EDUC 510  Cognition and Learning Section 2- 3 units  

**Days/Times:** Wednesdays 4:40-7:30pm  
**Room:** MRH 201  
**Instructor:** Dr. Bobbi Hansen, Ed.D.  
**Email:** chansen@sandiego.edu  
**Telephone:** 619-260-2381  
**Office Hours:** M: 12:00-1:00 and W: 12:00-4:00 and by appointment.

**Course Description**

This course encompasses key cognitive studies on the science of learning. Students will critically analyze the newest research on the human brain and discuss how that research impacts learning and teaching, including contemporary debates on cognitive processes, memory, reasoning, problem-solving, motivation, the role of emotions as well as other essential topics in human cognition and learning with an emphasis on the implications for educators.

**Course Objectives**

Upon completion of this course the student will be able to:

1. Describe why it is important for teachers to understand the role of neuroscience in learning.
2. Derive important educational implications from neuroscience on classroom practice.
3. Debunk some of the myths previously held regarding the brain and learning.
4. Recognize the role of emotion in thinking and learning.
5. Connect brain research to evidence-based instructional strategies
6. Recognize the role of assessments and homework in learning
7. Apply the findings from key cognitive research to support the learning needs of a diverse student population.

**Textbooks/Readings**

**Required textbook**


**Tentative schedule- Schedule May Change**

<table>
<thead>
<tr>
<th>Days</th>
<th>Topics</th>
<th>Reading assignments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan 30</td>
<td><strong>Class Overview</strong></td>
<td>Introduction to Course</td>
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<td></td>
<td></td>
<td>How Course Came to Be and Teacher Testimonials</td>
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<td></td>
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<td>Learning and the Brain K/W/L</td>
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<tr>
<td>Feb 6</td>
<td><strong>Why educational Neuro-science for all!</strong></td>
<td>Text: Intro and Chap 1-3 &amp; Reflection</td>
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</table>
In this class, we will discuss why it is important for teachers to understand the science of learning. More specifically, we will discuss the role of educational neuroscience and roles of personal theories of learning.

Feb 13  
**Brain Science 101**
Text: Chapter 4  
Reflection: Chap 4

What do educators need to know about the brain

In this class, we will discuss contemporary brain research and what implications this research may have on the field of education. Then we will examine how brain plasticity affects learning. Finally, we will discuss some hurdles that can challenge learning and explore how to overcome them.

1. Video: Dynamic Skill Development Video (8:43)  
https://www.learner.org/courses/neuroscience/videos/videos.html?dis=U&num=05  
Harvard Professor Kurt Fischer has combined several avenues of research to converge on a model for learning that links neuroscience and implications for classroom instruction—across all disciplines.

Feb 20  
**Evidence-based Teaching Practices**  
Part I  
Text: Chapter 6  
Reflection Chap 6

In the next three classes we will do a deep-dive into brain-informed teaching practices and their implications for student learning.

Feb 27  
**Evidence-based Teaching Practices**  
Part II

Read: Kagan  
https://www.kaganonline.com/catalog/BKCLW_Chapter_1/  

USD SPRING BREAK-MARCH 4-8

March 13  
**Evidence-based Teaching Practices**  
Part III

March 20  
**Making Learning Stick**  
Read: Chapter 8  
Reflection: Chap 8

In this class we will discuss the roles of memory, attention and engagement have on learning. We will discuss a variety of theories and research on how to improve long-term memory.
Video: Teaching Methods for Inspiring the Students of the Future  
https://www.youtube.com/watch?v=UCFg9bcW7Bk  

<table>
<thead>
<tr>
<th>March 27</th>
<th>Emotion and Belief Systems</th>
<th>Lesson Plan Due</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>Text: Chapter 5 &amp; 7</td>
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<tr>
<td></td>
<td></td>
<td>Reflection: Chap 5 &amp; 7</td>
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</table>

In this class we will discuss how personal belief systems may affect learning. We will examine how teachers may assist students in developing a growth mindset. Then we will discuss the relationship between deliberate practice and learning. Finally, we will explore the role that emotions play in cognition and consider how your knowledge in the area can improve students' learning and support students' psychological development.

1. **Video 1- Emotion and Cognition: A Neuroscientist's Perspective**  
https://www.learner.org/courses/neuroscience/text/text.html?dis=U&num=02&sec=06

2. **Video 2 - Beyond wit & grit: Howard Gardner’s ‘8 for 8’**  
https://www.youtube.com/watch?v=vnqWZdcC8AE

3. **Video 3- Carol Dweck,**  
https://www.ted.com/talks/carol_dweck_the_power_of_believing_that_you_can_improve

<table>
<thead>
<tr>
<th>April 3</th>
<th>Assessment 360*</th>
<th>Read: Chapter 9</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>Reflection: Chapter</td>
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</table>

In this class we will discuss how teachers may frame classroom assessments to be more aligned with what we are learning from neuroscience.

