BS in Neuroscience

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Degree Program Description

Neuroscience draws on biology, psychology, chemistry, physics, bioengineering, and other life and health sciences to address the scientific and societal challenges of mental health, neurological disease, and our basic understanding of the nervous system. The Neuroscience BS degree program offers a rigorous curriculum covering cellular and molecular neuroscience, systems neuroscience, and behavioral science, with advanced electives that allow students to tailor their studies to specific interests. The program will provide multidisciplinary and hands-on experiential learning, which fosters critical thinking, scientific inquiry, and effective communication skills, preparing students for diverse career opportunities and postgraduate studies. Graduates are prepared for diverse career paths in medicine, allied health, research, pharmaceuticals, and education, as well as advanced graduate or professional programs.

Major Program Requirements

The following degree requirements must be completed in addition to University (https://catalog.missouri.edu/academicdegreerequirements/universityrequirements/), general education (https://catalog.missouri.edu/academicdegreerequirements/generaleducationrequirements/), and College of Arts and Science (https://catalog.missouri.edu/collegeofartsandscience/#undergraduatetext) requirements, students must also meet the following major program requirements. All major requirements in the College of Arts and Science must be completed with grades of C- or higher unless otherwise indicated.

Foundational Courses		
MATH 1100	College Algebra	3
or MATH 1160	Precalculus Mathematics	
STAT 1200 & STAT 2200	Introductory Statistical Reasoning and Introductory Statistical Methods	3-4
or STAT 2500	Introduction to Probability and Statistics I	
Required Core Courses		
NEUROSCI 1000	Career Foundations in Neuroscience	1
NEUROSCI 1010	Neuroscience Foundations	3
NEUROSCI 3010	Behavioral Neuroscience	3
NEUROSCI 3020	Cognitive Neuroscience	3
NEUROSCI 3030	Cellular Molecular Neuroscience	3
NEUROSCI 3040	Structure and Function of the Nervous System	3
BIO_SC 2200	General Genetics	4
BIO_SC 2300	Introduction to Cell Biology	4
CHEM 1400 & CHEM 1401	College Chemistry I and College Chemistry I Laboratory	4
CHEM 1410 & CHEM 1411	College Chemistry II and College Chemistry II Laboratory	4
PHYSCS 1210	College Physics I	4-5
or PHYSCS 2750	University Physics I	
PHYSCS 1220	College Physics II	4-5
or PHYSCS 2760	University Physics II	
PSYCH 2110	Learning, Memory, and Cognition	3
PSYCH 2220	Drugs and Behavior	3
Electives (at least 6 credit hours at 3000-level or higher)		**9**
BIO_SC 3700	Human Physiology	5
BIO_SC 4500	Neurobiology	3
BIO_SC 4560	Sensory Physiology and Behavior	3
BIO_SC 4590	Computational Neuroscience	3
BIO_SC 4640	Behavioral Biology	3-4
BIO_SC 4988	Nerve Cells and Behavior	3
BIOL_EN 4070	Bioelectricity	3
BIOL_EN 4075	Brain Signals and Brain Machine Interfaces	3
or BME 4075	Brain Signals and Brain Machine Interfaces	
BIOL_EN 4540	Neural Models and Machine Learning	3
BIOL_EN 4970	Nuclear Magnetic Resonance and Magnetic Resonance Imaging	3
or BME 4970	Nuclear Magnetic Resonance and Magnetic Resonance Imaging	
ECE 4310	Feedback Control Systems	3
ECE 4830	Introduction to Digital Signal Processing	3-4
MAE 4750	Feedback Control Systems	3
PHIL 2820	Minds, Brains, and Machines: An Introduction to Philosophy of Cognitive Science	3
PHIL 4210	Consciousness, Thought, and the Brain: An Introduction to Philosophy of Mind	3
PSYCH 4110	Perception	3
PSYCH 4210	Physiological Psychology	3
PSYCH 4220	Animal Behavior and Cognition	3
PSYCH 4240	Cognitive Neuroscience	3
PSYCH 4440	Sex Differences	3
PSYCH 4561	Psychosis and the Brain	3
PSYCH 4570	Pediatric Neuropsychology	3

Semester Plan

Below is a sample plan of study, semester by semester. A student's actual plan may vary based on course choices where options are available.

