

CERTIFICATE IN NEUROSCIENCE COURSE REQUIREMENTS

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 Professions
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 4478—Topics in Philosophy of Mind
PHIL 4479—Philosophy of Cognitive Science
PHIL 4480—Topics in 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