

Student Name: _____

Perm: _____

Ph.D. EMPHASIS – NEUROENGINEERING – 2021-22

The Interdepartmental Ph.D. Emphasis in Neuroengineering is a multidisciplinary program that brings together faculty from the Division of Mathematical, Life & Physical Sciences (MLPS) and the College of Engineering to provide graduate training. Applications to the Emphasis are accepted from doctoral students that are in good academic standing (3.0 GPA or higher) from one of the following participating Ph.D. objectives: Chemical Engineering, Computer Science, Dynamical Neuroscience, Electrical & Computer Engineering, Mechanical Engineering, and Psychological & Brain Sciences.

Applications for adding the Emphasis maybe submitted at any time in a student’s academic tenure. Students will normally apply during their first or second year of study at UCSB when the required coursework should be completed. The Emphasis Director will make admission decisions. Requirements for admission include:

1. A brief written statement of interest from the applicant.
2. The relevance of the Emphasis to the student’s course of study and prospective benefits to the student.
3. A letter of support from the applicant’s major advisor (dissertation chair) in her or his home unit. If the student does not yet have a major advisor, the Graduate Advisor in the home department will assess the student’s fit, and if appropriate write a letter of recommendation.

*These requirements are in addition to the applicant’s home departmental doctoral degree requirements and University requirements for candidates for graduate degrees (described in the “Graduate Education” section of the UCSB General Catalog). A minimum of **17.0 units** is required for the emphasis, including 11.0 units in required core courses. The emphasis requirements are designed to provide maximum flexibility so as not to extend time-to-degree while also assuring a basic level of competence within neuroengineering. The requirements for the emphasis include successful completion of (1) the required coursework and (2) a neuroengineering component in the student’s doctoral dissertation.*

CORE COURSES (11.0 units total)			
COURSE #	COURSE NAME	UNITS	GRADE
PSY 265	Computational Neuroscience	4.0	
PSY 269 or MCDB 251	Neuroanatomy or Neurobiology I	4.0	
*DYNS 592	Graduate Seminar in Dynamical Neuroscience	3.0	

* Emphasis students are required to enroll in DYNS 592 for three quarters. They are also required to give one 1-hour presentation on their own research during any of the quarters for which they are enrolled in the course.

ADDITIONAL UNITS (6.0-8.0 units total)			
At least 6 additional units (two courses) of neuroengineering-related graduate coursework, exclusive of courses numbered 596-599. These courses will be individually selected from the following list by the student under the advice and consent of his/her mentor and approved by the Executive Committee.			
CHE 255/BMSE 255	Methods in Systems Biology	4.0	
CMPSC 211B	Numerical Simulation	4.0	
CMPSC 225/ECE 205A	Information Theory	4.0	
CMPSC 281B/ECE 281B	Advanced Topics in Computer Vision	4.0	
ECE 230A/ME 243A	Linear Systems I	4.0	
ECE 230B/ME 243B	Linear Systems II	4.0	
ECE 235	Stochastic Processes in Engineering	4.0	
ECE 236	Nonlinear Control Systems	4.0	
ECE 277	Pattern Recognition	4.0	

