Course Information

- **Class meetings:**
  Tuesdays and Thursdays 12:30 PM - 1:50 PM
  Steinhaus Hall (SH) Rm 134

- **Course website:**
  [https://eee.uci.edu/16w/05967](https://eee.uci.edu/16w/05967)

- **Instructor:**
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- **Teaching Assistant:**
  Maria Montchal
  mmontcha@uci.edu | 4-0314

- **Office hours are by appointment**

Course Syllabus

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
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<tbody>
<tr>
<td>1/05/2015</td>
<td>Introduction, class goals, learning techniques</td>
</tr>
<tr>
<td>1/07/2015</td>
<td>NO CLASS</td>
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<tr>
<td>1/12/2015</td>
<td>Review of nervous system structure and function</td>
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<tr>
<td>1/14/2015</td>
<td>Review of neurophysiology, neurochemistry, and imaging techniques</td>
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<tr>
<td>1/19/2015</td>
<td>Neuropsychological Assessment, ethical issues, diagnosis and treatment</td>
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<tr>
<td>1/21/2015</td>
<td>Exam 1</td>
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<tr>
<td>1/26/2015</td>
<td>Laterality, asymmetry, and hemispheric disconnection</td>
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<tr>
<td>1/28/2015</td>
<td>Overview of functional neuroanatomy</td>
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<tr>
<td>2/02/2015</td>
<td>Vision and audition</td>
</tr>
<tr>
<td>2/04/2015</td>
<td>Somatosensory and motor control</td>
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<td>2/9/2015</td>
<td>Learning and memory</td>
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<tr>
<td>2/11/2015</td>
<td>Speech and language</td>
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<td>2/16/2015</td>
<td>Exam 2</td>
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<tr>
<td>2/18/2015</td>
<td>Personality, decision making and social behavior</td>
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<tr>
<td>2/23/2015</td>
<td>Drug addiction and Mood disorders</td>
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<tr>
<td>2/25/2015</td>
<td>Development and aging</td>
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<tr>
<td>3/01/2015</td>
<td>Psychopathologies I: schizophrenia</td>
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<td>3/03/2015</td>
<td>Psychopathologies II: antisocial personality and psychopathy</td>
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<tr>
<td>3/08/2015</td>
<td>Review Session</td>
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<tr>
<td>3/10/2015</td>
<td>Exam 3</td>
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Readings and attendance policies

- Readings will be assigned for each topic and uploaded to the website before the corresponding lectures.
- Readings are important as background information and will significantly contribute to your understanding of the material.
- You will NOT be tested on information that is only in the readings and not discussed in class.
- Attendance is mandatory and is the only way to do well in this course. Exams will be exclusively based on content presented and discussed during lectures (not just slides).
- Mini quizzes will be administered at the beginning of lectures. If you arrive late, you will NOT be allowed to take the quiz and will receive a zero grade for it.

Grading requirements

- Three multiple-choice, non-cumulative exams (NO FINAL)
  - Exam 1 - 25% of your grade
  - Exam 2 - 35% of your grade
  - Exam 3 - 35% of your grade

Exams are noncumulative, however, later parts of the course will naturally build on content from the beginning of the course, thus reviewing and remembering concepts from earlier in the course should help during study.

- Mini quizzes at the beginning of lectures (total 5%)
- Final grades are assigned as:
  - >90% A, >80% B, >70% C, >60% D, <59% F

Questions

Questions and in-class discussion are strongly encouraged.
Learning objectives

- To understand **functional neuroanatomy** of the human brain through the lens of brain disorders.
- To understand the major approaches in neuropsychology **research and clinical practice** including neurological and neuropsychological assessment techniques.
- To understand **clinical and ethical issues** in human neuropsychology including diagnosis and treatment, as well as challenges to our current theory and methods.

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**Optimizing Your Own Learning!**

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Repetition enhances learning - doh!

- Study word lists and test retrieval accuracy and reaction time

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[Graphs showing the relationship between practice trials and reaction time, with curves indicating diminishing returns.]
Repetition does not mean learning!

What are you thinking about each time you use these interfaces?
- Not the locations of the letters!
- Not well encoded, despite massive repetition.

Deeper encoding - better memory!

This is why elaboration and making more associations leads to better memory.
- Termed the “Levels of Processing” (LOP) or depth of encoding effect.

Mental imagery
- Mental images help you encode new information
- Interactions
- Generating a novel or personal association
- Unique (but not too bizarre) association
Pre-existing information - schema

- Memories are better encoded if you can relate them to existing information.

How well could you remember this configuration?

Reconstruction of chess boards after 5 seconds viewing

DeGroot, 1965

The “Testing Effect”

- Learning prose passages from the TOEFL test

Rowe and Karpicke, 2006

Spaced practice effect

- Fewer sessions required

Ebbinghaus (1885)
Spaced practice effects

- Bahrick and Phelps (1987)
- Study 50 Spanish vocabulary words and test 8 yrs later

Immediate 1 day 30 days

Spacing of study sessions (total 7 sessions)

Immediate 1 day 30 days

Spacing of study sessions (total 7 sessions)

Primacy and recency effects

- Also known as the serial position effect
- Overcome this by not always starting and stopping at the same place!

Take home messages

- Use tests as opportunities for retrieval practice. For each topic make your own “exam questions” and use them to test yourself (i.e. to study).
- Space your practice! (Do not cram! It doesn't work)
- Be aware of recency and primacy effects and do not let the same material always end up in the middle.
- Use elaborative rehearsal. Create new associations, make it personal, associate it with pre-existing knowledge. The more cues you can create while you study, the more avenues to retrieval you will have.
<table>
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<tr>
<th>Date</th>
<th>Event</th>
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<tbody>
<tr>
<td>1/21/2016</td>
<td>Exam 1</td>
</tr>
<tr>
<td>2/16/2016</td>
<td>Exam 2</td>
</tr>
<tr>
<td>3/10/2016</td>
<td>Exam 3</td>
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<tr>
<td>1/7/2016 (next lecture)</td>
<td>NO CLASS!</td>
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