

Neuroengineering

Degrees Offered	PhD
Website	www.uab.edu/engineering/home/neuroengineering
Program Co-Directo, Engineering	Jamie Tyler, PhD
Program Co-Directo, Medicine	Mark Bolding, PhD
Program Associate Director	Mark Bolding, PhD
Program Administrator	Kristy Barlow, MPA
E-mail	neuroeng@uab.edu

Admissions Requirements

- BS, MS, or be currently enrolled in the DMD/PhD or MD/PhD program at UAB*
- Minimum GPA of 3.0 on a 4.0 scale on most recent degree
- GRE is not required
- Personal statement identifying research interest
- CV/Résumé
- 3 academic or professional recommendations
- International applicants must submit English proficiency scores in accordance with UAB Graduate School requirement. [Click here for details](#);
- Original transcripts from all colleges and universities attended since high school must be sent directly to the UAB Graduate School (detailed instructions are included during the online application process)

* PhD students normally have earned a bachelor's degree in an engineering discipline or a closely-related field. Students with undergraduate degrees in the computer science, neuroscience, physical sciences, life sciences, or mathematics will also be considered for admission; however, such students must demonstrate preparation for the NE graduate curriculum. Admission to the NE PhD program is competitive.

Students admitted to the doctoral program typically receive a competitive stipend that includes payment of tuition. In addition to completing coursework requirements (see below), doctoral students must form a Graduate Dissertation Committee consisting of at least five faculty members, including the primary research mentor. At least one committee member must have a primary appointment in the School of Engineering and one must have a primary appointment in the School of Medicine. A written dissertation proposal must be orally presented to the committee and approved, at which time the student is admitted to candidacy. Admission to Candidacy must take place at least two semesters before the student may graduate. A written dissertation embodying the results of the student's original research must then be publicly defended, approved by the committee, and submitted to the Graduate School.

Publication Requirement. Original peer-reviewed research articles in reputable journals are the standard for demonstrating scientific productivity. The research conducted by NE doctoral students is expected to result in such publications. Before their degree is awarded, students are required to have at least one "first-author" journal article that has been published (or accepted for publication) and a second that has been submitted to a journal. Typically, a student's doctoral research will result in at least three first-author articles. Many students will be co-authors on collaborative research articles and may also share

authorship on review articles, book chapters, conference proceedings, and other forms of scientific communication. Although these works bolster the student's scientific credentials, they do not count toward the NE publication requirement. In some cases, first-authorship of an article is shared among multiple individuals. In these cases, the article may count toward the publication requirement of only one doctoral student.

Additional Academic Policies

Special Topics courses and independent/individual study courses are reviewed for degree applicability to the degree. No more than 6 combined hours of Special Topics and/or Independent Study courses will be applied to the Neuroengineering PhD without appeal to and approval from the Program Directors.

UAB offers similar courses at the 400/500 and 600/700 levels. While the higher numbered course has more advanced content, there is a significant overlap in topics. Therefore, students are not allowed to take a 500-level or 700-level course for credit if they have previously taken the related 400-level or 600-level course, respectively.

Ph.D. in Neuroengineering

Requirements	Hours
GRD 717 Principles of Scientific Integrity	3
IDNE 701 Topics in Neuroengineering I	3
IDNE 702 Topics in Neuroengineering II	3
IDNE 720 Applications in Data Science	1
IDNE 796 Neuroengineering Journal Club ¹	6
BST 621 Statistical Methods I	3
or GRD 770 Intro to Biostats	
BST 622 Statistical Methods II	3
BME 717 Engineering Analysis	3
or ME 761 Math Methods in EGR I	
NBL 655 Synapses, Neurons and Brains	3
NBL 656 From Systems to Cog Neuro	3
EGR/CS Elective ²	6
NS/LS Elective ³	3
Other Electives ⁴	
IDNE 773 Lab Rotation ⁵	0
IDNE 798 Non-Dissertation Research	2
IDNE 799 Dissertation Research	24
Total Hours	66

¹ Students must register for a minimum of 6 semesters; may also select another 700-level 1 hour Journal Club with Program Director approval.

² Choose one from the following: CS 757, CS 760, CS 767, CS 773, CS 775, CS 785, EE 621, EE 641, EE 734, EE 738, EE 756, EE 758, ME 665.

³ Choose one from the following: GBS 714, GBSC 744, GBSC 718, GBSC 721, NBL 700, NBL 707, NBL 735, NBL 740, NBL 743, PY 707, PY 693, VIS 743, VIS 756, VIS 757.

⁴ Choose three from the following: GBS 714, GBS 722, GBSC 744, GBSC 718, NBL 740, NBL 743, PY 707, VIS 743, VIS 756, VIS 757, CS 760, CS 767, CS 773, CS 775, CS 785, EE 621, EE 641, EE 734, EE 738, EE 756, EE 758, ME 665, BST 623, BST 660, BST 680, BST 723.

⁵ Students who were not admitted directly into a lab may register for a maximum of 4 rotations.