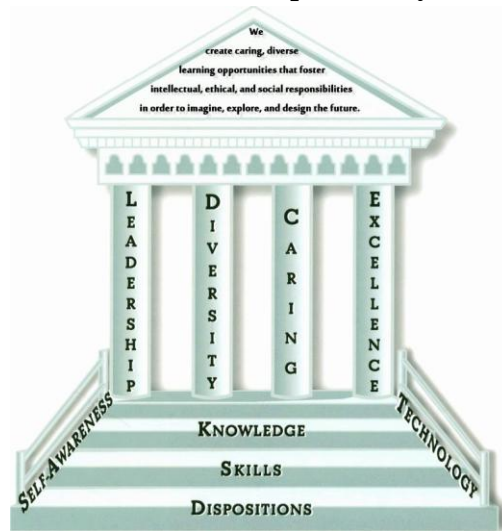


EDUC 558
Cognition and Brain Development - Hybrid Course



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Technology requirements: A computer that is relatively up to date, high speed internet access, up to date browser, and the following plug ins: flash, quick time, and adobe reader.

This is a hybrid course, meaning that although the majority of classes will be meeting on a weekly basis face-to-a portion of this course will be presented online (5-6 nights/weeks). The nights that are online are highlighted in your course schedule. On these nights, you will not come to class. For each online night, the content of the week will be posted on Blackboard the Sunday evening prior to the week of the online class. You will be given from Monday to Sunday to complete the activities at your convenience. Discussion forums will begin (start posting responses) on Wednesday and end (responding to colleagues) by Friday evening. Online work that is posted late will not be graded.

For our face-to-face class meetings, our classes will be punctuated with processing activities each night. These consist of various different active learning processes, and students are expected to fully participate.

This course has high academic standards that are attainable for students who are curious, apply intellectual effort, read to understand, ask questions, think about the material, and are full participants in the course. There will be many opportunities for interaction between professor and students, and among students. There might be times when critical information is sent via email or posted on an announcement in Blackboard, so you will be expected to read your LaVerne email daily. If you are new to online work, please feel free to ask for help. I will help you or get you some help. I highly recommend the Blackboard Helpdesk at 909.593.3511 ex. 4089 or bbhelp@laverne.edu as a first line of assistance. The people who man the phone are extremely knowledgeable and helpful.

This course is designed to familiarize students with the human brain, its structures and functions as well as its development from conception to adolescents. Several neurological issues (autism, sensory integration disorder, etc.) will be studied, as well as ways in which educators may support students who have been diagnosed with said issues.

Students who want to excel in this course should consistently do the following:

1. Participate
2. Think critically, make connections, find relevance.
3. Complete all class activities no later than the dates assigned.
4. Read all assigned material before engaging in peer interaction.
5. Ask questions, clarify misunderstandings with peers and instructor.
6. Take notes when necessary – either online or on class readings.
7. Focus on weekly key concepts listed in the syllabus.
8. Be an enthusiastic and curious learner, extending beyond the required material at times.

9. Actively use your ULV email account and blackboard effectively. These tools are our primary communication source and are a necessary part of our work.
10. Course requirements are subject to change by the student as well as the instructor. I want students to learn as much as possible. Therefore, students may need different readings and projects to maximize learning. Any student who would like to alter their readings or expectations may do so by negotiating with the instructor. However, any student who remains quiet accepts the status quo. I may decide to change readings, discussions or assignments to better meet the learning needs of the group.

Learning Outcomes:

This course is designed to enable students to:

1. Demonstrate knowledge of the organization of the primary structures of the brain, including interactions between brain structures especially as they relate to learning.
2. Describe how emotions impact learning.
3. Explain neuron structure and function, neurotransmitters and drug interactions as they relate to child behavior.
4. Demonstrate understanding of neurotransmitters and their function with regard to learning.
3. Evaluate current educational practices that consider how the brain learns as a lens for planning, input and assessing.
4. Apply knowledge of cognitive theory and information processing theory which support educational practices related to the brain.
5. Analyze four potential dysfunctions of the brain that might be seen in a school setting.
6. Demonstrate knowledge of how drugs, both “good” (SSRI’s) and “bad” (heroin) affect the brain and relate to learning and/or classroom behavior.
7. Describe brain development beginning with conception through adolescents, including critical periods.
8. Demonstrate an understanding of the important of play and exercise in the developing brain.
9. Explain the meaning of plasticity and the ramifications of plasticity as it relates to aging, brain injuries, and learning.
10. Articulate ideas and concepts from this class to other audiences to assist their understanding of neuroeducation.

