ADVANCED TOPICS IN COGNITIVE NEUROSCIENCE: LANGUAGE, READING & COGNITION,
SPRING 2014
26:830:512
Tuesdays & Thursdays, 2:30 – 3:50 pm, Smith 371A (Fishbowl)

Office Hours: Tuesdays 4 – 5:30, or by appointment. 337 Smith Hall. The best way to reach me is by email (william.graves@rutgers.edu) or in person right after class.

Course Overview: This graduate course offers students a chance to delve deeply into several aspects of the cognitive neuroscience literature on language and reading. Topics are presented in a globally sequential manner. Before one can speak or read about a concept, it must first be presented to the senses. Hence we start with object recognition. Once perceived, ideas related to the object can then be retrieved. This step includes semantic processing. What happens next depends on whether the object is, for example, a picture, word, or group of words. Along the way, we will consider variations on these processes, such as what happens when they fail.

Learning Objectives: Upon successful completion of this course, students should be able to
• Identify tractable research topics related to the cognitive neuroscience of language
• Develop a research proposal from initial topic through to a final draft
• Perform constructive peer review on scientific proposals
• Respond to and incorporate peer reviews into a research proposal
• Critically evaluate hypotheses and theoretical models in the cognitive neuroscience of language with respect to experimental results

Course Website: The current version of the syllabus and the readings will be available on Blackboard, http://blackboard.newark.rutgers.edu.

Course Requirements:
(1) In each class session (excepting the first), a student will present and lead discussion of the assigned article. This does not mean that student must talk the entire time. Rather, he or she will, for example, elicit questions from the other students and seek clarification where needed. Students NOT leading the discussion must submit at least one discussion topic or question on the reading by email to the discussion leader and copy to william.graves@rutgers.edu. This must be done by 11:59 PM on the day before class.
(2) Class participation will be weighted heavily. At minimum you must be present to participate in discussions, so attendance is mandatory. The best way to prepare for discussion is to read the article to be presented. To get the most out of this course, we will need insightful, cooperative discussion.
(3) The final project will be an NIH (National Institutes of Health) NRSA (National Research Service Award)-style grant application. This was selected to be maximally relevant to actual scientific career skills. It will be due in stages according to the schedule below, and can be related to any topic covered in the course.

Assessment:
Your final grade will be calculated as follows:
Discussion topic/question email 10%
Class attendance 10%
Contribution to class discussion 10%

Total participation: 30%

**NRSA-style grant:**

<table>
<thead>
<tr>
<th>Specific aims</th>
<th>Rough aims, 2/11; Final aims, 2/27</th>
</tr>
</thead>
<tbody>
<tr>
<td>First draft</td>
<td>Monday, 3/24, 9 am</td>
</tr>
<tr>
<td>Two peer reviews</td>
<td>Monday, 4/14, 9 am</td>
</tr>
<tr>
<td>Class presentation</td>
<td>Thursday, 5/1, in class</td>
</tr>
<tr>
<td>Response to reviews</td>
<td>Thursday, 5/8, 5 pm</td>
</tr>
<tr>
<td>Final draft</td>
<td>Thursday, 5/8, 5 pm</td>
</tr>
</tbody>
</table>

Total project: 70%

**Grading scale:**

A: 100-90  B+: 89-86  B: 85-80  C+: 79-76  C: 75-70  D: 69-62

**Academic Integrity:**

Students are expected to **do your own work at all times**. Those caught cheating, or who give the appearance of cheating, will be dismissed from class. The University and I take cheating very seriously. Students caught cheating may be suspended or expelled. To help you avoid this situation, please familiarize yourself with the University policy on academic integrity outlined here: [http://academicintegrity.rutgers.edu](http://academicintegrity.rutgers.edu).

**Notes:**

- The deadline to drop a course without penalty is **January 30, 2014**.
- The deadline to withdraw from a course with a W grade is **March 31, 2014**.
- If you need accommodation for a learning disability, I will need to see an official Letter of Accommodation from Disability Services ([http://robeson.rutgers.edu/studentlife/disability.html](http://robeson.rutgers.edu/studentlife/disability.html)). This helps me know the best way to help you.

**Schedule of Topics and Readings**

**Jan 23**  **Introductions and course overview**

**28**  **Object Recognition (1)**

**Background reading:**


**To present:**


**30**  **Object Recognition (2)**

**Background reading:**

To present:


<table>
<thead>
<tr>
<th>Date</th>
<th>Subject</th>
<th>Background Reading</th>
<th>To Present</th>
</tr>
</thead>
</table>
To present:

25 Object/Picture Naming (2)
Background reading:
To present:

NOTE: Final specific aims due in class

27 Phonological Processing
Background reading:
To present:

Mar 4 Orthographic Processing
Background reading:
To present:

6 Word Recognition
Background reading:
To present:

11 Reading Aloud/Word Naming (1)
Background reading:
To present:

13 **Reading Aloud/Word Naming (2)**

Background reading:
To present:

18 & 20, No Class, Spring Recess

**NOTE:** First draft of project due Monday, Mar 24, 9 am

25 **Linguistics (1)**

Background reading:
To present:

27 **Linguistics (2)**

Background reading:
To present:

**Apr** 1 **Aphasia (1)**

Background reading:
To present:

3 **Aphasia (2)**

Background reading:
To present:
8 No Class, CNS Meeting

10 Conceptual Combination
Background reading:
To present:

NOTE: Peer reviews due Monday, Apr 14, 9 am

15 Sentence Processing (1)
Background reading:
To present:

17 Sentence Processing (2)
Background reading:
To present:

22 Discourse Processing
Background reading:
To present:

24 Non-literal Language Processing
Background reading:
To present:
29 Bilingualism

Background reading:

To present:

May 1 Class Presentations

Final Project/Response to Reviews due: Thursday, May 8, 5 pm