Minor in Computational Neuroscience

Computational neuroscience is becoming an important tool for neuroscientists to understand how complex brain circuits work, for example, what causes post-traumatic stress disorder. This intersection of engineering and neuroscience is allowing great advances in health care, manufacturing and communication.

Requirements

**Required Core**
- ECE/BIO_SC 4590 Computational Neuroscience 4

**Biology Core for Engineering/Physics/Math Students**
- Take 6 credit hours from the following list:
  - BIO_SC 1010 & BIO_SC 1020 General Principles and Concepts of Biology and General Biology Laboratory 5
  - or F_W 1100 Introductory Zoology with Laboratory
  - or BIO_SC 1500 Introduction to Biological Systems with Laboratory
  - or BIO_SC 2300 Introduction to Cell Biology
  - PSYCH 2210 Mind, Brain, and Behavior 3
  - or PSYCH 4210 Physiological Psychology
  - ECE 2017 World of Neuroscience 1
  - or BIO_SC 2017 World of Neuroscience
  - or CMP_SC 2017 World of Neuroscience

**Engineering/Physics/Math Core for Biology/Psychology Students**
- Take 6 credit hours from the following list:
  - PHYSCS 1220 College Physics II 4-5
  - or PHYSCS 2760 University Physics II
  - INFOTC 1040 Introduction to Problem Solving and Programming 3
  - BIOL_EN 2080 Introduction to Programming for Engineers 3
  - ECE 2017 World of Neuroscience 1
  - or CMP_SC 2017 World of Neuroscience
  - or BIO_SC 2017 World of Neuroscience

Higher Level BIOL_EN or CMP_SC courses with approval

All students must select two courses from the following list:

**Biological Science Courses**
- MPP 3202 Elements of Physiology 5
- BIO_SC 3700 Human Physiology 5
- BIO_SC 4500 Neurobiology 3
- BIO_SC 4560 Sensory Physiology and Behavior 3
- BIO_SC 4986 Neurology of Motor Systems 3
- BIO_SC 4988 Nerve Cells and Behavior 3
- ECE 2017 World of Neuroscience 1
  - or CMP_SC 2017 World of Neuroscience
  - or BIO_SC 2017 World of Neuroscience

**Engineering or Physics Courses**
- BIOL_EN 4070 Bioelectricity 3
- ECE 4310 Feedback Control Systems 3
- ECE 4830 Introduction to Digital Signal Processing 3-4
- PHYSCS 4500 Computational Biological Physics 3