<table>
<thead>
<tr>
<th>April 10</th>
<th>Homework: Yes, No, What kind? Technology: A Second Brain</th>
<th>Read: Chapter 10 &amp; 11</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>Reflection: Chap 10 &amp; 11</td>
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</tbody>
</table>

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<tr>
<th>April 17</th>
<th>The Power of the ARTS to Increase Retention</th>
<th>Chapter Reflections Due</th>
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</thead>
</table>

An exploration into the research addressing how the arts may aid in the brain’s ability to retention information.

Read:
April 24

**ONLINE CLASS**

**Different Learners: Different Brains**

In this class, we will consider how people differ in their abilities for attention and working memory, and ways that teachers may help all students learn. Because “normal” depends on context, it makes more sense for teachers to analyze the match between learner and context than to expect everyone to learn in some standardized fashion. Finally, we will discuss how technology may act as a catalyst for learners to access, manipulate and communicate ideas.

Video 1: Temple Grandin: The world needs all kinds of minds.
http://www.ted.com/talks/temple_grandin_the_world_needs_all_kinds_of_minds.html

Temple Grandin, diagnosed with autism as a child, talks about how her mind works— sharing her ability to “think in pictures,” which helps her solve problems that neurotypical brains might miss. She makes the case that the world needs people on the autism spectrum: visual thinkers, pattern thinkers, verbal thinkers, and all kinds of smart geeky kids.

Video 2 and 3: **Choose two of the Five “Success Story” videos**
https://www.learner.org/courses/neuroscience/videos/videos.html?dis=U&num=0 4

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May 1

**Brain Presentation Due**
Share Brain presentations in triads

May 8

Closure: What have we learned?
Create arts-based synthesis of learning
Assessment Plan/Grading Criteria/Rubric

I. Due March 27: Lesson Plan integrating a number of brain-informed teaching practices: Create a lesson plan that integrates one or more brain-informed teaching practices and share that lesson with a group of your peers.

Assessment Rubric for Lesson Plan

<table>
<thead>
<tr>
<th>Lesson Plan</th>
<th>Proficient</th>
<th>Developing</th>
<th>Novice</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Lesson plan integrates two or more brain-informed teaching practices identified in the course.</td>
<td>Lesson plan integrates one brain-informed teaching practice identified in the course.</td>
<td>Lesson plan does not integrate any of the brain-informed teaching practices identified in the course.</td>
</tr>
</tbody>
</table>

II. Chapter Reflections Due April 17: You will keep a journal of your reflections for the assigned Chapters from our textbook, Neuro-Teach and turn them in at the end of the semester. The journal will include two take-aways from each chapter and one question.

Assessment Rubric for Chapter Reflections

<table>
<thead>
<tr>
<th>Chapter Reflections</th>
<th>Proficient</th>
<th>Developing</th>
<th>Novice</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Thoughtfully written and detailed reflections that include at least 2 take-aways from each assigned chapter as well as one added question.</td>
<td>There is at least 1 take-away from each assigned chapter as well as one added question.</td>
<td>There are no take-aways from each assigned chapter.</td>
</tr>
</tbody>
</table>

III. Final Project Due May 1: Create a Presentation Showcasing Connections between Neuroscience and Classroom Practices: 4 points

In each of the preceding topics of the course the reflection prompts have been crafted with the intent to engage you, personally, with the information presented, and how you might apply the information to your classroom teaching. Therefore, for this final project you will have an opportunity of synthesizing what you have learned and move them into you own long-term memory centers. Along with that internal process, at the same time you will be able to create an authentic product that you could share with others. Again, employing the learning principle that, “We learn best what we teach others.”

You will create a presentation of at least 15 slides (Power Point, Keynote or Prezi, or another presentation tool) with a particular audience in mind—students, parents of your students or your teaching peers at your site. Presenter’s notes should be included for each slide, and any appropriate citations added from the text and/or videos and other readings from course.

Through words and graphics, you will describe your new learnings on the role of neuroscience on educational practices, considering such areas as:

- how thinking and memory occurs in the brain.
- how emotions and belief systems affect learning
- why some teaching practices may be more effective than others
- how assessments and homework may help or hinder learning
- why educators need to be mindful of students’ different ways of learning
Note: You have freedom to sequence your slides in any order that makes sense to you and not, necessarily the order mentioned above.

