



Chaminade
University
OF HONOLULU

HAWAII SCHOOL OF PROFESSIONAL PSYCHOLOGY
AT CHAMINADE UNIVERSITY OF HONOLULU

Course Syllabus

[Chaminade University Honolulu](http://www.chaminade.edu)

3140 Waialae Avenue - Honolulu, HI 96816

www.chaminade.edu

Course Number: PP7051A

Course Title: Biological Bases of Behavior

Department Name: Hawai'i School of Professional Psychology

College/School/Division Name: College of Education and Behavioral Sciences

Term: Spring 2020

Course Credits: 3

Class Meeting Days: Wednesday

Class Meeting Hours: 9:00 AM – 12:00 PM

Class Location: TBA

Instructor Name: Robert M. Anderson Jr., Ph.D.

Email: robert.anderson@chaminade.edu

Phone: 808.739.7426

Office Location: Behavioral Sciences Room 109

Office Hours: Tuesday 2:00 PM – 5:00 PM; Thursday 1:00 PM – 5:00 PM; Friday 1:00 PM – 5:00 PM

University Course Catalog Description

This course introduces students to the gross anatomy and the neurophysiology of the nervous system. Students are presented with updated data and findings regarding neurological functions as the foundations of human behavior. It presents an overview of endocrinological processes, adding more breadth to the purpose of this course, introducing students to the fundamentals of physiology behavior correlates. In addition, this course introduces students to the clinical ramifications of primitive reflexes and developmental undertones.

Instructional Contact and Credit Hours

Students can expect 15 hours of instructional engagement for every 1 semester credit hour of a course. Instructional engagement activities include lectures, presentations, discussions, group-work, and other activities that would normally occur during class time. Instructional engagement activities may occur in a face-to-face meeting, or in the classroom.

In addition to instructional engagement, students can expect to complete 30 hours of outside work for every 1 semester credit hour of a course. Outside work includes preparing for and completing readings and assignments. Such outside work includes, but is not limited to, all research associated with completing assignments, work with others to complete a group project, participation in tutorials, labs, simulations and other electronic activities that are not a part of the instructional engagement, as well as any activities related to preparation for instructional engagement.

At least an equivalent amount of work specified in the paragraph above shall be applied for other academic activities as established by the institution, including laboratory work, internships, practica, studio work, and other academic work leading to the award of credit hours.

Marianist Values

This class represents one component of your education at Chaminade University of Honolulu. An education in

the Marianist Tradition is marked by five principles and you should take every opportunity possible to reflect upon the role of these characteristics in your education and development:

- Education for formation in faith
- Provide an integral, quality education
- Educate in family spirit
- Educate for service, justice and peace
- Educate for adaptation and change

Native Hawaiian Values

Education is an integral value in both Marianist and Native Hawaiian culture. Both recognize the transformative effect of a well-rounded, value-centered education on society, particularly in seeking justice for the marginalized, the forgotten, and the oppressed, always with an eye toward God (Ke Akua). This is reflected in the 'Ōlelo No'eau (Hawai'ian proverbs) and Marianist core beliefs:

1. Educate for Formation in Faith (Mana) E ola au i ke akua ('Ōlelo No'eau 364) May I live by God
2. Provide an Integral, Quality Education (Na'auao) Lawe i ka ma'alea a kū'ono'ono ('Ōlelo No'eau 1957) Acquire skill and make it deep
3. Educate in Family Spirit ('Ohana) 'Ike aku, 'ike mai, kōkua aku kōkua mai; pela iho la ka nohana 'ohana ('Ōlelo No'eau 1200) Recognize others, be recognized, help others, be helped; such is a family relationship
4. Educate for Service, Justice and Peace (Aloha) Ka lama kū o ka no'eau ('Ōlelo No'eau 1430) Education is the standing torch of wisdom
5. Educate for Adaptation and Change (Aina) 'A'ohe pau ka 'ike i ka hālau ho'okahi ('Ōlelo No'eau 203) All knowledge is not taught in the same school

Program Learning Outcomes: HSPP Aims and Competencies

The Hawai'i School of Professional Psychology at Chaminade University of Honolulu's clinical psychology doctoral program's aim is to educate and train students employing a practitioner-scholar model so that they will be able to function effectively as clinical psychologists. To ensure that students are adequately prepared, the curriculum is designed to provide for the meaningful integration of psychological science, theory, and clinical practice. The clinical psychology program at the Hawai'i School of Professional Psychology is designed to emphasize the development of knowledge, skills, and attitudes essential in the training of health service psychologists who are committed to the ethical provision of quality, evidence based services to diverse populations and who are able to apply multiple theoretical perspectives to clinical issues.

