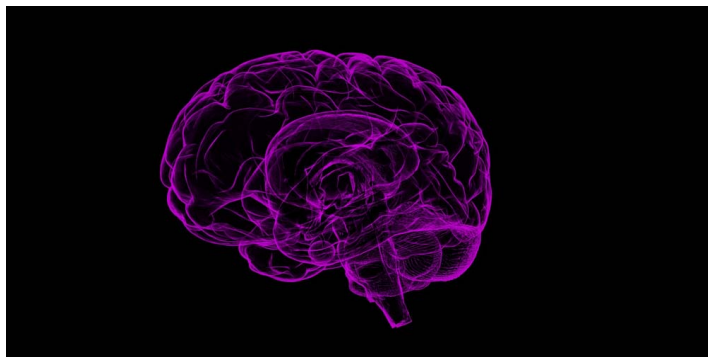


NEUROSCIENCE (BS)



This program was approved for students entering the university in the Summer 2025-Spring 2026 catalog year. For more information about catalog year, go to Catalog Year Information (<https://catalog.louisville.edu/undergraduate/university-wide-unit-specific-policies/catalog-year/>).

Bachelor of Science in Neuroscience

Unit: College of Arts and Sciences (<http://www.louisville.edu/a-s/>)
 Department: Psychological and Brain Sciences (<http://louisville.edu/psychology/>); Anatomical Sciences and Neurobiology (<https://louisville.edu/medicine/departments/anatomy/>)
 Academic Plan Code(s): NEURBS

Program Information

Academic Plan Code(s): NEURBS
 Program Information

The Bachelor of Science in Neuroscience (BS in Neuroscience) is an interdisciplinary degree with a STEM+Health focus. The program trains students to critically assess and analyze ideas and concepts from the diverse disciplines that contribute to the field of neuroscience. Students achieve an in-depth understanding of nervous system function, from the molecular level to the cognitive sciences, and become familiar with the techniques used to measure nervous system function from the cellular level to the whole brain.

Graduates of this program are poised for careers in a wide variety of areas, including neuroscience and health-related fields, the social sciences, and the biological sciences. This program also prepares students for advanced-degree study in graduate school and professional degree programs.

Completion of this degree requires work to be submitted for the department's Learning Outcomes Measurement. For details, contact the department.

Accelerated BS in Neuroscience to MS in Psychological Sciences
 Soaring Scholar Program

The Soaring Scholar accelerated BS/MS program is ideally suited for undergraduate students wishing to pursue a doctoral program in psychology (or related field) or those interested in being more "work-force ready" upon graduating. It is also well-suited for qualified students interested in testing the waters of graduate school or taking a "one step at a time" approach.

Overview

Neuroscience majors who are considering pursuing a master's degree (MS) in Psychological Science can earn a master's degree in less time through the Soaring Scholar program. Students accepted into this program take three graduate courses (9 credit hours) as an undergraduate that apply toward both the bachelor's degree and the eventual master's degree.

Mentorship

Each student accepted into the accelerated program will receive one-on-one mentoring as part of their training. Faculty mentors will guide the research experiences of students in the program. Students without a faculty mentor may not continue in the program.

Research

Research experience is a critical component of the BS/MS. Students must have completed, or be currently enrolled in, PSYC 491 or 492 in order to apply to the Soaring Scholars program. First- and Second-year students should plan ahead and find a PSYC 491 mentor in advance of applying to the Soaring Scholars program. Look through the list of Psychological Science and Clinical Psychology faculty for professors whose research interests you. Email them, and ask if they have openings for a 491 student (let them know you are considering applying for the Soaring Scholars program). Many faculty also post current openings on the Undergraduate Psychology Research page.

Undergraduate students interested in participating in an accelerated dual bachelor's/master's degree offered through the university's Soaring Scholar Program must first meet with their Academic Advisor to determine eligibility and apply to the program. Once accepted, students will receive an official admission letter outlining program policies and details. They will then work with their department and academic advisor to register for classes each semester, ensuring they meet the milestones and academic progress requirements of the Soaring Scholar program. A Soaring Scholar student is considered an undergraduate student until their bachelor's degree is conferred. In their final undergraduate semester, they are expected to apply for admission to their respective master's program.

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Degree Summary

Code	Title	Hours
	General Education Requirements (https://catalog.louisville.edu/undergraduate/general-education-requirements/) ¹	31
	College/School Requirements	13-15
	Program/Major Requirements ¹	33
	Supporting Coursework	42-44
Minimum Total Hours		121

¹ Some credit hours from the General Education Requirements may be satisfied by courses defined by the program, in which case additional electives will be required to complete the minimum hours for the degree.

