PSYC 4803
COGNITIVE NEUROPSYCHOLOGY
SPRING 2012

Division of Behavioral Sciences
Instructor: Arvin Oke
Office Metz- 229, ext 3616
Hours: By appointment

Tues-Thurs 10:45 – 12:00
Credit: 3 hr


PURPOSE: To acquaint the student with the field of cognitive neuropsychology. Prereq.: Psyc 1103 & 2503 & Jr. or Sr. standing.

COURSE OBJECTIVES: Upon completion of this course students will be able to:
1. Identify, discuss, & understand the general principles of cognitive neuropsychology as it applies to human behavior - including how research methodology plays a crucial role in the formulation of concepts.
2. Discuss the brains involvement in such behaviors as judgments, planning, memory, and social capabilities.
3. Describe the various processes by which sensory input (like vision) is transformed, reduced, elaborated, stored, recovered, & put to use.
4. Understand how anatomical brain structures relate to various cognitive functions and how the impact of brain tissue loss compromises these functions.
5. To become familiar with gaining information from journal articles.
6. To learn to interpret understandings from graphs and figures.

COURSE REQUIREMENTS:
A) **Oral presentations:** You will be expected to give an oral presentation to the class. You will select the topics from a listing of topics with beginning source material. Each presentation will be valued as 50 points. Class members will rate the presentation according to the rubric provided, at a rated value of 25 points. The class average will finalize the score for the presentation. The professor will also rate the presentation from a different rubric also valued at 25 points. Student ratings will be based on: 1. clarity; 2. coherency; 3. delivery, and 4. effective visual aids. Professor rating will be based on: 1. accuracy of material, 2. completeness of material, 3. breadth of knowledge, 4. proper selection of material, 5. knowledge of peripheral material not included in presentation (such as specifics on subjects used, procedures utilized, etc.). These should be known and available during Q & A. You will be responsible for information from your presented topic in future presentations that relate to it. Your inability to remember your topics material or conclusions could result in a loss of points at the discretion of the instructor.
B) **Paper** You will be responsible to write an approximate 8 page paper that is from the oral presentation list. The paper must use a minimum of 3 current (2003 or newer) references (not on the internet). Source material provided must be part of the paper as well as the 3 other sources. Articles found through inter-library loans sometimes take awhile to receive so you will need to plan ahead. Attach a copy of the journal abstract from each journal article you use. The paper will be worth 50 points and will be graded according to the following. It will be due on Thur. April 26.

**Paper requirements summary:**
- APA Style & references 10%
- Grammar & flow of paper 30%
- Content 60%

C) **Exam.** A final take-home exam worth 75 points will be given. This exam will consist of questions dealing with information obtained from lecture and presentations given. Most questions on this test will require you to give short answers to a brain image picture. Therefore, you will probably benefit from taking good notes both from lecture content and presentation content. Asking questions of clarification to the presenter will be helpful in this regard. The degree of clarity from the presentation is part of your evaluation. You should make your oral presentation evaluation accordingly. These questions will be taken home (April 26) and answered using your textbook and notes. They will be handed in at the time of the scheduled final exam for this class (noon, May 3).

**COURSE ORGANIZATION**
This course will have both lecture and seminar components. The first portion of the semester (approximately ½) will be lecture material by the instructor. The second half of the semester will consist of student presentations and supplementary material from the instructor.

**GRADE DETERMINATION**
Grades for the course will be determined by a percentage of the highest score in the class—according to the following scale:

- 90% or greater A
- 80 – 89 % B
- 60 – 79 % C
- 50 – 59 % D

**SPECIAL NEEDS:** Students needing special accommodations for this class should notify the professor during the first two weeks of the course.
Oral Presentation Topics

The material below is largely based on the organization from the review article by Ralph Adolphs listed below. Each class member should be responsible for it’s contents:


SOCIAL AWARENESS: Perception of social signals

A. Is the brain involved in detecting subtle facial movements and expressions?

Source material:


B. Does the brain interpret animated motions as having intentions?

Source material:


SOCIAL AWARENESS: From social perception to social judgment.

C. Amygdala and emotional facial expressions: is it fear only or more than fear?

Source material:

2. Increased amygdala activation to averted versus direct gaze in humans is independent of valence of facial expression. Straube, T., et.al., Neuroimage, 2010, 49, 2680.
D. Does the amygdala tell us who to trust?

Source material:


E. Does the amygdala show race bias?

Source material:


F. Can the amygdala show re-appraisal by conscious effort?

Source material:


THE EMOTIONAL BRAIN

G. The insula: a detector of anticipatory anxiety.

Source material:

2. Anticipation of aversive visual stimuli is associated with increased insula activation in anxiety-prone subjects. Simmons, A. et.al., Biological Psychiatry, 2006, 60, 402.

