

## Physiological Psychology Laboratory Course

CETL Capstone Project

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### **Abstract**

The proposed team-taught Physiological Psychology Laboratory is designed to provide psychology students with hands-on research experience. This course utilizes active learning of current laboratory techniques throughout the class that culminate in a final project, the success of which depends on the synthesis of all components.

### **Project Description**

The course will begin with a sheep brain dissection module where students dissect their own sheep brain in pairs, in order to make neuroanatomy alive and relevant to what they are learning in the text. Students will then learn about various neuropsychological tests and get experience administering them, recording data and reporting their findings. Next, based on the previously explored classic neuropsychological tests, students will design their own stimulus presentation study. Students will become proficient in programming, and manifest a study of their own design in Visual Basic software. One of these student designs will be adopted for use in the final project. Next, students will learn about electroencephalography (EEG) as a research tool. Finally, utilizing the chosen student stimulus presentation program, the students will conduct an EEG experiment where they record data from various brain areas of classmates. Throughout this class, students will be required to utilize current literature in order to write their findings up as a journal article in APA style – a critical component to being a psychological scientist.

This project qualifies as a new course development in that this is an innovative course that supports the department's goals. The psychology department is implementing changes to move towards more in-depth study for our students in major areas of interest like biological psychology. Currently, no class provides students with the opportunity to explore the types of research going on in this very empirical field by engaging in it themselves. Creation of this course would also help support the goal of graduating students who are well versed in their chosen specialty and have a functional knowledge of the discipline that would translate into either graduate school or employment.

In addition, the proposed format is well beyond the usual new course preparation when it comes to coordinating brain dissection, computer programming, cognitive testing and EEG recordings. These active learning activities are what also qualify this course as project-based innovation.

Finally, this class also qualifies as team teaching due to the fact that it is being proposed as a collaboration with Dr. Jonathan Page, the Psychology department's other biopsychologist. We have complementary, but distinct,

specialties that make our team effort a much more stimulating and complete class than either of us could offer alone.

### **The significance of this project to your professional development plan**

This proposal directly supports my criterion 1 goals. Within the Guidelines for evaluation it states, "Because teaching embraces activities and responsibilities beyond classroom instruction, evaluation may address effectiveness in course development, curriculum design, instructional innovation, ability to organize, analyze and present knowledge, instructional advisement and other such related activities." As a new faculty member, I take increasing the quality of the education I provide very seriously and believe that this project will demonstrate my effectiveness and commitment to that goal.

### **Description of the pedagogical or methodological innovations that will result from this project**

The purpose of this course is to take learning beyond the textbook. Designing their own experiments, carrying them out and reporting on them, all while learning the underlying principles, can only help create an understanding of physiological psychology at a depth never reached in the traditional lecture classes offered currently.

### **Learning Outcomes and Assessment**

*Mastery of neuroanatomy and function* will be assessed using a "pin test" which requires students to recognize areas of the brain by their unique features and position within the anatomical prep and relate the identified brain areas to their known function. *Proficiency in creating stimulus presentation programs* will be assessed by the successful completion of their individual program.

*Understanding many of the various physiological psychology research methods* will be assessed with content quizzes and the module papers. *Writing an APA style research article* will be assessed by the evolution of their writing projects throughout the semester.

### **How will this proposal improve teaching and learning for you and your students?**

For my students, learning will go way beyond the textbook. Designing their own experiments, carrying them out and reporting on them all, while learning the underlying principles, can only help create an understanding of physiological psychology at a depth never reached in the traditional lecture classes offered currently.

This class is being proposed as a collaboration with Jonathan Page. We have complementary, but distinct, specialties that make our team effort a much more stimulating and complete class than either of us could offer alone. Working with Dr. Page will provide constant feedback and inspiration to improve my teaching.