Specific coursework information can be found on the Degree Requirements tab.

Admission Requirements

Requirements for admission to the BS in Neuroscience:

1. Complete PSYC 201 or (equivalent) and PSYC 305, earning a grade of C or higher.
2. Complete Statistics Requirement (PSYC 301 or BIOL 350), earning a grade of C or higher. Completion of MATH 180 or MATH 205 is required for the degree. For admission to the major, students must have completed the necessary math coursework, or have a math placement score, to satisfy the prerequisites to enroll in MATH 180 or MATH 205.
3. Have an overall cumulative GPA of at least 2.5 (no grades of C-minus or lower in core or supporting coursework may be counted toward requirements for the major).
4. Have completed at least 30 hours of degree-applicable credit.

The Change Major Request form can be found under the Academic Progress tile on ULink.

Soaring Scholar Accelerated BS Psychology/MS Psychological Science Admission Requirements

Interested students must apply to the program by December 1 of their Junior year. Applicants must have completed PSYC 201, PSYC 301, PSYC 302*,

and PSYC 491 or PSYC 492 prior to application. Applicants must have a minimum overall GPA of 3.0 and a 'C' grade or better in courses required for their BS. Students must maintain a GPA of greater than 2.5 during their enrollment in the Soaring Scholar program. Students must enter the Soaring Scholar program with no more than 24 credit hours remaining to complete their BS degree, and they must enter the program with 9 hours of elective credit remaining in their BS degree. Students interested in applying to Soaring Scholars program for Psychology should follow the application process outlined in the Soaring Scholars Application Checklist at: <https://graduate.louisville.edu/academics/programs/soaring/>.

* Students may be currently enrolled in PSYC 302 when applying to the Soaring Scholar program.

General Education

Code	Title	Hours
	General Education Requirements (https://catalog.louisville.edu/undergraduate/general-education-requirements/) [*]	31
The following courses are required by the program and can satisfy the respective General Education Requirement:		
PSYC 201	Introduction to Psychology - SB (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	
BIOL 240	Unity of Life - S (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	
CHEM 201	General Chemistry I - S (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	
CHEM 207	Introduction to Chemical Analysis I - SL (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	
MATH 180	Elements of Calculus - QR (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	
	or MATH 205 Calculus I - QR (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	

*All degrees require the completion of the University-wide General Education Program (link provided above). Some General Education requirements may be met in the requirements for the major or supporting coursework, in which case additional electives may be required to complete the minimum hours for the degree.

College/School Requirements

Code	Title	Hours
Arts & Sciences Requirements		
GEN 100 or GEN 101	Student Success Center First Year Experience Arts & Sciences First Year Experience	1
	Foreign Language ¹	6-8
	Electives in Humanities or Social Sciences at 300+level ²	6
	WR - two approved courses at the 300 level or above ³	
Minimum Total Hours		13-15

Program/Major Requirements

Code	Title	Hours
Program Coursework		
PSYC 201	Introduction to Psychology - SB (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	3
PSYC 301 or BIOL 350	Introduction to Social Statistics Biostatistics	3
PSYC 302	Research Methods for Psychology	3
PSYC 305	Brain and Behavior	3
PSYC 331	Sensation and Perception	3
BIOL 329	Cellular and Molecular Biology	3
PSYC 355	Neuroscience	3
PSYC 382	Cognitive Neuroscience	3
BIOL 465 or BE 354	Principles of Physiology Anatomy and Physiology	3
ASNB 502	Fundamentals of Neuroscience	3
One of the following:		3
ASNB 514	Molecular Neuroscience - CUE (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	
ASNB 517	Seminar on Developmental Neurobiology - CUE (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	
ASNB 530	Origin of Mammalian Sensory Systems and Comparative Neurobiology - CUE (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	
ASNB 566	Synaptic Organization of the Central Nervous System - CUE (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	
Minimum Total Hours		33
Code	Title	Hours
Supporting Courses		
BIOL 240	Unity of Life - S (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	3
BIOL 241	Experimental Biology I: Molecules and Cells - SL (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	1
BIOL 242	Diversity of Life - S (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	3
BIOL 243	Experimental Biology II: Organismal Biology - SL (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	1
MATH 180 or MATH 205	Elements of Calculus - QR (https://catalog.louisville.edu/undergraduate/general-education-requirements/) Calculus I - QR (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	4
CHEM 201	General Chemistry I - S (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	3
CHEM 202	General Chemistry II - S (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	3

