pathology</p> <ol style="list-style-type: none"> 1. Review stress, anxiety, and neurodevelopmental disorders 2. Lecture: 3. Presentations: Saanya L, Danielle K, Nate R, Travis 	<p>Carlson and Birkett Chapter 14</p>
Sa Jun 05 Saturday		
Week 7		

T Jun 08 Tuesday	<p>Class session: Schizophrenia & affective disorders</p> <ol style="list-style-type: none"> 1. Review human communication and speech pathology 2. Lecture: 3. Group work 	Carlson & Birkett Chapter 16
W Jun 09 Wednesday	Peer review due at end of day 11:59PM!	Grading Rubric CPSE 608 Peer Review (1).docx Download
Th Jun 10 Thursday	<p>Class session: Speech and communication. Comprehensive group reviews and discussion</p> <ol style="list-style-type: none"> 1. Comprehensive group reviews 2. Questions about final paper? 	
F Jun 11 Friday		
Sa Jun 12 Saturday		
Week 8		
M Jun 14 Monday		
T Jun 15 Tuesday	Spring Exam Preparation (06/15/2021 - 06/15/2021)	
W Jun 16 Wednesday	First Day of Spring Final Exams (06/16/2021 - 06/17/2021) Participation	
Th Jun 17 Thursday	<p>Final Paper due: TBA TBA 11:59PM</p>	Grading Rubric CPSE 608 Final Paper 1.docx Download