HAWAI`I SCHOOL OF PROFESSIONAL PSYCHOLOGY
AT CHAMINADE UNIVERSITY OF HONOLULU

Course Syllabus
Chaminade University Honolulu
3140 Wai'alae Avenue - Honolulu, HI 96816
www.chaminade.edu

Course Number: PP-7051-02
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: Fall 2022
Course Credits: 03
Class Meeting Days: Wednesdays
Class Meeting Hours: 1:00PM – 4:00 PM
Class Location: Behavioral Sciences 101

Instructor Name: Dennis P. Itoga, Psy.D., M.Ed.; Assistant Professor of Psychology
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University Course Catalog Description and Overview
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 physiological 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 typically 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 in 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 ʻŌlelo Noʻeau (Hawai'ian proverbs) and Marianist core beliefs:

1. Educate for Formation in Faith (Mana) E ola au i ke akua (ʻŌlelo Noʻeau 364) May I live by God
2. Provide an Integral, Quality Education (Naʻauao) Lawe i ka maʻalea a kūʻonoʻono (ʻŌlelo Noʻeau 1957) Acquire skill and make it deep
3. Educate in Family Spirit (ʻOhana) ʻIke aku, ʻike mai, kōkua aku kōkua mai; pela iho la ka nohana ʻohana (ʻŌlelo Noʻeau 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 noʻeau (ʻŌlelo Noʻeau 1430) Education is the standing torch of wisdom
5. Educate for Adaptation and Change (Aina) ʻAʻohe pau ka ʻike i ka hālau hoʻokahi (ʻŌlelo Noʻeau 203) All knowledge is not taught in the same school

Program Learning Outcomes: HSPP Aims and Competencies
The Hawaiʻi 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 Hawaiʻi 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 Hawaiʻi School of Professional Psychology at Chaminade University of Honolulu's clinical psychology doctoral program subscribes to the American Psychological Association (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. Upon completion of the PSYD degree in clinical psychology, students will be able to:

1. Apply ethical and legal standards relevant to the practice of clinical psychology, including professional ethics that guide professional behavior.
2. Apply professional communication and interpersonal skills, to include the utilization of clear, informed, and well-integrated communication, as well as effective interpersonal skills across settings.
3. Apply professional values and attitudes across settings, including self-reflective practice and openness to supervision and feedback.
4. Apply awareness of individual and cultural diversity, including knowledge of theoretical models and diversity research that serve to guide the application of diversity competence.
5. Articulate and integrate 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. Conduct science in psychology, applying psychometrics, statistical analyses, and quantitative and qualitative research methods.
7. Competently perform psychological assessments, including the ability to administer, interpret, integrate, and convey results of psychological tests.
8. Competently perform clinical interventions, including case formulation, theoretical conceptualization, developing and applying evidence-based treatment plans, and evaluating treatment effectiveness in work with clients.
9. Apply knowledge of consultation models and practices, including interprofessional and interdisciplinary skills in consultative services.
10. Articulate supervision models and practices, including areas of ethics and potential conflicts.
11. Apply the Marianist values, through acts of community service, justice, and peace.

Course Learning Outcomes

1. Students will analyze and contrast the 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, digestive behavior, learning, memory, and communication, relation of psychopathology to brain function, relation of cultural and gender differences to brain function. (Competency 5)
2. Students will investigate brain-behavior relationships, in order to articulate how current advances in physiological psychology contributes to improved services, treatment, and/or understanding of individuals with neurophysiological disorders. (Competency 2, 3, 4, 5, 7)
3. Students will generate diversity-informed problem formulations and action plans in a group presentation. This is scored in the grading rubric of the final packet. (Competency 4, 10)

4. Students will critically review selected professional, theoretical, and research literature related to prevalent issues in biological bases of behavior, and examine their implications for practice, as measured in their supervision models presentation. (Competency 6)
5. Students will present empirically-research in a professional manner on brain function and neurological disorders. (Competency 2, 5, 6)
6. Students will apply the APA Code of Ethics to supervision and identify and sensitively address ethical issues that arise in supervision systems. This is scored in the grading rubric of the final packet. (Competency 1, 10)

Required Learning Materials

Required Textbooks

Kandel, E. R., Koester, J.D., Mack, S.H., Siegelbaum, S. A. (2021). *Principles of neural science* (6th ed.). New York, NY: McGraw-Hill.