### Assessment Rubric for Presentation

<table>
<thead>
<tr>
<th></th>
<th>Proficient 3</th>
<th>Developing 2</th>
<th>Novice 1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Organization:</strong></td>
<td>Information presented in logical, interesting sequence</td>
<td>Information in logical sequence</td>
<td>Sequence of information may be confusing</td>
</tr>
<tr>
<td><strong>Course Learnings</strong></td>
<td>Showcases at least 3 of the following key aspects of course: how thinking and memory occurs in the brain; how emotions and belief systems affect learning; why some teaching practices may be more effective than others; how assessments and homework may help or hinder learning; why educators need to be mindful of students’ different ways of learning.</td>
<td>Showcases at least two of the following aspects of course: how thinking and memory occurs in the brain; how emotions and belief systems affect learning; why some teaching practices may be more effective than others; how assessments and homework may help or hinder learning; why educators need to be mindful of students’ different ways of learning.</td>
<td>Showcases only a single element of the course: how thinking and memory occurs in the brain; how emotions and belief systems affect learning; why some teaching practices may be more effective than others; how assessments and homework may help or hinder learning; why educators need to be mindful of students’ different ways of learning.</td>
</tr>
<tr>
<td><strong>Citations</strong></td>
<td>Narration includes 3 or more citations from text and/or presentations</td>
<td>Narration includes at least 1-2 citations from text and/or presentations</td>
<td>Narration includes only a single element of the course:</td>
</tr>
<tr>
<td><strong>Screen Design</strong></td>
<td>Includes a wide variety of graphics and text that exhibits a sense of wholeness.</td>
<td>Includes some variety of graphics and text</td>
<td>No graphics are evident in presentation</td>
</tr>
</tbody>
</table>
## COURSE GRADE SHEET
### EDTE 303/503

<table>
<thead>
<tr>
<th>Area</th>
<th>Total Possible Points</th>
<th>Your Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Chapter Reflections</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>II. Lesson Plan</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>III. Brain-focused Presentation</td>
<td>4</td>
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**TOTAL POINTS______**  **FINAL GRADE_______**

10 = A
9 = A- = B-
8 = B+ = C
Below 5 = Consultation with instructor—may result in D, F or I

### Requests for Accommodation

Reasonable accommodations in accordance with the Americans with Disabilities Act will be made for course participants with disabilities who require specific instructional and testing modifications. Students with such requirements must identify themselves to the University of San Diego Disability Services Office (619.260.4655) before the beginning of the course. Every effort will be made to accommodate students’ needs; however, performance standards for the course will not be modified in considering specific accommodations.

### Grade of Incomplete:

The grade of Incomplete (“I”) may be recorded to indicate (1) that the requirements of a course have been substantially completed but, for a legitimate reason, a small fraction of the work remains to be completed, and, (2) that the record of the student in the course justifies the expectation that he or she will complete the work and obtain the passing grade by the deadline. It is the student’s responsibility to explain to the instructor the reasons for non-completion of work and to request an incomplete grade prior to the posting of final grades. Students who receive a grade of incomplete must submit all missing work no later than the end of the tenth week of the next regular semester, otherwise the “I” grade will become a permanent “F.”

A petition for a grade of incomplete must accompany all requests for an incomplete at the end of the course term. Criteria for changing a grade of incomplete to a letter grade must be negotiated with the instructor before the final class. The criteria must be outlined on the signed Incomplete Request Form. A completed form with both the instructor and student signature must be turned in by the last session of the class. Without a student signed form the registrar requires assignment of a grade of F. A student must complete an incomplete by the 10th week of the next session or a grade of F is permanently calculated in the overall grade point average. Any attempts to complete an incomplete after the 10-week deadline requires the approval of the Associate Dean of the School of Education.

### Academic Integrity
All members of the University community share the responsibility for maintaining an environment of academic integrity since academic dishonesty is a threat to the University. Acts of academic dishonesty include: a) unauthorized assistance on an examination; b) falsification or invention of data; c) unauthorized collaboration on an academic exercise; d) plagiarism; e) misappropriation of resource materials; f) any unauthorized access of an instructor’s files or computer account; or g) any other serious violation of academic integrity as established by the instructor.

Statement on Plagiarism
Students are responsible for knowing what plagiarism is and avoiding it. Students who commit plagiarism are subject to penalties that may include suspension or expulsion from the university. Plagiarism occurs when individuals present the words and/or ideas of others as if they are their own. To avoid plagiarism, you must give credit to your source whenever you use:
- another person’s idea, opinion, or theory;
- any facts, statistics, graphs, drawings—any pieces of information—that are not common knowledge;
- quotations of another person’s actual spoken or written words; or
- a paraphrase of another person’s spoken or written words.
If you wish more information on what plagiarism is and how to avoid it please see http://www.indiana.edu/~wts/pamphlets/plagiarism.shtml. (The bulleted material above is from this website.)

SOLES On-line Course Evaluation
Student evaluations in SOLES are collected via an on-line system that maintains student anonymity. SOLES uses these evaluations for continuous improvement of course content and instruction and as a component of its regular performance review of faculty members, so please take them seriously. Course evaluations are available to students in their MySanDiego accounts via the Active Registration link on the One-Stop Services tab. Your instructor will provide you with instructions on how to access the evaluations once they are activated near the scheduled conclusion of your course.