

NEUROSCIENCE - B.S.

College of Arts and Sciences

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Description

The Bachelor of Science degree in Neuroscience offers a broad-based study of the mechanisms of brain function from the cell and molecular level through cognition and behavior. This major is for students interested in medicine, other health professions, research and graduate studies in biology, neuroscience and psychology. The major also will also prepare students for careers in industries, including biotechnology, pharmaceuticals, research administration and policy, science communication, teaching and other science-related businesses.

Fully Offered At:

- Kent Campus

Admission Requirements

The university affirmatively strives to provide educational opportunities and access to students with varied backgrounds, those with special talents and adult students who graduated from high school three or more years ago.

Freshman Students on the Kent Campus: The freshman admission policy on the Kent Campus is selective. Admission decisions are based upon the following: cumulative grade point average, ACT and/or SAT scores, strength of high school college preparatory curriculum and grade trends. The Admissions Office at the Kent Campus may defer the admission of students who do not meet admissions criteria but who demonstrate areas of promise for successful college study. Deferred applicants may begin their college coursework at one of seven regional campuses of Kent State University. For more information on admissions, including additional requirements for some academic programs, visit the admissions website for new freshmen.

Freshman Students on the Regional Campuses: Kent State campuses at Ashtabula, East Liverpool, Geauga, Salem, Stark, Trumbull and Tuscarawas, as well as the Regional Academic Center in Twinsburg, have open enrollment admission for students who hold a high school diploma, GED or equivalent.

English Language Proficiency Requirements for International Students:

All international students must provide proof of English language proficiency (unless they meet specific exceptions) by earning a minimum 525 TOEFL score (71 on the Internet-based version), minimum 75 MELAB score, minimum 6.0 IELTS score or minimum 48 PTE score, or by

completing the ESL level 112 Intensive Program. For more information on international admission, visit the Office of Global Education's admission website.

Transfer, Transitioning and Former Students: For more information about admission criteria for transfer, transitioning and former students, please visit the admissions website.

Program Learning Outcomes

Graduates of this program will be able to:

- Demonstrate an understanding of fundamental principles of neuroscience.
- Acquire fundamental skills necessary for laboratory investigations into central nervous system function.
- Demonstrate an understanding of proper experimental design, data analysis and communication of research results.
- Demonstrate a greater knowledge and appreciation of the role neuroscience plays in societal issues, such as those related to neurological disorders, mental health, medicine and human and animal behavior.

University Requirements

All students in a bachelor's degree program at Kent State University must complete the following university requirements for graduation.

NOTE: University requirements may be fulfilled in this program by specific course requirements. Please see Program Requirements for details.

Destination Kent State: First Year Experience	1
Course is not required for students with 25 transfer credits, excluding College Credit Plus, or age 21+ at time of admission.	
Diversity Domestic/Global (DIVD/DIVG)	2 courses
Students must successfully complete one domestic and one global course, of which one must be from the Kent Core.	
Experiential Learning Requirement (ELR)	varies
Students must successfully complete one course or approved experience.	
Kent Core (see table below)	36-37
Writing-Intensive Course (WIC)	1 course
Students must earn a minimum C grade in the course.	
Upper-Division Requirement	39 (or 42)
Students must successfully complete 39 upper-division (numbered 30000 to 49999) credit hours to graduate. Students in a B.A. and/or B.S. degree in the College of Arts and Sciences must complete 42 upper-division credit hours.	
Total Credit Hour Requirement	120
Some bachelor's degrees require students to complete more than 120 credit hours.	