Kolb, B., & Whishaw, I. Q. (2020). *Fundamentals of human neuropsychology* (8th ed.). New York: Macmillan Higher Education.

Readings Readings

Devaraju, D., Kemp, A., Eddins, D., Shrivastav, R., Chandrasekaran, B., & Wray, A. (2021). Effects of task demands on neural correlates of acoustic and semantic processing in challenging listening conditions. *Journal of Speech, Language, and Hearing Research*, 64, 3697-3706. doi:10.1044/2021_JSLHR-21-000066

Dousset, C., Chenut, C., Kajosch, H., Kornreich, C., & Campanella, S. (2022). Comparison of neural correlates of reactive inhibition in cocaine, heroin, and polydrug users through contextual go/no-go task using event-related potentials. *Biology*, 11, 1029. doi:10.3390/biology110710299

Dugre, J., Eickhoff, S., & Potvin, S. (2022). Meta-analytical transdiagnostic neural correlates in common pediatric psychiatric disorders. *Scientific Reports*, 12:4909. doi:10.1038/s41598-022-08909-33

Elwood-Lowe, M., Irving, C., & Bunge, S. (2022). Exploring neural correlates of behavioral and academic resilience among children in poverty. *Developmental Cognitive Neuroscience*, 54. doi:10.1016/j.den.2022.1010900

Fehlbaum, L., Borbas, R., Paul, K., Eickhoff, S., & Raschle, N. (2022). Early and late neural correlates of mentalizing: ALE meta-analysis in adults, children and adolescents. *Social Cognitive and Affective Neuroscience*, 17, 351-366. doi.org/10.1093/scan/nsab1055

Halfmann, K., Hedgcock, W., & Denburg, N. (2021). Neural correlates of cognitive reappraisal of positive and negative affect in older adults. *Aging and Mental Health*, 25(1), 126-133. doi:10.1080/13607863.2019.16939700

Jouban, K., Bar-Haim, S., & Shmuelof, L. (2022). The functional and structural neural correlates of dynamic balance impairment and recovery in persons with acquired brain injury. *Scientific Reports*, 12:7990. doi:10.1038/s41598-022-12123-6

Kikuchi, Y., Noriuchi, M., Isobe, H., Shirato, M., & Hirao, N. (2021). Neural correlates of product attachment to cosmetics. *Scientific Reports*, 11:24267. doi:10.1038/s41598-021-03576-22

Kokonyel, G., Galambos, A., Kocsel, N., Szabo, E., Edes, A., Gecse, K., Baksa, D., Pap, D., Kozak, L., Bagdy, G., & Juhasz, G. (2021). Inter-individual differences in pain anticipation and pain perception in migraine: neural correlates of migraine frequency and cortisol-to-dehydroepiandrosterone sulfate (DHEA-S) ratio. *PLOS One*, 16(12). doi:10.1371.journal.pone.02615700

Labek, K., Dommes, L., Bosch, J., Schurz, J., Viviani, R., & Buchheim, A. (2022). A short functional neuroimaging assay using attachment scenes to recruit neural correlates of social cognition – a replication study. *Brain Sciences*, 12, 855. doi:10/3390/brainsci120708555

Lopes, F., Faria, C., Dias, G., Mallmann, M., Mendes, V., Horato, N., de-Melo-Neto, V., Veras, A., Magalhaes, F., Malaspina, D., & Nardi, A. (2021). Neural correlates of negative and disease-specific emotional stimuli in panic disorder: a functional magnetic resonance imaging study. *Brazilian Journal of Psychiatry*, 43(6), 605-612. doi:10.1590/1516-4446-2020-15733