Required Texts:

Eliot, Lise. (1999). What’s going on in There?

Wolfe, (2001). Brain Matters: Translating Research into Practice

Recommended Texts:

Medina, John. (2010) Brain Rules for Babies.

Paul, Annie Murphy (2010) Origins.

Le Doux, Joseph. (1996). (1) The Emotional Brain.

Schacter, Daniel. (1996). (1) Searching for Memory.

Calvin, W. H. & Ojemann, G. A. (1994). Conversations with Neil’s Brain.

Wolfe, Patricia, & Sorgen, Marny. (1990). Mind, Memory, and Learning.

Diamond, Marian, & Hopson, Janet. (1998). Magic Trees of the Mind.

National Research council. (1999). How People Learn.

Ratey. (2001). A User’s Guide to the Brain.

Schachter,(2001). (2) The Seven sins of Memory

Ledoux, (2002). (2) The synaptic Self.

Student Responsibilities

1. **Attend class** - It is expected that students attend face to face classes on time and stay throughout the class period. Extreme tardiness (anything over 20 minutes late) is not only distracting to everyone in the class, but much critical input has already been given by that time. Often, students are already engaging in their first processing activity related to key concepts for the night by this time. Therefore, students who are more than 20 minutes late or leave early will be counted as absent. One absence per class is allowed. A second absence will

subtract 30 points from your grade. A third absence, an additional 30 points. A fourth absence will result in dropping the student from class.

2. Check your ULV email daily - As mentioned previously, this is our main form of communication. You will be held responsible for all information sent through ULV email. I will check my email every day, and normally am able to respond to students within a 24 hour window (weekends might take longer).
3. Online work - Students are expected to complete all online assignment, including interactive group work, within the time parameters set by the instructor. Some, but not all, of the activities online will be graded. Missing an online night will reduce the students grade by 30 points (similar to face to face repercussions).
4. Technology requirements - a computer that is relatively up-to-date, high-speed internet access, virus-free files, up-to-date browser (Firefox 3.6 is recommended), and the following plug-ins: flash, quicktime and adobe reader. You will also need a headset or some other effective means of recording your voice.
5. Assignments - There are three core projects that you may want to begin earlier in the term than the week they are due. These are the research paper, an assessment for adult learners (about the brain), and a parent pamphlet. Each of these assignments has an instruction page and grading rubric in the core projects tab on Blackboard. Please refer to these for clarification.
6. Tests - There will be two exams in this course, one mid-term and one non-comprehensive final. Exams will have study guides available the week prior to the exam.
7. Written work - All written work will be submitted online, except for the parent pamphlet, which you will be bringing to class to share with your colleagues. Writing should be well organized, demonstrate critical thinking and present ideas in an articulate fashion. The research paper is to be written in APA style. All written work must meet minimum graduate writing standards and be the current, original work of the author in order to receive a grade. Papers must be turned into safeassign and must be there no later than midnight of the due date. Late papers will be reduced by one grade. Please do not use prior-written papers, as these are not considered current.
8. Communication - All communication within this course including discussion boards, emails, in-class activities, are expected to be completed in high quality, graduate level English. Typos, vague writing or language creates confusion. Students are expected to be as succinct as possible and clear as possible. Respectful communication is the cornerstone of all our interactions, therefore it is an imperative expectation among the group.
9. Academic Honesty - All work must be the original work of the student. There is no work in this class that would allow you to copy anything from a text, article, web site, work of another student, the instructor's presentations, etc. Any student found to copy any information, design, map or other work in an attempt to establish it as their own, will risk an F in the course and be reported to the Dean.
10. Syllabus - This syllabus is subject to change. Students are to be responsible for any changes sent by email or posted on Blackboard related to changes in the syllabus.

