Course Bulletin Listing/Subject Area	Psychology
Fiscal Unit/Academic Org	Psychology - D0766
College/Academic Group	Social And Behavioral Sciences
Level/Career	Graduate, Undergraduate
Course Number/Catalog	5621
Course Title	Introduction to Event Related Potentials
Transcript Abbreviation	INTRO TO THE ERP
Course Description	Training to become an independent event-related-potential researcher. Develop skills in experimental programming, application of electrode nets, artifact detection, filtering and component analysis and localization.
Semester Credit Hours/Units	Fixed: 3

Offering Information

Length Of Course	14 Week, 7 Week, 4 Week (May Session), 12 Week (May + Summer)
Flexibly Scheduled Course	Never
Does any section of this course have a distance education component?	No
Grading Basis	Letter Grade
Repeatable	No
Course Components	Lecture
Grade Roster Component	Lecture
Credit Available by Exam	No
Admission Condition Course	No
Off Campus	Never
Campus of Offering	Columbus, Lima, Mansfield, Marion, Newark

Prerequisites and Exclusions

Prerequisites/Corequisites	Permission of instructor
Exclusions	

Cross-Listings

Cross-Listings	

Subject/CIP Code

Subject/CIP Code	42.0301
Subsidy Level	Doctoral Course
Intended Rank	Junior, Masters, Senior, Doctoral

Quarters to Semesters

Quarters to Semesters	New course
Give a rationale statement explaining the purpose of the new course	Research involving event-related potentials are important in cognitive and clinical neuroscience. There is currently no course providing adequate foundations in such techniques and their application at OSU.
Sought concurrence from the following Fiscal Units or College	

Requirement/Elective Designation

The course is an elective (for this or other units) or is a service course for other units

Course Details

Course goals or learning objectives/outcomes

Content Topic List

- Event-related potentials (ERPs) and their neural origins
- Design and interpretation of ERP experiments
- Principles of ERP recording

Attachments

- Psych 5621.pdf: Syllabus

(Syllabus. Owner: Vasey,Michael William)

Comments

Workflow Information

Status	User(s)	Date/Time	Step
Submitted	Paulsen,Alisa Marie	01/21/2011 12:35 PM	Submitted for Approval
Approved	Vasey,Michael William	01/21/2011 04:07 PM	Unit Approval
Pending Approval	Mumy,Gene Elwood Selby,Erin Faye Vanarsdale,Sonya Renee	01/21/2011 04:07 PM	College Approval

Current Course Number: PSYCH 695.04 NEW COURSE NUMBER

Course Name: Introduction to Event Related Potentials

Current Credit Hours: 5

Semester Credit Hours: 3

Instructor: Recently taught by Dr. Dennis (Psychology)

Offered: Typically offered every other year depending on faculty schedules.

Enrollment: 8-16 graduates

Course Changes for Semester Conversion

The original course meets twice a week for ten weeks with 2.5 hour classes; The semester course will meet twice a week for fourteen weeks, with 1.5 hour classes.

Additional Content:

Introduction to Event related Potentials was taught for the first time in spring 2010. It involves the development of a number of skills both in programming and in the application of the electrode cap. As such it will benefit from the move to semesters as it will mean that there will be additional sessions in which to develop these skills. Note also that this course has been taught under the 695.04 code, which has a broad course title. We would like this course to have its own more specific title.

25-word Summary (for the Catalog):
Training to become an independent event-related-potential researcher. Develop skills in experimental programming, application of electrode nets, artifact detection, filtering and component analysis and localization.

NEW

Introduction to Event Related Potentials

Course Code:	PSYCHOLOGY XXX	Quarter:	XXX
Time:	XXX	Place:	XXX
CallNumber:	XXX		

Instructor:	Dr. Simon Dennis	Office:	200E Lazenby Hall
Phone:	292-2229	E-mail:	dennis.210@osu.edu
Office Hrs:	XXX; Other times by appointment.		

Required Text: Luck, S. (2005). An introduction to the Event Related Potential Technique. Cambridge, MA: MIT Press.

Downey, A. B. (2008). Think Python: How to think like a computer scientist. Green Tree Press. Available for free at http://www.greenteapress.com/thinkpython/thinkpython.pdf.