Nicholson, A., Siegel, M., Wolf, J., Narikuzhy, S., Roth, S., Hatchard, T., Lanius, R., Schneider, M., Lloyd, C., McKinnon, M., Heber, A., Smith, P., & Lueger-Schuster, B. (2022). A systematic review of the neural correlates of sexual minority stress: towards an intersectional minority mosaic framework with implications for a future research agenda. European Journal of Psychotraumatology, 13:2002572. doi:10.1080/20008198.2021.2002572

Olsen, L., Chen, B., & Fishman, I. (2021). Neural correlates of socioeconomic status in early childhood: a systematic review of the literature. *Child Neuropsychology*, 27(3), 390-423. doi:10.1080/09297049.2021.18797666

Press, S., Biehl, S., Vatheuer, C., Domes, G., & Svaldi, J. (2022). Neural correlates of body image processing in binge eating disorder. *Journal of Psychopathology and Clinical Science*, 131(4), 350-364. doi.org10.1037/abn00007500

Salagnon, M., Cremona, S., Joliot, M., d'Errico, F., & Mellet, E. (2022). Neural correlates of perceiving and interpreting engraved prehistoric patterns as human production: effect of archaeological expertise. PLOS One, 17(8). doi:10.1371/journal.pone.0271732

Sparrow-Downes, V., Trincao-Batra, S., Cloutier, P., Hellerman, A., Salamatmanesh, M., Garnder, W., Baksh, A., Kapur, R., Sheridan, N., Suntharalingham, S., Currie, L., Carrie, L., Hamilton, A., & Pajer, K. (2022). Peripheral and neural correlates of self-harm in children and adolescents: a scoping review. *BMC Psychiatry*, 22:318. doi:10.1186/s12888-022-03724-6

Wang, X., Li, P., Zheng, L., Liu, Z., Cui, G., Li, L., Zhang, L., Hu, Q., Guo, Q., Wan, L., Li, C., Chen, Y., Sun, Z., Cui, H., Meng, X., & Si, Y. (2021). The passive recipient: neural correlates of negative self-view in depression. *Brain and Behavior*, 12:e2477. doi:10.1002/brb3.2477

Wiegand, A., Munk, M., Drohm, S., Fallgatter, A., MacIsaac, J., Kobor, M., Nieratschker, V., & Kreifelts, B. (2021). Neural correlates of attentional control in social anxiety disorder: the impact of early-life adversity and DNA methylation. Journal of Psychiatry Neuroscience, 46(6). doi:10.1053/jpn.210064

Zhang, S., Zhang, W., Ma., W., Qi, Z., Wang., Y., & Tao, Q. (2022). Neural correlates of negative emotion processing in subthreshold depression. *Social Cognitive and Affective Neuroscience,* 17, 655-661. doi:10.1093/scan/nsac003

Course Requirements

Attendance and Participation. Regular attendance and active participation in class discussions and role-plays are required. Therefore, students are expected to attend every class, arrive on time, complete all assigned readings, actively participate in class discussions, complete all in-class assignments, and behave appropriately and professionally at all times. Failure to meet these expectations will result in an individual meeting with the instructor, and if severe or chronic will result in a meeting with the student's academic advisor for remediation. Late or absent students are responsible for missed material, and more than two unexcused absences will require additional work and may result in loss of credit for the course.

Students are expected to familiarize themselves with all assigned materials ahead of time and to come prepared to discuss and/or apply them in class. The readings listed for a particular class date are the readings that will be discussed on that date, so please read them ahead and come prepared to discuss them or do activities based on the readings.

Book Report. As part of your class requirements, totaling 20% of your overall grade, you will read a book on the experience of an individual or groups of people who suffered brain impairment, and write a 5-7 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 orally present the phenomenology of the individual/group specified from your reading (5-10 minutes) to the class.

Research Project/Presentation. Students must create an individual theoretical research project (e.g., three-panel poster; video service announcement, digital model, digital app), complete with a supporting 15-page paper, on an empirically-based brain-behavior topic (which needs to be approved no later than the end of the third week). Progress of the research project will be formally assessed mid-term (Week 8), totaling 15% of the overall grade. The research project is original and will be dissimilar to your group presentation. The paper is not a collaborative assignment and must be in APA style: graded on content, grammar, style, and organization. Late papers will not be accepted. The final paper and project will be ready for submission by week 14; and the student will present a 20-25 minute oral. The final paper and presentation together are worth 20% of the total grade.