The Hawai'i School of Professional Psychology at Chaminade University of Honolulu's clinical psychology doctoral program subscribes to the APA Standards of Accreditation. As such, students are expected to establish an identity in and orientation to health service psychology by acquiring the necessary discipline-specific knowledge and profession-wide competencies as follows:

1. Students will demonstrate knowledge of ethical and legal standards relevant to the practice of clinical psychology, including professional ethics that guide professional behavior.
2. Students will develop both communication and interpersonal skills, to include utilization of clear, informative, well-integrated communication, critical thinking, and effective interpersonal skills in professional interactions.
3. Students will demonstrate knowledge of professional values and attitudes as well as self-reflective practice and openness to supervision and feedback.
4. Students will demonstrate competency in individual and cultural diversity, including knowledge of theoretical models and diversity research that serve to guide the application of diversity competence.
5. Students will have knowledge of the history and systems of psychology as well as the basic areas in scientific psychology, including affective, biological, cognitive, developmental, psychopharmacological, and sociocultural aspects of behavior.
6. Students will demonstrate competency in the science of psychology, including knowledge and application of psychometrics, statistical analyses, and quantitative and qualitative research methods.

7. Students will demonstrate competency in psychological assessment, including the ability to administer, interpret, and integrate psychological test results and apply knowledge of strengths and psychopathology to the assessment process.
8. Students will demonstrate competency in clinical intervention, including case formulation, theoretical conceptualization, developing and applying evidence based treatment plans, and evaluating treatment effectiveness in work with clients.
9. Students will evidence knowledge of consultation models and practices, and demonstrate interprofessional and interdisciplinary skills in consultative services.
10. Students will evidence knowledge of supervision models and practices.
11. Students will understand and apply the Marianist values in their professional practice.

Learning Outcomes

- Students will develop a basic understanding of nervous system cells, brain anatomy, neurotransmitter systems, methods of brain research, neurophysiology of sense perception, neural movement control, neurophysiology of sleep and reproductive behavior, neural bases of emotion, ingestive behavior, learning, memory, and communication, relation of psychopathology to brain function, relation of cultural and gender differences to brain function. (Competency 5)
- Students will utilize problem solving and critical thinking in the context of the scientific investigation and validation of brain-behavior relationships. (Competency 2)
- Students will increase their awareness of the relation of ethical, cultural, and situational factors to behavioral, cognitive, and emotional sequelae of neurological disorders. (Competency 1, 4)

Required Learning Materials

Textbooks:

Kandel, E. R., Schwartz, J. H., Jessel, T. M., Siegelbaum, S. A., & Hudspeth, A. J. (2013). *Principles of neural science* (5th ed.). New York, NY: McGraw-Hill. (Kandel)

Kolb, B., & Whishaw, I. Q. (2015). *Fundamentals of human neuropsychology* (7th ed.). New York: Worth. (Kolb & Whishaw)

Required papers:

Alba-Ferrara, L., Hausmann, M., Mitchell, R. L., & Weis, S. (2011). The neural correlates of emotional prosody comprehension: Disentangling simple from complex emotion. *PLOS ONE*, *6*(12), 1-9. doi: 10.1371/journal.pone.0028701

Beaty, R. E., Benedek, M., Silvia, P. J., & Schacter, D. L. (2016). Creative cognition and brain network dynamics. *Trends in Cognitive Sciences*, *20*(2), 87-95. doi: 10.1016/j.tics.2015.10.004

Beaty, R. E., Chen, Q., Christensen, A. P., Qiu, J., Silva, P. J., & Schacter, D. L. (2017). Brain networks of the imaginative mind: Dynamic functional connectivity of default and cognitive control networks relates to openness to experience. *Human Brain Mapping*, *39*, 811-821. doi: 10.1002/hbm.23884

Berridge, K. C. (2019). Affective valence in the brain: modules or modes? *Nature Reviews Neuroscience*, *20*(4), 225-234. doi: 10.1038/s41583-019-0122.8

Bolkan, S. S., Stujenske, J. M., Parnaudeau, S., Spellman, T. J., Rauffenbart, C., Abbas, A. I., . . . Kellendonk, C. (2017). Thalamic projections sustain prefrontal activity during working memory maintenance. *Nature Neuroscience*, *20*(7), 987-996. doi: 10.1038/nn.4568