Kent Core Requirements

Kent Core Composition (KCMP)	6
Kent Core Mathematics and Critical Reasoning (KMCR)	3
Kent Core Humanities and Fine Arts (KHUM/KFA) (min one course each)	9
Kent Core Social Sciences (KSS) (must be from two disciplines)	6
Kent Core Basic Sciences (KBS/KLAB) (must include one laboratory)	6-7

Kent Core Additional (KADL)	6
Total Credit Hours:	36-37

Program Requirements

Major Requirements

Code	Title	Credit Hours
Major Requirements (courses count in major GPA)		
BSCI 10120	BIOLOGICAL FOUNDATIONS (KBS) (KLAB)	4
BSCI 30140	CELL BIOLOGY	4
BSCI 30156	ELEMENTS OF GENETICS	3
BSCI 40600	WRITING IN THE BIOLOGICAL SCIENCES (WIC) ¹	1
or PSYC 41980	RESEARCH WRITING IN PSYCHOLOGY (WIC)	
or PSYC 41990	WRITING IN PSYCHOLOGY (WIC)	
CHEM 10060	GENERAL CHEMISTRY I (KBS)	4
CHEM 10061	GENERAL CHEMISTRY II (KBS)	4
CHEM 10062	GENERAL CHEMISTRY I LABORATORY (KBS) (KLAB)	1
CHEM 10063	GENERAL CHEMISTRY II LABORATORY (KBS) (KLAB)	1
MATH 11010	ALGEBRA FOR CALCULUS (KMCR)	3
NEUR 10100	SEMINAR IN NEUROSCIENCE	1
NEUR 30100	NEUROSCIENCE I	3
NEUR 30200	NEUROSCIENCE II	3
NEUR 30300	EXPERIMENTAL METHODS IN NEUROSCIENCE	1
PSYC 11762	GENERAL PSYCHOLOGY (DIVD) (KSS)	3
PSYC 21621	QUANTITATIVE METHODS IN PSYCHOLOGY I	3
PSYC 31574	RESEARCH METHODS IN PSYCHOLOGY (ELR)	3
Neuroscience Electives, choose from the following:		27
BSCI 40147	DEVELOPMENTAL NEUROBIOLOGY	
BSCI 40152	MOLECULAR MECHANISMS OF DISEASE: NEUROLOGICAL DISORDERS	
BSCI 40157	NEUROBIOLOGY OF DRUG ADDICTION	
BSCI 40158	MOLECULAR BIOLOGY	
BSCI 40159	MOLECULAR BIOLOGY LABORATORY (ELR) (WIC)	
BSCI 40431	NEUROENDOCRINOLOGY	
BSCI 40432	ENDOCRINOLOGY	
BSCI 40450	BIOLOGICAL CLOCKS	
BSCI 40460	ADVANCED HUMAN PHYSIOLOGY	
BSCI 40462	ADVANCED HUMAN PHYSIOLOGY: READINGS AND CASE STUDIES	
BSCI 40515	ANIMAL BEHAVIOR	
BSCI 40519	HORMONES AND BEHAVIOR	
NEUR 40192	INTERNSHIP IN NEUROSCIENCE (ELR) ²	
NEUR 40195	SPECIAL TOPICS IN NEUROSCIENCE	
NEUR 40196	INDIVIDUAL INVESTIGATION IN NEUROSCIENCE	
PSYC 31634	ANIMAL COGNITION	
PSYC 40111	ABNORMAL PSYCHOLOGY	
PSYC 40383	INTRODUCTION TO CLINICAL PSYCHOLOGY	
PSYC 40446	COGNITIVE NEUROSCIENCE	
PSYC 41043	BASIC LEARNING PROCESSES	
PSYC 43001	CLINICAL NEUROANATOMY	
PSYC 43002	CURRENT TECHNIQUES IN BEHAVIORAL NEUROSCIENCE	

PSYC 43003	NEURAL MECHANISMS OF LEARNING AND MEMORY	
PSYC 47387	NEUROPSYCHOPHARMACOLOGY	
Additional Requirements (courses do not count in major GPA)		
UC 10097	DESTINATION KENT STATE: FIRST YEAR EXPERIENCE	1
Foreign Language (see Foreign Language College Requirement below)		8
Kent Core Composition		6
Kent Core Humanities and Fine Arts (minimum one course from each)		9
Kent Core Social Sciences (must be from two disciplines)		3
General Electives (total credit hours depends on earning 120 credit hours, including 42 upper-division credit hours)		24
Minimum Total Credit Hours:		120

- A minimum C grade must be earned to fulfill the writing-intensive requirement.
- A maximum 6 credit hours of NEUR 40192 may count toward the major.