Tests. One test will be given. The Final will be worth 20% of the total grade. The test may consist of multiple choice, true false, and short-answer/essay format. The final exam will be cumulative. 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 grade will be granted and, after remediation and within the requisite period, a grade of 80% or greater must be achieved on the Final Exam to pass the course.

Group Presentation. A group of 3-4 students will present a 45-55-minute presentation on the brain correlates of a neuropsychological disorder such as ADHD, SLD, stroke, epilepsy, schizophrenia, anorexia nervosa, PTSD, etc. The topic must be different from the student's individual research project paper. The group presentation will constitute a total of 15% of your total course grade.

Grading

Project/Assignment	Point Value (out of 100 pts)
Attendance and Participation	10 points
Mid-Research/Paper (Formative)	15 points
Full-Research/Paper/Presentation (Formative II)	20 points
Group Presentation	15 points
Book Report	20 points
Final Exam (Summative)	20 points

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, a grade of 80% or greater must be achieved on the Final Exam to pass the course.

Grading Scale
Grade point equivalents (and grading scale values) are presented below. Final scores > .5 will be rounded up.

A = 4.00 (93-100) A- = 3.67 (90-92) B+ = 3.33 (88-89) B = 3.00 (83-87) B- = 2.67 (80-82) C = 2.00 (70-79); Failed - No credit given F = 0.00 (< 69); Failed - No credit given

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 is 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, for instructors to plan accordingly. If a student would like to determine if they meet the criteria for accommodations, they should contact the Kōkua ʻIke Coordinator at (808) 739-8305 for further information (ada@chaminade.edu).

Failure to provide written documentation through the Counseling Center will prevent your instructor from making the necessary accommodations, instructors cannot provide

accommodations unless they have been prescribed by the Counseling Center. Once you have received an official notice of accommodations from the Counseling Center, it is also very important to discuss these accommodations directly with your instructor so that they can better support your needs. If you have specific questions regarding your individualized accommodations, you may speak directly with your instructor and/or you may contact the Counseling Center.

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, you are encouraged to report this matter promptly. Faculty members promote safe and healthy environments, and any sexual, physical, and/or psychological misconduct or abuse will be reported 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 regularly attend all courses for which they are registered. Student should notify their instructors when illness or other extenuating circumstances prevents them from attending class, and they should decide to obtain missed information and 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.

Students may be automatically withdrawn from the class or receive a failing grade if there are three or more absences in a 16-week term or two absences in a row in a 16-week term. With the condensed nature of the 8- week terms, missing class one day (e.g., 6-hours of class) would be equivalent to two absences in a row in a 16- week term.

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 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 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 HSPP Program Catalog, 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 Program Catalog 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 and HSPP Program Catalog for more details. A copy of the Student Handbook is available on the Chaminade website.

Unless expressed in writing via a university accommodation, all course information, content, and materials in any medium (including but not limited to notes, slides, recordings, electronic files, and verbal discussions and presentations) are prohibited from being intentionally or unintentionally shared (or allowed to be accessed), distributed, published, uploaded, or reproduced in any form, as they are reserved for the private use by the student registered for the course. Any audio and/or visual recordings (including pictures) are prohibited unless prior written permission from the instructor is granted, and permission is limited to individual and temporary use (i.e., recordings are not to be shared/reproduced, recordings must be deleted at the end of the term).

Unless otherwise instructed, all course submissions should follow the formatting of the *Publication Manual of the American Psychological Association, 7th Edition* format. 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 an online authenticity resource (e.g., Turnitin), which helps students and instructors detect potential cases of academic dishonesty.

Technology: A laptop with the following technology may be required to complete courses in the Clinical Psychology program: at least Windows 10 (for PCs), at least Mac OS X 10.5.8 (for Macs); a current antivirus program; the current Microsoft Office (PowerPoint and Word) and Adobe Acrobat; a standard web browser; and an internet or broadband connection with speed and connectivity to support internet searches and video conferencing.