Dajani, D. R., & Uddin, L. Q. (2015). Demystifying cognitive flexibility: Implications for clinical and developmental neuroscience. *Trends in Neurosciences*, *38*(9), 571-578. doi: 10.1016/j.tins.2015.07.003

D'Esposito, M., & Postle, B. R. (2015). The cognitive neuroscience of working memory. *Annual Review of Psychology*, *66*, 115-142. doi: 10.1146/annurev-psych-010814-015031

Eggebrecht, A. T., Elison, J. T., Feczko, E., Todorov, A., Wolff, J. J., Kandala, S., . . . Pruett Jr., J. R. (2017). Joint attention and brain functional connectivity in infants and toddlers. *Cerebral Cortex*, *27*, 1709-1720. doi: 10.1093/cercor/bhw403

- Frith, C. D., & Haggard, P. (2018). Volition and the brain – Revisiting a Classic Experimental Study. *Trends in Neuroscience*, 41(7), 405-407. doi: 10.1016/j.tins.2018.04.009
- Koch, C., Massimini, M., Boly, M., & Tononi, G. (2016). Neural correlates of consciousness: progress and problems. *Nature Reviews Neuroscience*, 17, 307-321. doi: 10.1038/nrn.2016.22
- Mashour, G. A., & Hudetz, A. G. (2018). Neural Correlates of Unconsciousness in Large-Scale Brain Networks. *Trends in Neurosciences*, 41(3), 150-160. doi: 10.1016/j.tins.2018.01.003
- Norbury, A., Manohar, S., Rogers, R. D., & Husain, M. (2013). Dopamine modulates risk-taking as a function of baseline sensation-seeking trait. *Journal of Neuroscience*, 33, 12982-12986. doi:10.1523/JNEUROSCI.5587-12.2013
- Squire, L. R. (2017). Memory for Relations in the Short Term and the Long Term after Medial Temporal Lobe Damage. *Hippocampus*, 27(5), 608-612. doi: 10.1002/hipo.22716
- Tremblay, S., Sharika, K. M., & Platt, M. L. (2017). Social decision-making and the brain: a comparative perspective. *Trends in Cognitive Sciences*, 21(4), 265-276. doi: 10.1016/j.tics.2017.01.007
- Tsuchiya, N., Wilke, M., Frassle, S., & Lamme, V. A. (2015). No-report paradigms: Extracting the true neural correlates of consciousness. *Trends in Cognitive Sciences*, 19(12), 757-770. doi: 10.1016/j.tics.2015.10.002
- Volkow, N. D., Koob, G. F., & McLellan, A. T. (2016). Neurobiologic advances from the brain disease model of addiction. *New England Journal of Medicine*, 374(4), 363-371. doi: 10.1056/NEJMra1511480
- Zhao, D., Zhou, Y., Bodner, M., & Ku, Y. (2017). The casual role of the prefrontal cortex and somatosensory cortex in tactile working memory. *Cerebral Cortex*, 28(10), 3468-3477. doi: 10.1093/cercor/bhx213

Grading

Course Policies and Requirements

Tests:

Two tests will be given. The midterm will be 15% of the total grade and final will be worth 25% of the total grade. Both tests will consist of an essay, multiple choice and/or true false question format. The final exam will be cumulative.

Group Presentation:

A group of 3-4 students will present a 45-60 minute presentation on the brain correlates of a neuropsychological disorder such as ADHD, LD, stroke, epilepsy, schizophrenia, anorexia nervosa, PTSD, etc. The topic must be different from the topic of the student's individual 15 page paper.

Class Paper:

Students must complete a minimum 15-page (including title page, abstract, and references), double-spaced paper on a theoretical or empirical brain-behavior topic. It should not be on a neuropsychological disorder. It cannot be the same topic covered in your group class presentation. It is recommended that you obtain approval for the topic from the instructor. The paper must be in APA style. It will be graded on content, grammar, style, and organization. The paper is not a collaborative assignment. All work on the paper must be your own. Grade may be lowered 10% per day due to lateness. A one page outline of the paper with references will be presented to the class.

Class Participation:

Students must complete all readings and assignments by class time. Students are expected to participation in class discussion. **More than two absences will require an additional paper. More than three absences will result in loss of credit for the class.** As part of your participation in the class you will read a book on the experiences of people who suffer brain impairment and write 3-4 page report on the book (not including title page, abstract, and reference page). You must select a book from the list provided by the instructor or obtain special permission for a book not on the list. Two students in the class may not cover the same book. You will also present an oral report to of 5-10 minutes in which you describe the phenomenal world of a brain injured person on the basis of the book you have read.

