![Mizzou University of Missouri]

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		**4**
ECE/BIO_SC 4590	Computational Neuroscience	4
Biology Core for Engineering/Physics/Math Students		**6**
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		**6**
Take 6 credit hours from the followig 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:		**6+**
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
BIOL_EN 4075	Brain Signals and Brain Machine Interfaces	3
or BME 4075	Brain Signals and Brain Machine Interfaces	
BIOL_EN 4540	Neural Models and Machine Learning	3
or BME 4540	Neural Models and Machine Learning	
ECE 2017	World of Neuroscience	1
or CMP_SC 2017	World of Neuroscience	
or BIO_SC 2017	World of Neuroscience	