Psyc 233: Electroencephalography
Mondays 1-4pm

Instructor: ***Barry Giesbrecht***
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Office Hours: Wed 2-4

Class website: http://mentor.lscf.ucsb.edu/course/spring/psyc233/

Course description: This course will introduce students to the neural basis, methods of acquisition, analysis, experimental design and interpretation of electroencephalographic data. Emphasis will be placed on the event-related potential technique.

Course format: Each class will be divided into two sections. One section will consist of lecture/discussion of topics related to the neural basis of EEG, recording and interpretation, experimental design, analysis, and integration with other measures of neural activity. The second section will consist of a lab component, where data will be collected and analyzed.

***Readings*:** Readings will consist of chapters and articles selected by the instructor. All will be made available as PDFs on the class website:
http://mentor.lscf.ucsb.edu/course/spring/psyc233/

Evaluation: Students will be evaluated on a written assignment and an oral presentation.

Written assignment. The writing assignment will consist of a short NRSA-type grant in which the student will propose an EEG/ERP experiment relevant to their own research.

Presentation. Prior to submitting the written assignment, each student will give a short SFN-type slide presentation of their proposed experiment. This will provide the student with the opportunity to get feedback on his or her idea before submitting the written assignment.

Tentative Schedule of Topics:

March 31

Overview & Goals

April 7

Discussion Topic: EEG/ERP and it's neural basis. Experimental design & interpretation

Laboratory Topic: Working with Matlab, EEGLAB, and data files

April 14 No Class (CNS)

April 21

Discussion Topic: Recording EEG & dealing with artifacts

Laboratory Topic: Recording & Analysis

April 28

Discussion Topic: Analysis of ERPs

Laboratory Topic: Recording, Extracting & quantifying ERPs

May 5

Discussion Topic: Alternative approaches to analyzing EEG data

Laboratory Topic: Analysis

May 12 No Class (VSS)

May 19

Discussion Topic: Approaches to localization & combining with fMRI

Laboratory Topic: source localization

May 26 No Class (Memorial Day)

June 2:

Student presentations