PowerPoint Presentation:

Construction of a PowerPoint and presentation to the class of a chapter from the Principles of Neural Science book selected from a set of chapters suggested by the instructor.

Project/Assignment	<i>% of Grade or Point Value</i>
Midterm	15%
Final	25%
Group presentations	15%
PowerPoint and Chapter Presentation	10%
Class paper	20%
Class Participation (5% Book Report)	15%

In addition to scoring an overall grade of 80% or higher, to pass the course, a grade of 80% correct or greater must be achieved on the Final Exam. If a grade of 80% is not achieved an incomplete progressing will be granted and, after remediation and within the requisite time period, a grade of 80% or greater must be achieved on the Final Exam to pass the course.

Grading Scale (final scores > .5 will be rounded up)

A = 90 – 100

B = 80 – 89

C = 70 – 79

F = 69 and below

Course Policies

Instructor and Student Communication

Questions for this course can be emailed to the instructor. Online, in-person, and phone conferences can be arranged. Response time will take place up to 2 days.

Cell phones, tablets, and laptops

Out of consideration for your classmates, please set your cell phone to silent mode during class. Students are encouraged to bring laptops or tablets to class as the instructor will assign online activities and readings that will require the use of a laptop or tablet. Laptops and tablets should not be misused, such as checking distracting websites. Use your best judgment and respect your classmates and instructor.

Disability Access

If you need individual accommodations to meet course outcomes because of a documented disability, please speak with me to discuss your needs as soon as possible so that we can ensure your full participation in class and fair assessment of your work. Students with special needs who meet criteria for the Americans with Disabilities Act (ADA) provisions must provide written documentation of the need for accommodations from the Counseling Center by the end of week three of the class, in order for instructors to plan accordingly. If a student would like to determine if they meet the criteria for accommodations, they should contact the Counseling Center at (808) 735-4845 or email counselingcenter@chaminade.edu for further information.

Title IX Compliance

Chaminade University of Honolulu recognizes the inherent dignity of all individuals and promotes respect for all people. Sexual misconduct, physical and/or psychological abuse will NOT be tolerated at CUH. If you have been the victim of sexual misconduct, physical and/or psychological abuse, we encourage you to report this matter promptly. As a faculty member, I am interested in promoting a safe and healthy environment, and should I learn of any sexual misconduct, physical and/or psychological abuse, I must report the matter to the Title IX Coordinator. If you or someone you know has been harassed or assaulted, you can find the appropriate resources by visiting Campus Ministry, the Dean of Students Office, the Counseling Center, or the Office for Compliance and Personnel Services.

Attendance Policy

Students are expected to attend regularly all courses for which they are registered. Student should notify their instructors when illness or other extenuating circumstances prevents them from attending class and make arrangements to complete missed assignments. Notification may be done by emailing the instructor's Chaminade email address, calling the instructor's campus extension, or by leaving a message with the

instructor's division office. It is the instructor's prerogative to modify deadlines of course requirements accordingly. Any student who stops attending a course without officially withdrawing may receive a failing grade.

Unexcused absences equivalent to more than a week of classes may lead to a grade reduction for the course. Any unexcused absence of two consecutive weeks or more may result in being withdrawn from the course by the instructor, although the instructor is not required to withdraw students in that scenario. Repeated absences put students at risk of failing grades.

Students with disabilities who have obtained accommodations from the Chaminade University of Honolulu ADA Coordinator may be considered for an exception when the accommodation does not materially alter the attainment of the learning outcomes. Federal regulations require continued attendance for continuing payment of financial aid. When illness or personal reasons necessitate continued absence, the student should communicate first with the instructor to review the options. Anyone who stops attending a course without official withdrawal may receive a failing grade or be withdrawn by the instructor at the instructor's discretion.

Academic Conduct Policy

Any community must have a set of rules and standards of conduct by which it operates. At Chaminade, these standards are outlined so as to reflect both the Catholic, Marianist values of the institution and to honor and respect students as responsible adults. All alleged violations of the community standards are handled through an established student conduct process, outlined in the Student Handbook, and operated within the guidelines set to honor both students' rights and campus values.

Students should conduct themselves in a manner that reflects the ideals of the University. This includes knowing and respecting the intent of rules, regulations, and/or policies presented in the Student Handbook, and realizing that students are subject to the University's jurisdiction from the time of their admission until their enrollment has been formally terminated. Please refer to the Student Handbook for more details. A copy of the Student Handbook is available on the Chaminade website.