Weekly Work & Other Assignments

Exit Cards, online and in-class work: (300 Points). Most weeks you complete an exit card, complete activities and work in class and/or complete online activities. Your grade will depend on the accuracy of information, as well as the **frequency and quality of your comments, questions, postings online** when applicable.

Assessment: (100 Points). You will demonstrate your knowledge of the content of the class by creating an assessment (for adults) that relates to 3 or 4 learning outcomes. This assessment can take several different forms, and should include the answer key, grading criteria and any other items that would facilitate future use. (see rubric)

Research Paper: (100 Points). You will be required to write a research paper (6-8 pages) that reviews current available research. The topic should be related to course content and be of interest to you. Please clear your topic with the instructor. Late papers will result in reduced grade. Total possible points for paper 100. (see rubric)

Parent Pamphlet: (100 Points). You will create a pamphlet explaining and describing various key concepts of the course that may be used in the future with different audiences (parents, teachers, community members, etc.). The pamphlet should include text (XXX words) written in a reader-friendly manner, and carefully chosen,

compelling visuals. The purpose of this pamphlet is to be enable the reader a quick reference for concepts embedded in our learning outcomes. (see rubric)

Midterm & Final Exam (100 Points Each)

Grading Chart

Final Grade	Points Received
A	800 – 760
A-	759 – 720
B	719 – 680
B-	679 – 640

Assignment	Points Possible	Points Received
Exit Cards, in-class & online work	300	
Assessment	100	
Parent Pamphlet	100	
Research Paper	100	
Mid-term	100	
Final Exam	100	
Total points	800	

Schedule:

Note: Key concepts are described here for you to focus your reading. Do not limit your reading to these areas, as other concepts will be introduced and expected. However, key concepts are expected knowledge prior to weekly blackboard work. If you don't understand you should ask (on blackboard, by email, etc.) Reading should be done prior to weekly discussions or activities or quizzes. Lectures and videos should be viewed after reading and before engaging in other blackboard work. Discussions will be among small group members (4 or 5). Each discussion will require an original posting, and responses to all group members. Original postings should occur no later than midnight Tuesday, and responses from Wednesday to Friday. All other blackboard assignments will have due dates in the instructions.

date	content	weekly objectives & activities	assignments/preparatory reading	key concepts
week 1 2-2	course introduction, syllabus, dispositions, core projects history of neuroscience	<ol style="list-style-type: none"> 1. List course policies, learning outcomes and assignments expected from students. 2. Determine three events from a given timeline that substantially moved the study of the brain forward. 3. Articulate how ULV's dispositions manifest in the real-world, student setting. 	Wolfe preface - p. 11 syllabus, History of Neuroscience timeline (on Blackboard)	history of neuroscience, dispositions
week 2 2-9 ONLINE	external brain structures and functions	<ol style="list-style-type: none"> 1. Draw and label various external structures and functions of the human brain. 2. Assess scenarios and explain what structure and function is indicated therein. 3. Describe the shape, form, texture and design of the human brain. 	Wolfe ch. 3 Eliot ch. 1	External structures, functions, cortex, cerebellum, brain stem, temporal, parietal, occipital, frontal lobes, motor strip, sensory strip
week 3 2-16 ONLINE	internal brain structures and functions ONLINE	<ol style="list-style-type: none"> 1. Draw and label various internal structures and functions of the human brain. 2. Assess scenarios and explain what structure and function is indicated therein. 3. Sort internal and external structures and functions in a variety of ways. 	Wolfe ch. 2 Eliot ch. 2	Internal structures, limbic region, amygdale, hippocampus, basal ganglia, thalamus, hypothalamus