Acknowledgment: I would like to thank Steve Luck for kindly allowing me to use his slides.

Description

Event Related Potentials (ERPs) provide a method by which we can trace the electrophysiological signatures of perceptual and cognitive processes. The aim of this course is to train students to be able to independently conduct ERP experiments. You will learn the theory behind ERPs, including a survey of the main components that have been identified and their role in cognitive processing. You will also be trained to code ERP experiments, apply the cap, run experiments and analyze ERP data.

Prerequisites

There are no prerequisites for the class. A background in experimental design and some statistics will be useful.

Evaluation

There will be 12 coding assignments that will be worth 6% each for a total of 72%. In addition, there will be a skills assessment in which you will need to apply the ERP cap and conduct an experiment. The skills assessment will be worth 28%.

Submitting Assessment

All coding assignments should be submitted using the Carmen dropbox. If you don't know how to login to Carmen or are uncertain how to use the dropbox, ask either after class or during my office hours. Assessment is always due at midnight of the due date. I will give a two-day grace period after each due date in which assessment can be submitted without penalty. After the grace period only documented excuses for compassionate or illness reasons will be considered, so you should NOT consider the grace period a two-day extension.

NEW

Academic Misconduct

All students at the Ohio State University are bound by the Code of Student Conduct (see http://studentaffairs.osu.edu/pdfs/csc_12-31-07.pdf). Violations of the code in this class will be dealt with according to the procedures detailed in that code. Specifically, any alleged cases of misconduct will be referred to the Committee on Academic Misconduct. It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term "academic misconduct" includes all forms of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. Instructors shall report all instances of alleged academic misconduct to the committee (Faculty Rule 3335-5-487). For additional information, see the Code of Student Conduct.

Course Schedule

Week 1(1) Luck Chapter 1: Introduction to ERPs and their neural origins

Week 1 (2) Think Python: Chapters 1-4
Chapter 1: The Way of the Program
Chapter 2: Variables, expressions and statements
Chapter 3: Functions
Chapter 4: Case study: Interface design

Week 2 (1) Luck Chapter 2: The Design and Interpretation of ERP Experiments

Week 2 (2) Think Python: Chapters 5-9
Chapter 5: Conditionals and recursion
Chapter 6: Fruitful functions
Chapter 7: Iteration
Chapter 8: Strings
Chapter 9: Case study: Word play

Week 3 (1) Luck Chapter 3: Basic principles of ERP recording

Week 3 (2) Think Python: Chapters 10-13
Chapter 10: Lists
Chapter 11: Dictionaries
Chapter 12: Tuples
Chapter 13: Case study: Data structure selection

Week 4 (1) Skills Session

Week 4 (2) Think Python: Chapters 14-19
Chapter 14: Files
Chapter 15: Classes and objects
Chapter 16: Classes and functions
Chapter 17: Classes and methods
Chapter 18: Inheritance
Chapter 19: Case study: Tkinter

NEW

Week 5 (1)	Skills Session
Week 5 (2)	Skills Session
Week 6 (1)	Introduction to pyEPL Exercise: Code an oddball experiment
Week 6 (2)	pyEPL II Exercise: Code a recognition memory experiment
Week 7 (1)	pyEPL III Exercise: Extract data from a log file
Week 7 (2)	pyEPL IV Exercise: Code a categorization experiment (with feedback)
Week 8 (1)	Luck Chapter 4: Averaging, Artifact Rejection, and Artifact Correction
Week 8 (2)	Introduction to Python Time Series Analysis (PTSA) package
Week 9 (1)	Luck Chapter 5: Filtering
Week 9 (2)	PTSA II Exercise: Filter and average data from recognition memory experiment
Week 10 (1)	Skills Session
Week 10 (2)	Skills Session
Week 11 (1)	Introduction to pylab and graphing Exercise: create a plot with error bars representing the 95% confidence intervals of the behavioral data from the recognition experiment.
Week 11 (2)	Luck Chapter 6: Plotting, Measurement and Analysis
Week 12 (1)	ERP Component Measurement and Analysis Practical Exercise: Analyze data from recognition memory experiment.
Week 12 (2)	Skills Session
Week 13 (1)	Skills Session
Week 13 (2)	Skills Assessment
Week 14 (1)	Luck Chapter 7: ERP Localization
Week 14 (2)	Localization Laboratory Exercise: Use BESA to analyze data from recognition memory experiment

NEW

Disability Accommodation

Students with disabilities that have been certified by the Office for Disability Services will be appropriately accommodated, and should inform the instructor as soon as possible of their needs. The Office for Disability Services is located in 150 Pomerene Hall, 1760 Neil Avenue; telephone 292-3307, TDD 292-0901; http://www.ods.ohio-state.edu/.