CHEM 207	Introduction to Chemical Analysis I - SL (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	1
CHEM 208	Introduction to Chemical Analysis II - SL (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	1
CHEM 209	Introduction to Chemical Analysis III	1
PHYS 221	Fundamentals of Physics I - S (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	3
PHYS 222	Fundamentals of Physics II - S (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	3
PHYS 223	Fundamentals of Physics Lab I - SL (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	1
PHYS 224	Fundamentals of Physics Laboratory II - SL (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	1
Electives ⁴		13-15
Suggested Electives ⁶		
BIOL 330	Genetics and Molecular Biology	
BIOL 331	Genetics and Molecular Biology: Laboratory	
BIOL 415	Biology of the Cell - CUE (https://catalog.louisville.edu/undergraduate/general-education-requirements/), WR (https://catalog.louisville.edu/undergraduate/general-education-requirements/) ⁵	
BIOL 511	Behavioral Endocrinology - CUE (https://catalog.louisville.edu/undergraduate/general-education-requirements/), WR (https://catalog.louisville.edu/undergraduate/general-education-requirements/) ⁵	
BIOL 540	Metabolic Biochemistry	
CHEM 341	Organic Chemistry I	
CHEM 343	Organic Chemistry Laboratory I	
CHEM 342	Organic Chemistry II	
CHEM 344	Organic Chemistry Laboratory II	
CHEM 545	Biochemistry I	
PHIL 360	Technology and Human Values - AH (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	
PHIL 536	Philosophy of Science	
PHIL 458	Mind and Brain: Introduction to Cognitive Science	
PHIL 580	Foundations of Bioethics	
PHIL 581	Current Controversies in Health Care Ethics	
PSYC 307	Cognitive Processes	
PSYC 306	Life Span Developmental Psychology	
PSYC 308	Foundations of Psychopathology	
PSYC 445	Special Topics in Neuroscience - WR (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	
Minimum Total Hours		42-44

Code	Title	Hours
Minimum Total Degree Hours		121-123

At least 50 of the total minimum hours required must be at the 300 level or above.

Students who wish to double major in the BS in Neuroscience and the BS in Psychology degrees must complete 18 credit hours toward the Psychology (PSYC) degree that do not count towards meeting the Neuroscience (NS) degree requirements. These 18 credits must include the following courses: PSYC 306, PSYC 307 and PSYC 308. If these courses are taken as electives for the NS degree, additional PSYC courses must be taken in their place. Students must also complete one PSYC CUE course and one NS CUE course. For elective courses that can count toward either degree, the student must specify whether each course will count for NS or for PSYC.

Code	Title	Hours
Culminating Undergraduate Experience (Graduation Requirement)		
Requirement fulfilled by completing one of the following:		
PSYC 492	Undergraduate Psychology Research - CUE (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	
	or ASNB 492 Undergraduate Neuroscience Research - CUE (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	
PSYC 495	Honors Psychology Research	
	or ASNB 495 Honors Neuroscience Research	
PSYC 496	Honors Psychology Thesis - CUE (https://catalog.louisville.edu/undergraduate/general-education-requirements/), WR (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	
	or ASNB 496 Honors Neuroscience Thesis - CUE (https://catalog.louisville.edu/undergraduate/general-education-requirements/), WR (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	
ASNB 514	Molecular Neuroscience - CUE (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	
ASNB 517	Seminar on Developmental Neurobiology - CUE (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	
ASNB 530	Origin of Mammalian Sensory Systems and Comparative Neurobiology - CUE (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	
ASNB 566	Synaptic Organization of the Central Nervous System - CUE (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	

¹ Completion of the second semester of a single foreign language; hours will vary depending on the language taken

² In addition to courses counted toward General Education

³ May be incorporated into other degree requirements

⁴ Students who satisfy General Education Requirements by courses defined by the program will require additional electives to complete the minimum hours for the degree.

⁵ Does not satisfy CUE requirement for the Neuroscience BS

⁶ Students may select any courses they wish to fulfill the elective credits; however, the faculty suggest that students consider taking electives from the provided list as these courses are aligned with training in the discipline or may be required to fulfill preparation for certain degree paths (such as completing the typical pre-med requirements).

