Introduction to the Course and Syllabus
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:**
  Michael A. Yassa, Ph.D.
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- **Teaching Assistant:**
  Maria Montchal
  [mmontcha@uci.edu](mailto:mmontcha@uci.edu) | 4-0314

- Office hours are by appointment
<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
</tr>
</thead>
<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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<tr>
<td>2/09/2015</td>
<td>Learning and memory</td>
</tr>
<tr>
<td>2/11/2015</td>
<td>Speech and language</td>
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<tr>
<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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<tr>
<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 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.
Optimizing Your Own Learning!

Human Neuropsychology
Bio Sci N173 / Psych 163C / Psy Beh 162N

Michael A. Yassa
Lecture 1B
Repetition enhances learning - doh!

• Study word lists and test retrieval accuracy and reaction time

Anderson, 1981
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!

- **Shallow**: Upper or lower case?
- **Intermediate**: Does the word rhyme with mat?
- **Deep**: Does the word fit into the sentence, “The man ate his ____”?

This is why elaboration and making more associations leads to better memory.

Termed the “Levels of Processing” (LOP) or depth of encoding effect.

Craik and Tulving, 1975
Mental imagery

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

# Correctly Placed

0 5 10 15 20

Actual Random

Knight’s gambit

DeGroot, 1965
The “Testing Effect”

- Learning prose passages from the TOEFL test

Roediger and Karpicke (2006)
Spaced practice effect

Initial Study Session → Variable Gap → Restudy (or Test) of the same material

Final Test on Material

Ebbinghaus (1885)

<table>
<thead>
<tr>
<th>Interval</th>
<th># Study Sessions Required</th>
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<tbody>
<tr>
<td>1 day</td>
<td>68</td>
</tr>
<tr>
<td>3 days</td>
<td>38</td>
</tr>
</tbody>
</table>

Keppel (1967)

<table>
<thead>
<tr>
<th>Distribution</th>
<th># Pairs Recalled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Massed</td>
<td>5.9</td>
</tr>
<tr>
<td>Distributed</td>
<td>5.5</td>
</tr>
<tr>
<td>Massed</td>
<td>2.1</td>
</tr>
<tr>
<td>Distributed</td>
<td>5.0</td>
</tr>
</tbody>
</table>

Fewer sessions required!
Spaced practice effects

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

![Graph showing the effects of spaced practice on word recall and test performance.](image)
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.
Remember these dates

- 1/21/2016  Exam 1
- 2/16/2016  Exam 2
- 3/10/2016  Exam 3
- 1/7/2016 (next lecture)  NO CLASS!