First Year			
Fall	**CR**	**Spring**	**CR**
MATH 1100	3	STAT 2500	3
ENGLSH 1000	3	NEUROSCI 1000	1
NEUROSCI 1010	3	PSYCH 2110	3
Humanities	3	CHEM 1400 & CHEM 1401	4
INTDSC 1001 or SSC 1150 (or an elective)	2	Social Science	3
	14		**14**
Second Year			
Fall	**CR**	**Spring**	**CR**
NEUROSCI 3010	3	NEUROSCI 3020	3
PSYCH 2220	3	Humanities or WI	3
CHEM 1410 & CHEM 1411	4	BIO_SC 2300	4

BIO_SC 2200		4 Elective		6
		14		**16**
Third Year				
Fall	**CR**	**Spring**	**CR**	
NEUROSCI 3030		3 NEUROSCI 3040		3
PHYSCS 1210		4 PHYSCS 1220		4
Second Language Alternative		3 Second Language Alternative		3
Humanities 2000-level or higher		3 Neuroscience Elective		3
Elective		3 Electives		3
		16		**16**
Fourth Year				
Fall	**CR**	**Spring**	**CR**	
Neuroscience Elective 3000-level or higher		3 Neuroscience Elective		3
Second Language Alternative		3 Second Language Alternative		3
Elective		9 Elective		9
		15		**15**

Total Credits: 120

Degree Audit

The degree audit is an automated report reflecting a student's academic progress toward the completion of a degree.

MU students can request a degree audit by logging in to myDegreePlanner (https://mydegreeplanner.missouri.edu). Students may also access myDegreePlanner via myZou, in the Student Center, click on the Academic Progress Tile, then select Request Degree Audit. The audit automatically pulls in the student's MU course work, transfer courses and courses in progress. This is available to current students, admitted students, and those who last attended less than three terms ago.

Past MU students can request a degree audit by contacting the Academic Advising Unit of the division in which they were last enrolled at MU. For contact information, go to https://advising.missouri.edu/contact/.

Prospective students, can access a preliminary MU degree audit via https://www.transferology.com (https://www.transferology.com/). Information on the college credits already earned will have to be manually entered before it can be evaluated against current degree requirements.

For additional details on degree audits, go to https://registrar.missouri.edu/degrees-audits/degree-audits/.

Major and Career Exploration

The University of Missouri has many resources to assist you in exploring majors and career possibilities. For guidance, visit the Majors and Careers (https://career.missouri.edu/career-and-major-exploration/) website or view specific resources below.

- **Change your Major.** If you are considering changing your undergraduate major or are choosing between several majors, schedule an appointment with an advisor in the Discovery Center (https://discoverycenter.missouri.edu/) by calling (573) 884-9700 or through the Discovery Center service in your MU Connect (https://mizzou.starfishsolutions.com/starfish-ops/dl/instructor/serviceCatalog.html?bookmark=service/3761489) success network.
- **Decided on a Major.** If you have decided on a major, visit an academic advisor in the School or College that you are interested in to discuss the process of declaring that major (https://advising.missouri.edu/majors-minors/changing-major/).
- **Identify your Interests and Strengths.** If you would like to learn more about your career interests, abilities, values, and talents, visit the staff at the MU Career Center (https://career.missouri.edu/). No appointment is necessary to explore career options with one of our staff members.
- **Explore MU Majors.** If you would like information about MU majors and degree programs, visit Majors at Mizzou (https://majors.missouri.edu/) or the Degrees, Majors (Degree Programs), Emphasis Areas, Minors and Certificates (https://catalog.missouri.edu/degreesanddegreeprograms/) page in the catalog.

For additional major and career exploration resources, visit Major & Career Exploration (https://catalog.missouri.edu/majorcareerexploration/) in the catalog.