For further information, please refer to the Student Handbook at <https://studentaffairs.chaminade.edu/>

All sources must be documented through normal scholarly references/citations and all work must be submitted using the *Publication Manual of the American Psychological Association, 7th Edition* (2019). Washington DC: American Psychological Association (APA) format. Please refer to Appendix A in the *Publication Manual of the American Psychological Association, 7th Edition* for thesis and paper format.

Scholarly writing: The faculty at the Hawai'i School of Professional Psychology at Chaminade University of Honolulu is dedicated to providing a learning environment that supports scholarly and ethical writing, free from academic dishonesty and plagiarism. This includes the proper and appropriate referencing of all sources. You may be asked to submit your course assignments through "Turnitin," (www.turnitin.com), an online resource established to help educators develop writing/research skills and detect potential cases of academic dishonesty. Turnitin compares submitted papers to billions of pages of content and provides a comparison report to your instructor. This comparison detects papers that share common information and duplicative language.

Technology

The following technology may be required in order to complete courses in the Clinical Psychology program: For PCs: at least an Intel® or AMD x86 processor running at 1.3 GHz or faster; 4GB of RAM, 10 GB hard drive space, 1024x576 display, and a DVD-ROM drive (video hardware acceleration is optimal); one of the following operating systems: Windows 7, Windows Server 2003 with Service Pack 2 and MSXML 6.0 (32-bit Office only), or Windows Server 2008 or later 32 or 64-bit OS. For Macs: at least an Intel processor, Mac OS X 10.5.8 or later; 1 GB of RAM, 10 GB free hard drive space, 1280x800 display, and a DVD-ROM drive. Current Norton Antivirus

(Version 10.2 or higher); Microsoft Office Professional (Version 2010 for PC and 2011 for Mac) containing Powerpoint and Word; Acrobat (full version). 56K or faster Internet or broadband connection; web browser: Microsoft Internet Explorer, Mozilla Firefox, or Google Chrome for PC users, Apple Safari, Mozilla Firefox, or Google Chrome for Mac users.

Schedule

Date	Topics	Readings	Assignments
1/8	Physics, chemistry, and biology; Introduction to physiological psychology and neuropsychology.	Kolb & Wishaw 1 Kandel 1, 2	
1/15	Basic neuroanatomy; Evolution of the nervous system; Action potential	Kolb & Wishaw 2, 3 Kandel 4, 5, 6, 7, 15	
1/22	Synaptic transmission; Psychopharmacology; Consciousness.	Kolb & Wishaw 3, 4, 5, 6 Kandel 8, 12, 13	
1/29	Research methods; The visual system.	Kolb & Wishaw 7, 8, 13 Kandel 17, 25-28	_____
2/5	Sensory systems; Motor function.	Kolb & Wishaw 9, 14, 21 Kandel 22, 23, 24, 30, 31, 32	_____
2/12	Motor function, Reproductive behavior.	Kolb & Wishaw 10, 11, 12 Kandel 33, 34, 37, 38, 40, 42, 43, 58	MIDTERM
2/19	Cortical function and asymmetry; Consciousness.	Kolb & Wishaw 10, 11, 12, 17, 22 Kandel 18, 20 Eggebrecht; Koch; Mashour	_____
2/26	Homeostasis; Learning and memory.	Kolb & Wishaw 18 Kandel 47, 49, 65, 66, 67 D'Esposito; Berridge; Squire; Zhao	_____
3/4	Emotion.	Kolb & Wishaw 20, 23; Kandel 48 Norbury; Tremblay	Book Reports Presented and Submitted
3/11	Speech and language.	Kolb and Wishaw 15, 17, 19 Kandel 60; Alba-Ferrara	_____
3/18	Executive functioning; Matter and consciousness.	Kolb & Wishaw 16, 22 Beaty, Benedek; Beaty, Chen, Bolkan; Dajani; Frith; Tsuchiya	Papers Due
3/25	"Neurological" Disorders.	Kolb & Wishaw 25, 26; Kandel 57	_____
4/4	Neurodevelopmental disorders	Kolb and Wishaw 24; Kandel 64	_____
4/8	"Psychological" disorders. Dementia.	Kolb & Wishaw 28; Kandel 59, 62, 63	FINAL EXAM
4/15	Alcohol, drugs, and neurotoxins. Cultural Neuroscience.	Volkow	
4/22	Class Summary.		Class presentation of papers.