The undergraduate Certificate in Neuroscience is an interdisciplinary program requiring 20 credits in neuroscience. The program provides a set of related courses capped by completing and presenting a research project. All required courses must be completed with a “B-” or higher. Students must fill out the enrollment form prior to being admitted into the certificate program. Psychology majors and minors can contact the Undergraduate Psychology Advising Office to explore neuroscience interests.

### REQUIREMENTS

1. **Both entry-level courses (8 credit hours):**
   - BIOL 1831—Introductory Biology: From Molecule to Organisms*
   - or BIOL 1012—General Biology
   - or BIOL 1102—Human Biology
   - PSYCH 2211—Introduction to Biological Psychology
   *BIOL 1831 is strongly recommended, especially for those considering taking BIOL 4822—Introduction to Neuroscience towards their Neuroscience Certificate (BIOL 1831 is a prerequisite for BIOL 4822.).

2. **One statistics course selected from the list below (3 credit hours):**
   - BIOL 4122—Biometry
   - MATH 1320—Introduction to Probability and Statistics
   - PSYCH 2201—Psychological Statistics
   - SOC 3220—Social Statistics

3. **Two elective courses (6 credit hours):**
   Note: At least 1 elective must be outside your major. Some courses below have prerequisites.
   - BIOL 1131—Human Physiology and Anatomy I
   - BIOL 1162—General Microbiology
   - BIOL 2012—Genetics
   - BIOL 2482—Microbiology
   - BIOL 3102—Animal Behavior
   - BIOL 3622—Cell Biology
   - BIOL 4502—Evolution of Cognition
   - BIOL 4822—Introduction to Neuroscience
   - CHEM 1052—Chemistry for the Health Profession
   - CHEM 4712—Biochemistry
   - CMP SCI 4300—Introduction to Artificial Intelligence
   - CMP SCI 4340—Introduction to Machine Learning
   - HONORS 3030—Advanced Honors Seminar in the Social and Behavioral Sciences (topic must be approved)
   - HONORS 3160—Honors Writing in the Sciences
   - PHIL 1178—Superhuman Mind
   - PHIL 2280—Minds, Brains, and Machines
   - PHIL 3378—Philosophy of Mind
   - PHIL 3380—Philosophy of Science
   - PHIL 3380—Topics in Philosophy of Mind
   - PHIL 4478—Philosophy of Cognitive Science
   - PHIL 4479—Philosophy of Science
   - PHYSICS 4347—Introduction to Biophysics
   - PSYCH 3205—Evolutionary Psychology
   - PSYCH 4300—Introduction to Pharmacology: Drugs and Mental Illness
   - PSYCH 4314—Behavioral Neuroscience
   - PSYCH 4330—Hormones, the Brain and Behavior
   - PSYCH 4340—Introduction to Human Neuroanatomy
   - PSYCH 4349—Human Learning and Memory
   - PSYCH 4350—Emotions and the Brain
   - PSYCH 4356—Cognitive Processes
   - PSYCH 4372—Introduction to Social Neuroscience
   - PSYCH 4374—Introduction to Clinical Neuropsychology

4. **At least 3 credits from one or more semesters of research experience**
   This requires completion of a direct research project with a neuroscience faculty mentor. A [list of those faculty](#) can be found on the Neuroscience Certificate website. The research project must be approved in advance by a member of the neuroscience faculty. It is required that the research will lead to a poster presentation at the UMSL Neuroscience Seminar, the Undergraduate Research Symposium, or a similar event.
   - BIOL 4905—Research
   - CHEM 3905—Chemical Research
   - CMP SCI 4880—Individual Studies
   - PHYSICS 3390—Research
   - PSYCH 3390—Directed Studies
   - PHIL 4450—Special Readings in Philosophy

As of September 2018