

Innovative Teaching – Course Redesign project (ITCR)

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BIOL 136: Vertebrate Neurophysiology

This course provides an overview of topics from the molecular to the organism level, including chemical and electronic phenomena of membranes, sensory transduction, information coding, neurochemistry, neural control, consciousness and evolution of neural systems.

Brief description of the course and its place in the curriculum

This course is a 3 unit, upper level lecture course (n = 30-50 students), required in the Systems Physiology concentration in Biological Sciences. Students must have already completed the Mammalian Physiology course. A key goal is to teach students to apply what they are learning about the basic physiology of neurons and circuits to design their own neuroscience experiments.

Summary of course re-design activities

The department’s Student Learning Outcomes emphasize scientific communication skills, group work, and using current literature searches to more fully understand course material.

I would like to re-design my course to more fully meet those instructional goals by spending most of the in-class time on virtual labs, problem solving, and reading primary journal articles.

I will 'flip' the course by recording mini lectures that students can watch before class.

I will use on-line quizzes to monitor student understanding.

During class time I will cover the confusing issues and spend the rest of the time guiding students through the virtual laboratories, discussion of current papers in neuroscience, and problem solving.



“Those who fall in love with practice without science are like a sailor who enters a ship without a helm or a compass, and who never can be certain whether he is going.”

Leonardo da Vinci

