The Neurophysiological Basis of Alternate States of Consciousness

MWF 9:00-9:50 CENTR 214

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Course Description and Goals:
This course provides an introduction to theory and research on normal and altered states of consciousness, primarily from a cognitive neuroscience perspective. By the end of the course, students should be familiar with the definitions and physiological basis of alternate states of consciousness, what brain areas, systems, and processes mediate them. Students will gain an understanding of how drugs affect these states of mind. They will also learn about the role of sleep and dreams, applications and effects of hypnosis, biofeedback, sensory deprivation, meditation, theory of mind, and the neural basis of non-self centered experiences such as dissociations and split brain.

Methods of Evaluation
Students are expected to attend all lectures, complete all assigned homework and exams, participate in discussions, work in groups and deliver a group presentation to the class. The breakdown of the final grade is listed in the table below. No work is accepted late unless there is either prior approval of the instructor/TA or documented proof of emergency and contact with the instructor as soon as possible. There are no make-ups or extra credit projects. All grading is done out of a number of total points, and final letter grades are based on a student’s performance compared to the rest of the class (i.e. z-score—the number of standard deviations above or below the total mean score).

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<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Midterm exams (2)</td>
<td>25%</td>
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<tr>
<td>Group presentation</td>
<td>20%</td>
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<tr>
<td>Final exam</td>
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<tr>
<td>Homework</td>
<td>25%</td>
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Midterm Exams. There will be two midterm exams. The purpose of these exams is to assess your learning of course material up to that point. Exams consist primarily of essay questions. Lecture, textbook, and journal articles are all covered. The exams are not cumulative, i.e., each will not specifically test material covered in previous exams, although some overlap is inevitable. You may refer only to the contents of your mind for these exams (closed-book, closed-notes).
Final Exam will be comprehensive, including questions based on student presentations. Exam consists primarily of essay questions. Lecture, textbook, journal articles, and student presentations are all covered. You may refer only to the contents of your mind for this exam (closed-book, closed-notes).

Homework. You will be assigned to a group (of 3-4 students) to work on homework assignments. Each week groups are required to turn in a one-half page critical analysis of each of the assigned articles for that week. It is expected that the group will discuss the papers and work on the critical analyses together.

Group Presentations are made on course-relevant topics, subject to instructor approval, during the last two weeks of class. Each group will have 15 minutes to present, followed by questions, both strictly timed. You must earn final approval no later than the end of 5th week, so propose a topic as soon as possible. This way, you can use feedback to revise your topic and stake a claim so another group doesn't take "your" topic first! Presentation outlines are due at the end of 7th week. The order of group presentations will be determined by random lottery. Immediately after presenting, each group must turn in a CD of their PowerPoint presentation. Presentations are scored by group, not individuals, so it is important to work together and, if you have problems with your group, to notify the instructor/TA as soon as possible. More information on presentations (e.g. suggested topics, tips for research and presenting) is available on the course website. Students who choose not to do a group presentation or are unable to due to class size are required to turn in a term paper at the end of the quarter.

Academic Integrity:
Academic integrity is expected at all times and cheating will not be tolerated. You are encouraged to study and confer with your classmates, but exams must be completed alone. Graded exams will be photocopied before being returned. Plagiarism and the changing of answers on returned exams will result in automatic failure of the course. For more information see: [http://www-senate.ucsd.edu/manual/appendices/app2.htm](http://www-senate.ucsd.edu/manual/appendices/app2.htm)

Required Reading and Textbook
1. Journal articles can be downloaded as individual pdf files from the class website in the Readings link. Contact Instructor/TA if you are having problems downloading files.

Class Website
[http://bci.ucsd.edu/~pineda/COGS175/index.html](http://bci.ucsd.edu/~pineda/COGS175/index.html)
Course Schedule

Week 1 (1/7-1/11)  *Physiology of states of mind: Definitions*  Textbook Ch1, Ch2


Week 2 (1/14-1/18)  *Drugs and the mind: Why do we take them?*  Textbook Ch 3


Week 3 (1/21-1/25)  *Hypnosis: Can we lose control?*  Textbook Ch 4


Week 4 (1/28-2/1)  *Neurofeedback: How much control do we have?*  Textbook Ch5


MIDTERM 1  *February 4th in class*

Week 5 (2/4-2/8)  *Meditation: Different from a relaxed state?*  Textbook Ch 6


Lazar, S. W. et al. Meditation experience is associated with increased cortical thickness. NeuroReport, 16(17), 1893-1897, 2005.

**Week 6  (2/11-2/15)  **  *Sleep and Dreams: Are they necessary?* Textbook Ch 7


**Week 7  (2/18-2/22)  **  *Social Cognition: Understanding Others*


**Week 8  (2/25-2/29)  **  *Split brain – split mind?*


**MIDTERM 2  **  *February 29th in class*

Week 9  (3/3-3/7)  *Student presentations*

Week 10  (3/10-3/14)  *Student presentations*

**FINAL EXAM  ** March 19th  8-11 am in class