date	content	weekly objectives & activities	assignments/preparatory reading	key concepts
week 4 2-23	negative emotions impact on learning	<ol style="list-style-type: none"> 1. Articulate the sequence of fight or flight and its relationship to brain activity. 2. Describe the symptoms of PTSD and the theory behind it. 3. Make judgements regarding educational practices that may hinder learning. 	Article on Blackboard	Negative Emotion's Impact on Learning, amygdala, fight or flight response, downshifting, PTSD
week 5 3-1 ONLINE	positive emotions impact on learning	<ol style="list-style-type: none"> 1. Describe how positive emotions manifest in the brain (the sequence, the neurotransmitters role, the resulting impact). 2. Compare and contrast positive v negative emotions impact on cognition, critical thinking and language. 3. Generate a list of applications for this knowledge. 	Article from Brain Connection Article from Discover	Positive Emotion's Impact, critical thinking, flow state, acetylcholine, dopamine, motivation, reward system/pathways, language acquisition, play and learning
week 6 3-8 ONLINE	information processing, neural networks, cell structures in the brain ONLINE	<ol style="list-style-type: none"> 1. Trace the sequence of how the brain processes information. 2. draw and label three main parts of a neuron and their functions. 3. Describe how neural networks go from fragile to robust. 	Wolfe ch. 4	Neuron, axon, cell body, dendrite, myelin, glia, synapse, neurotransmitters, neural networks, processing
week 7 3-15	spring break	1.		

date	content	weekly objectives & activities	assignments/preparatory reading	key concepts
week 8 3-22 ONLINE	mid-term ONLINE			
week 9 3-29	Processing and the role and function of neurotransmitters	<ol style="list-style-type: none"> 1. Explain how we process information neurologically speaking 2. Evaluate the importance of different sensory systems relative to processing. 3. Articulate why active learning, feedback and movement may facilitate processing. 	Wolfe Ch. 5 Eliot ch. 7,9,10	Cognitive theory, information processing, neurotransmitters, sensory systems active learning, feedback, impact of exercise on processing
week 10 4-5	memory	<ol style="list-style-type: none"> 1. compare and contrast declarative v non-declarative memory, episodic v semantic 2. sequence the different stages of memory 3. describes what makes material more or less memorable. 4. Evaluate scenarios for developmentally appropriateness memory events 	Wolfe Ch. 6 & 7	Memory, declarative, procedural, episodic, semantic, rehearsal, hippocampal binding, short-term, working and long term
week 11 4-12	brain development - conception to birth	<ol style="list-style-type: none"> 1. trace the brain's most critical stages in utero 2. explain why the consumption of alcohol during the first trimester may result in FAE or FAS 3. Describe teratogens and how they are categorized today 	eliot ch. 2 & 3	neural plate, neural tube, neural tracking, apoptosis, myelin

date	content	weekly objectives & activities	assignments/preparatory reading	key concepts
week 12 4-19	brain development from birth to three	<ol style="list-style-type: none"> 1. sequence critical cognitive and sensory windows during the first three years of life. 2. describe the impact experience has on various cognitive experiences. 3. analyze how play helps children develop critical thinking skills. 	eliot ch. 4, 5, 6	critical periods, language development, small and large motor development, sensory development, cognition as it relates to play
week 13 4-26	Brain Dysfunctions: Autism, ADD/ADHD, Traumatic Brain Injury, Sensory Integration Disorder	<ol style="list-style-type: none"> 1. describe the symptoms of each of the disorders and explain how they manifest in a classroom and/or preschool setting. 2. Generate ways to effectively respond to said dysfunctions in a classroom setting. 	article	Brain dysfunctions, autism spectrum disorders, ADHD, Dyslexia, Traumatic Brain Injury
week 14 5-3	Instruction, assessment and curriculum that takes advantage of how the brain sorts, processes, stores and retrieves information.	<ol style="list-style-type: none"> 1. Evaluate case studies for brain-compatible instruction, assessment and curriculum. 2. Choose a pioneer of neuroeducation that best aligns with your own guiding principles and describe why this is so. 3. Generate a component of a lesson that would be considered brain-friendly and articulate why you believe this to be so. 	Wolfe ch. 10 article from web site	Brain-compatible instruction and assessment, brain-compatible curriculum, Pat Wolfe, Robert Sylwester, Eric Jensen, neuroeducation
week 15 5-10	final	1.		

date	content	weekly objectives & activities	assignments/preparatory reading	key concepts
week 16 5-17	articulation of new content	<ol style="list-style-type: none"> 1. present findings from your research that you feel is most applicable and relevant to your current context. 2. present parent pamphlets to peers, highlighting key features of the pamphlet. 	their own research papers their own pamphlets outside reading to support	articulation of new learning