

# The Department of Cognitive Science

University of California, San Diego

Brain • Behavior • Computation

Looking for a class to take in **Spring 10**, Sign up for **COGS 160 D00**



## **Cogs 160 D00 - Neural Coding in Sensory Systems**

Section ID #677304, 4 units, Prof. Angela Yu

Despite powerful computers and sophisticated technologies, artificial intelligence systems still far lag the brain in processing and responding to sensory inputs. How does the brain cobble together such an impressive system from fallible, noisy biological hardware such as neurons and synapses? What are some of the computational principles that enable it to overcome its hardware limitations? What are some commonalities and uniqueness in the neural representation and processing of sensory information in different modalities: vision, audition, olfaction, somatosensation? How does information from these different modalities interact? And finally, how critical is active exploration to the brain's powerful sensory processing systems, such as strategic eye movements, orientating movements, whisking behavior in rodents, etc.?

This seminar course will consist of lectures, discussions, reading of review articles and primary research articles, and written critique of published manuscripts. Students will be especially encouraged to think deeply through some of these major questions in sensory neuroscience and bring their thoughts to class for active discussions.

**Pre-reqs: Cogs 1 and (Cogs 101A or Cogs 107 B), or consent of instructor.**

Contact Thanh Maxwell at [tmaxwell@ucsd.edu](mailto:tmaxwell@ucsd.edu) for enrollment process.