Schedule

Week	Date	Topics	Readings Due (to be completed before attending **next** class)	Assignments Due
1	08/24	Neuropsychology; Brain and Behavior, Genes and Behavior *Introduction to physiological psychology and neuropsychology*	Kandel CH – 1 pp 7 - 25: **The Brain and Behavior** Kandel CH – 2 pp 26 - 55: **Genes and Behavior** Kolb & Whishaw CH 1 pp 1 - 25: **The Development of Neuropsychology**	

2	08/31	Basic neuroanatomy; Evolution of the nervous system; Action potential	Kandel CH – 7 pp 130 - 164: **The Cells of the Nervous System** Kandel CH – 8 pp 165 - 189 **: The Ion Channels** Kolb & Whishaw CH – 3 pp 50 - 79: **Nervous System Organization** Dugre, et. al (2022)	
3	09/07	No Class	Kolb & Whishaw CH – 24 pp 615 – 644: **Neurodevelopmental Disorders** Sparrow-Downes, et. al (2022)	
4	09/14	Synaptic transmission. Psychopharmacology. Consciousness. VIDEO	Kandel CH – 17 pp 385 – 407: **Sensory Coding** Kandel CH 21 pp 496 – 520: **The Constructive Nature of Visual Processing**	
4	09/21	Research methods; The visual system.	**Auditory Processing** Kandel CH – 29 pp 682 – 706: **Smell and Taste: The Chemical Sense**s Kolb & Whishaw CH – 7 pp 162 – 187: **Imaging the Brain's Activity** Kolb & Whishaw CH – 8 pp 188 – 215: **Organization of the Sensory System** Press, et. al (2022)	

5	09/28	Neural mechanisms involved in processing the human senses (auditory, olfactory, gustatory, & touch) Neuropathology of sense Sensory systems; Motor function.	Kandel CH – 20 pp 470 - 495: **Pain** Kandel CH – 27 pp 629 - 650: **The Vestibular Balance** Kolb & Whishaw CH – 9 pp 216 – 237: **Organization of the Nervous System** Kokonyel, et. al (2021)	_____
6	10/05	Neural mechanisms involved in processing pain and balance	Kandel CH – 31 pp 737 - 760: **The Motor Unit and Muscle Action**	
7	10/12	Motor function, Reproductive behavior.	Kolb & Whishaw CH – 21 pp 528 – 553: **Spatial Behavior** Kolb & Whishaw CH – 22 pp 554 – 580: **Attention and Consciousness**	_____
8	10/19	Attention and Consciousness Cortical function and symmetry; Consciousness.	Kolb & Whishaw CH – 18 pp 443 – 472: **Learning and Memory**	**Mid-Research Assessment** _____
9	10/26	Homeostasis; Learning and memory.	Kolb & Whishaw CH – 20 pp 503 – 527: **Emotion and the Social Brain**	
10	11/02	Emotion.	Kolb & Whishaw CH – 19 pp 473 – 502: **Language** Kandel CH – 55 pp 1370 – 1391: **Language**	_____
11	11/09	Speech and Language	Kandel CH – 59 pp 1473 – 1487: **Disorders of Conscious and**	_____

			Unconscious Mental Processes Jouban, et. al (2022)	
12	11/16	Neurological Disorders	Kandel CH – 60 pp 1488 – 1500: **Disorders of Thought and Volition in Schizophrenia** Dousset, et. al (2022).	**Papers Due**
13	11/23	Psychotic Disorders Substance Use Disorders	Kandel CH – 63 pp 1544 – 1560: **Genetic Mechanisms in Neurodegenerative Diseases of the Nervous System** Kandel CH – 64 pp 1561 – 1583: **The Aging Brain** Wang, et. al (2021) Zhang et al. (2021)	**Book Reports Presented and Submitted**
14	11/30	Neurocognitive disorders. Dementia.		**Final Research Presentation**
15	12/07	Class Summary.		**Final Research Presentation**
16	12/14			**Final Exam**