Requirements – Neurobiology Major
Please see our website, neuromajor.wisc.edu, for potential updates to this list.

**MATHEMATICS, STATISTICS, CHEMISTRY, AND PHYSICS**
- **Calculus:** MATH 211, 217, 221 or 275
- **Statistics:** STAT 371 or 541 or BOTANY 575 - Intro to Modern Statistical Methods for Biologists
- **General Chemistry:** (CHEM 103-104) or CHEM 109 or (CHEM 115-116)
- **Organic Chemistry:** CHEM 341 or (CHEM 343 & 345)
- **General Physics 1**: PHYSICS 103, 201, 207, or 247
- **General Physics 2**: PHYSICS 104, 202, 208 or 248

**GENERAL BIOLOGY (Complete option 1, 2, or 3):**
1. **Introductory Biology 1 & 2:** ZOOLOGY 151-152
2. **Animal Biology + General Botany:** ZOOLOGY 101-102 & BOTANY 130
3. **BIOCORE**: BIOCORE 381, 383, 485, 587 and two labs from: BIOCORE 382, 384, 486

**REQUIRED NEUROSCIENCE COURSES**: 3
- **Neurobiology:** ZOOLOGY 523 (Fall, Summer semesters)
- **Behavioral Neuroscience:** PSYCH 454 (Spring semester)
- **Neuroscience Seminar:** ZOOLOGY 500 (Fall, Spring semesters)

Distributed Neuroscience Coursework (3 courses from this list, no more than one course with an asterisk (*) may apply (see note below):
- ANAT+PHY - 335 – Physiology*
- ANAT+PHY - 435 – Fundamentals of Human Physiology*
- BIOCHEM 375 – Molecular Control of Metabolism and Metabolic Disease*
- BIOCHEM 501 - Introduction to Biochemistry*
- BIOCHEM 508 – General Biochemistry 2*
- BIOCHEM 630 - Cellular Signal Transduction Mechanisms*
- BME 520 – Stem Cell Bioengineering*
- CS&D 210 - Neural Basis of Communication
- CS&D 503 - Neural Mechanisms of Speech, Hearing & Language
- ED PSYCH 326 - Mind, Brain and Education
- GENETICS 520 – Neurogenetics
- KINES 531 - Neural Control of Movement
- NTP 610 - Cellular and Molecular Neuroscience
- NTP 611 – Systems Neuroscience
- NTP 629 - Molecular and Cellular Mechanisms of Memory
- NTP 630 - Neuronal Mechanisms for Sensation & Memory in the Cerebral Cortex
- NTP 651 - Methods for Neuroimaging Research
- NTP 655 - Modeling Neurodevelopmental Disease
- NTP 670 - Stem Cells and the Central Nervous System
- NTP 675 - Topic: *Brain Mapping in Health and Disease: Applications*
- NTP 675 - Topic: *Functional Brain Imaging of Cognitive Disorders*
- NTP 675 - Topic: *Molecular Mechanisms of Brain Damage*
- NTP 675 - Topic: *Neuroendocrinology*
- NTP 675 - Topic: *Reproductive Neuroendocrinology*
- PHM SCI 521 - Pharmacology I
- PHYSIOL 533 – Molecular Physiology
- PSYCH 406 - Psychology of Perception
- PSYCH 414 - Cognitive Psychology
- PSYCH 513 - Hormones, Brain, and Behavior
- PSYCH 601 - Topic: Epigenetics and the Brain
CREDITS REQUIRED FOR THE MAJOR: 30
Courses in the categories of GENERAL BIOLOGY, REQUIRED NEUROSCIENCE and LAB/RESEARCH may contribute to a minimum of 30 credits in Biological Sciences courses required for the major. If needed, courses from an approved list may also count. Also, go to www.neuromajor.wisc.edu for the most up-to-date information on the courses required for the Neurobiology Major.

L&S STANDARDS FOR RESIDENCE & QUALITY OF WORK IN THE MAJOR

2.000 minimum GPA on all courses in the major
15 credits in Residence with a 2.000 GPA in upper level major courses (numbered 300 or higher)
15 credits in the major taken ON CAMPUS

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1. Engineering students may substitute E M A 201 and either (E M A202 or M E 240) for Physics 1.
2. Completion of the BIOCORE sequence connotes an Honors award at the time of graduation.
3. The Required Neuroscience courses (e.g., Zoology 523, Psychology 454) and several of the Distributed Neuroscience courses are taught yearly while other courses are taught every other year. An updated list of the neuroscience-related courses within the Neurobiology Major can be found on the Neurobiology Major website www.neuromajor.wisc.edu.
4. Qualifying courses taken for Neuroscience Electives may also meet the Lab/Research requirement.
5. Only Directed Study courses taken after – and not concurrent with – the completion of Introductory Biology are accepted in the major.
6. Both semesters of a Senior Thesis (691-692) or Senior Honors Thesis (681-682) are required to earn degree credit and apply to the major. Students see a Neurobiology Major advisor before enrolling in either series of courses.
*The scope of topic areas covered in these classes prohibits a more in depth treatment of neurobiology subject matter. Therefore, only 1 course marked with an * will be accepted toward a student's Distributed Neuroscience coursework. See a Neurobiology Major advisor with questions.