Graduation Requirements

Minimum Major GPA	Minimum Overall GPA
2.000	2.000

Foreign Language College Requirement

- Students pursuing the Bachelor of Science degree in the College of Arts and Sciences must complete 8 credit hours of foreign language. ¹
- Minimum Elementary I and II of the same language

- All students with prior foreign language experience should take the foreign language placement test to determine the appropriate level at which to start. Some students may begin their university foreign language experience beyond the Elementary I level and will complete the requirement with fewer credit hours and fewer courses. This may be accomplished by: (1) passing a course beyond the Elementary I through Intermediate II level or (2) receiving credit through Credit by Exam (CBE), the College Level Examination Program (CLEP), the Advanced Placement (AP) exam or credit through the International Baccalaureate (IB) program; or (3) being designated a "native speaker" of a non-English language (consult with the College of Arts and Sciences Advising Office for additional information). When students complete the requirement with fewer than 8 credit hours and two courses, they will complete the remaining hours with general electives.

Roadmap

This roadmap is a recommended semester-by-semester plan of study for this major. However, courses designated as critical (!) must be completed in the semester listed to ensure a timely graduation.

Semester One		Credits
BSCI 10120	BIOLOGICAL FOUNDATIONS (KBS) (KLAB)	4
CHEM 10060	GENERAL CHEMISTRY I (KBS)	4
CHEM 10062	GENERAL CHEMISTRY I LABORATORY (KBS) (KLAB)	1
MATH 11010	ALGEBRA FOR CALCULUS (KMCR)	3
NEUR 10100	SEMINAR IN NEUROSCIENCE	1
UC 10097	DESTINATION KENT STATE: FIRST YEAR EXPERIENCE	1
Credit Hours		14

Semester Two

BSCI 30140	CELL BIOLOGY	4
CHEM 10061	GENERAL CHEMISTRY II (KBS)	4
CHEM 10062	GENERAL CHEMISTRY I LABORATORY (KBS) (KLAB)	1
PSYC 11762	GENERAL PSYCHOLOGY (DIVD) (KSS)	3
Kent Core Requirement		3
Credit Hours		15

Semester Three

BSCI 30156	ELEMENTS OF GENETICS	3
NEUR 30100	NEUROSCIENCE I	3
PSYC 21621	QUANTITATIVE METHODS IN PSYCHOLOGY I	3
Foreign Language Requirement		4
Kent Core Requirement		3
Credit Hours		16

Semester Four

NEUR 30200	NEUROSCIENCE II	3
NEUR 30300	EXPERIMENTAL METHODS IN NEUROSCIENCE	1
PSYC 31574	RESEARCH METHODS IN PSYCHOLOGY (ELR)	3
Foreign Language Requirement		4
Kent Core Requirement		3
Credit Hours		14

Semester Five

Neuroscience Electives		9
Kent Core Requirement		3
Kent Core Requirement		3
Credit Hours		15

Semester Six

BSCI 40600	WRITING IN THE BIOLOGICAL SCIENCES (WIC) or PSYC 41980 or PSYC 41990	1
	or RESEARCH WRITING IN PSYCHOLOGY (WIC) or WRITING IN PSYCHOLOGY (WIC)	
Neuroscience Electives		9
Kent Core Requirement		3
General Elective		3
Credit Hours		16

Semester Seven

Neuroscience Electives		6
General Electives		9
Credit Hours		15

Semester Eight

Neuroscience Elective		3
General Electives		12
Credit Hours		15
Minimum Total Credit Hours:		120