Flight Plan

Year 1		
Fall		
		Hours
GEN 101	Arts & Sciences First Year Experience	1
ENGL 101	Introduction to College Writing - WC (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	3
PSYC 201	Introduction to Psychology - SB (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	3
BIOL 240	Unity of Life - S (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	3
BIOL 241	Experimental Biology I: Molecules and Cells - SL (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	1
CHEM 201	General Chemistry I - S (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	3
CHEM 207	Introduction to Chemical Analysis I - SL (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	1
CHEM 208	Introduction to Chemical Analysis II - SL (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	1
Hours		16
Spring		
ENGL 102	Intermediate College Writing - WC (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	3
BIOL 242	Diversity of Life - S (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	3
BIOL 243	Experimental Biology II: Organismal Biology - SL (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	1
CHEM 202	General Chemistry II - S (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	3
CHEM 209	Introduction to Chemical Analysis III	1
PSYC 305	Brain and Behavior	3
Hours		14
Year 2		
Fall		
BIOL 329	Cellular and Molecular Biology	3
PHYS 221	Fundamentals of Physics I - S (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	3
PHYS 223	Fundamentals of Physics Lab I - SL (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	1
PSYC 355	Neuroscience	3
General Education: Cardinal Core Oral Communication – OC		3
MATH 180 or MATH 205	Elements of Calculus - QR (https://catalog.louisville.edu/undergraduate/general-education-requirements/) or Calculus I - QR (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	3
Hours		16
Spring		
BIOL 465 or BE 354	Principles of Physiology or Anatomy and Physiology	3
PHYS 222	Fundamentals of Physics II - S (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	3

PHYS 224	Fundamentals of Physics Laboratory II - SL (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	1
PSYC 301 or BIOL 350	Introduction to Social Statistics or Biostatistics	3
General Education: Cardinal Core Arts & Humanities – AH ¹		3
Elective		3
Hours		16
Year 3		
Fall		
ASNB 502	Fundamentals of Neuroscience	3
PSYC 302	Research Methods for Psychology	3
PSYC 331	Sensation and Perception	3
Foreign Language		3-4
300+ Elective		3
Hours		15-16
Spring		
Select one of the following:		3
ASNB 517	Seminar on Developmental Neurobiology - CUE (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	
ASNB 566	Synaptic Organization of the Central Nervous System - CUE (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	
Foreign Language		3-4
General Education: Cardinal Core Arts & Humanities – AH ¹		3
General Education: Cardinal Core Historical Perspective – SBH ¹		3
300+ Elective Elective in Humanities or Social Sciences		3
Hours		15-16
Year 4		
Fall		
*See Year 4 Flight Plan Below for Soaring Scholar Program		
300+ WR Elective		3
300+ Elective Elective in Humanities or Social Sciences		3
300+ Elective (Consider ASNB 530 as one option)		3
300+ Elective		3
Elective		3
Hours		15
Spring		
*See Year 4 Flight Plan Below for Soaring Scholar Program		
PSYC 382	Cognitive Neuroscience	3
300+ WR Elective		3
300+ Elective		3
Elective		5
Hours		14
Minimum Total Hours		121-123

¹ At least two of the courses selected to satisfy these General Education/Cardinal Core requirements must also satisfy Diversity requirements (at last once course/3 credits each of U.S./D1 and Global/D2 Diversity coursework).

***Soaring Scholars Follow the Flight Plan Below for Year 4**

Year 4			
Fall			Hours
PSYC 491	Undergraduate Psychology Research		3
or PSYC 492	or Undergraduate Psychology Research - CUE (https://catalog.louisville.edu/undergraduate/general-education-requirements/)		
or PSYC 495	or Honors Psychology Research		
or PSYC 496	or Honors Psychology Thesis - CUE (https://catalog.louisville.edu/undergraduate/general-education-requirements/), WR (https://catalog.louisville.edu/undergraduate/general-education-requirements/)		
PSYC 610		Advanced Statistics I	3
Undergraduate Elective (Consider ASNB 530)			3
Undergraduate Elective			3
Undergraduate Elective			3
Hours			15
Spring			
PSYC 591	Graduate Psychology Research		3
or PSYC 595	or Honors Psychology Research		
or PSYC 596	or Honors Psychology Thesis - WR (https://catalog.louisville.edu/undergraduate/general-education-requirements/)		
or PSYC 602	or Research in Experimental Psychology		
PSYC 611		Advanced Statistics II	3
PSYC 382		Cognitive Neuroscience	3
Undergraduate Elective			3
Undergraduate Elective			3
Hours			15
Minimum Total Hours			30