H. The insula: Do certain individuals have a heightened sensitivity to body sensations and therefore anxiety disorders?

Source material:

I. The anterior cingulate cortex: Does the brain feel social pain or the pain of another?

Source material:


J. The orbitofrontal cortex: shifting from good sensations to bad.

Source material:


THE EMOTIONAL BRAIN: ROMANTIC LOVE

K. How the brain differs with respect to early stage intense passion vs later stage love.

Source material:

2. Temporal changes in functional magnetic resonance imaging activation of heterosexual couples for visual stimuli of loved partners. Kim, W., et.al., Psychiatry Investigation, 2009, 6, 19.

L. Oxytocin & caring love

Source material: oxytocin and trustworthiness evaluation


Source material: oxytocin and positive physical contact with a partner

oxytocin alters amygdala activity


THE SELF IN THE BRAIN

Source material for all subsections:


M. Evaluative judgments and knowledge of other persons compared to objects.

Source material:


N. Self-traits compared to others-traits & self-relevant experiences compared to other’s experiences.

Source material:


O. Does the brain process in different regions traits of self, traits of a very close friend, or traits of a famous person, or traits of a not so close acquaintance?

Source material:

# ORAL PRESENTATION RUBRIC
## STUDENT EVALUATION FORM

## CLARITY OF PRESENTATION

<table>
<thead>
<tr>
<th>Points</th>
<th>Evaluation (check one)</th>
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<tbody>
<tr>
<td>5</td>
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<td>9</td>
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<td>10</td>
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</table>

- Material presented much too rapidly
- Material not presented clearly
- I had little understanding of the material
- Material presented a little too rapidly
- Material presented clearly
- I only had fair understanding of material
- Material presented slow enough that I understood
- Phrases or words used only those informed would know
- I understood most of material presented
- Presented so clearly that I can even now repeat almost all issues of talk

**Comments:**

## COHERENCY OF THE PRESENTATION

<table>
<thead>
<tr>
<th>Points</th>
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<td>4</td>
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<td>5</td>
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- Presenter sometimes jumped from 1 item to another and then back again
- Difficulty keeping track of critical information (ie)
  - brain area talked about
  - methods used
  - what study was being referred to
- I could follow along with most of the critical information but occasionally there were areas of confusion.
- Critical information such as those mentioned above remained clear even when there was a change in topic area.

**Comment:**
**PRESENTATION DELIVERY**

<table>
<thead>
<tr>
<th>Points</th>
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</thead>
</table>
| 1      | • Evidence of poor grammar and/or sentence structuring  
         • Scientific words poorly pronounced or mumbled |
| 3      | • Usage of grammar made idea unclear  
         • Unfamiliar terms were not explained or clarified. |
| 5      | • Good grammar and proper word pronunciation throughout  
         • All new scientific words explained or clarified |

**COMMENTS:**

**VISUAL AIDS USED IN THE PRESENTATION**

<table>
<thead>
<tr>
<th>Points</th>
<th>(check one)</th>
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</table>
| 1      | • Entire presentation read from script or power point  
         • No visual aids used |
| 2      | • Power point had far too much reading  
         • Difficult to follow  
         • Some visual aids but not enough |
| 3      | • Some visual text but did not always correspond with what presenter was saying  
         • Some visual aids but some did not always clarify what was being presented |
| 4      | • Some effective visual aids  
         • Short meaningful power point phrases used instead of text |
| 5      | • All visual aids were effective  
         • Short meaningful power point phrases corresponded with spoken presentation |

**Comment:**
<table>
<thead>
<tr>
<th>INTEGRATION OF MATERIAL</th>
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ORAL PRESENTATION RUBRIC

Professor Evaluation

<table>
<thead>
<tr>
<th>Presentation Areas</th>
<th>Possible Points</th>
<th>Points given by evaluator</th>
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</thead>
<tbody>
<tr>
<td>Accuracy of material presented</td>
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<tr>
<td>1. Did the presenter show knowledge of the material?</td>
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<td>2. Did the presenter show confusion with the material?</td>
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<tr>
<td>Inclusion of necessary material</td>
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<tr>
<td>1. In the time allotted, did the presenter include material available that gave an adequate understanding of the topic?</td>
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<tr>
<td>2. Did the presenter include fundamental ideas of required readings?</td>
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<td>Evidence of knowledge of the topic beyond that given in presentation</td>
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<tr>
<td>1. from Q &amp; A</td>
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<tr>
<td>2. from comments in passing</td>
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<tr>
<td>Selection of material presented</td>
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<tr>
<td>1. Was the material chosen for presentation central to the assignment of the topic?</td>
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<td>2</td>
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<tr>
<td>2. Did the presenter choose a topic that was far afield from the area he was to present?</td>
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<tr>
<td>Clarity on material peripheral to central topic</td>
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<tr>
<td>1. Presenter included material that should belong to another brain area but confused it with their own area.</td>
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<td>3</td>
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<tr>
<td>2. Presenter added relationships that did not belong to the topic.</td>
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<tr>
<td>3. Presenter failed to give proper ownership to an author by claiming an idea as their own</td>
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<tr>
<td>TOTAL POINTS</td>
<td>25</td>
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a) 5 point evaluation rating: 5 = excellent; 4 = good; 3 = average; 2 = fair; 1 = poor; 0 = unsatisfactory

COMMENTS