Event Related Potentials

Course Code:	PSYCHOLOGY 695.04	Quarter:	SPRING, 2010
Time:	M W 10:00-11:48	Place:	022 PS
CallNumber:	20291		
Instructor:	Dr. Simon Dennis	Office:	200E Lazenby Hall
Phone:	292-2229	E-mail:	dennis.210@osu.edu
Office Hrs:	R 1:30pm-2:30pm; Other times by appointment.		
Assistant:	Ben Stone	E-mail:	benjamin.stone@gmail.com
Assistant:	Nayef Ahmar	E-mail:	aenayef@yahoo.com

Required Text: Luck, S. (2005). An introduction to the Event Related Potential Technique. Cambridge, MA: MIT Press.

Downey, A. B. (2008). Think Python: How to think like a computer scientist. Green Tree Press. Available for free at http://www.greenteapress.com/thinkpython/thinkpython.pdf.

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Prerequisites

There are no prerequisites for the class. A background in experimental design and some statistics will be useful.

Evaluation

There will be weekly coding assignments that will be worth 8% each for a total of 72%. In addition, there will be a skills assessment in which you will need to apply the ERP cap and conduct an experiment. The skills assessment will be worth 28%.

Submitting Assessment

All coding assignments should be submitted using the Carmen dropbox. If you don't know how to login to Carmen or are uncertain how to use the dropbox, ask either after class or during my office hours. Assessment is always due at midnight of the due date. I will give a two-day grace period after each

DLP

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Course Schedule

Mar 29 (M)	Luck Chapter 1: Introduction to ERPs and their neural origins
Mar 31 (W)	Think Python: Chapters 1-4 Chapter 1: The Way of the Program Chapter 2: Variables, expressions and statements Chapter 3: Functions Chapter 4: Case study: Interface design
Apr 5 (M)	Luck Chapter 2: The Design and Interpretation of ERP Experiments
Apr 7 (W)	Think Python: Chapters 5-9 Chapter 5: Conditionals and recursion Chapter 6: Fruitful functions Chapter 7: Iteration Chapter 8: Strings Chapter 9: Case study: Word play
Apr 12 (M)	Luck Chapter 3: Basic principles of ERP recording
Apr 14 (W)	Think Python: Chapters 10-13 Chapter 10: Lists Chapter 11: Dictionaries Chapter 12: Tuples Chapter 13: Case study: Data structure selection
Apr 19 (M)	Think Python: Chapters 14-19 Chapter 14: Files Chapter 15: Classes and objects Chapter 16: Classes and functions

	Chapter 17: Classes and methods Chapter 18: Inheritance Chapter 19: Case study: Tkinter
Apr 21 (W)	Luck Chapter 4: Averaging, Artifact Rejection, and Artifact Correction
Apr 26 (M)	Introduction to pyEPL Exercise: Code an oddball experiment
Apr 28 (W)	Luck Chapter 5: Filtering
May 3 (M)	pyEPL II Exercise 1: Code a recognition memory experiment Exercise 2: Extract data from the log file
May 5 (W)	Skills Session
May 10 (M)	Introduction to pylab and graphing Exercise: create a plot with error bars representing the 95% confidence intervals of the behavioral data from the recognition experiment.
May 12 (W)	Skills Session
May 17 (M)	ERP Filtering and Averaging Practical Exercise: Filter and average data from recognition memory experiment
May 19 (W)	Skills Session
May 24 (M)	ERP Component Measurement and Analysis Practical Exercise: Analyze data from recognition memory experiment.
May 26 (W)	Skills Assessment
May 31 (M)	Memorial Day (no class)
Jun 2(W)	Luck Chapter 7: ERP Localization

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