NEUROSCIENCE - B.S.
College of Arts and Sciences
Department of Psychology
Department of Biological Sciences

Contact Information
• Program Coordinator: Wilson Chung, Ph.D. | neuro undergrad@kent.edu (Neuroundergrad@kent.edu) | 330-672-3641
• Speak with an Advisor
• Chat with an Admissions Counselor

Fully Offered
• Kent Campus

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 will also prepare students for careers in industries, including biotechnology, pharmaceuticals, research administration and policy, science communication, teaching and other science-related businesses.

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 first-year students.

Freshman Students on the Regional Campuses: Kent State campuses at Ashtabula, East Liverpool, Geauga, Salem, Stark, Trumbull and Tuscarawas, as well as the Twinsburg Academic Center, 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, minimum 48 PTE score or minimum 100 DET 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.

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

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

Neuroscience - B.S.
# Program Requirements

## Major Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSCI 10120</td>
<td>BIOLOGICAL FOUNDATIONS (KBS) (KLAB)</td>
<td>4</td>
</tr>
<tr>
<td>BSCI 30140</td>
<td>CELL BIOLOGY</td>
<td>4</td>
</tr>
<tr>
<td>BSCI 30156</td>
<td>ELEMENTS OF GENETICS</td>
<td>3</td>
</tr>
<tr>
<td>BSCI 40600</td>
<td>WRITING IN THE BIOLOGICAL SCIENCES (WIC) 1</td>
<td>1</td>
</tr>
<tr>
<td>or PSYC 41980</td>
<td>RESEARCH WRITING IN PSYCHOLOGY (WIC)</td>
<td></td>
</tr>
<tr>
<td>or PSYC 41990</td>
<td>WRITING IN PSYCHOLOGY (WIC)</td>
<td></td>
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<tr>
<td>CHEM 10060</td>
<td>GENERAL CHEMISTRY I (KBS)</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 10061</td>
<td>GENERAL CHEMISTRY II (KBS)</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 10062</td>
<td>GENERAL CHEMISTRY I LABORATORY (KBS) (KLAB)</td>
<td>1</td>
</tr>
<tr>
<td>CHEM 10063</td>
<td>GENERAL CHEMISTRY II LABORATORY (KBS) (KLAB)</td>
<td>1</td>
</tr>
<tr>
<td>MATH 11010</td>
<td>ALGEBRA FOR CALCULUS (KMCR)</td>
<td>3</td>
</tr>
<tr>
<td>NEUR 10100</td>
<td>SEMINAR IN NEUROSCIENCE</td>
<td>1</td>
</tr>
<tr>
<td>NEUR 30100</td>
<td>NEUROSCIENCE I</td>
<td>3</td>
</tr>
<tr>
<td>NEUR 30200</td>
<td>NEUROSCIENCE II</td>
<td>3</td>
</tr>
<tr>
<td>NEUR 30300</td>
<td>EXPERIMENTAL METHODS IN NEUROSCIENCE</td>
<td>1</td>
</tr>
<tr>
<td>PSYC 11762</td>
<td>GENERAL PSYCHOLOGY (DIVD) (KSS)</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 21621</td>
<td>QUANTITATIVE METHODS IN PSYCHOLOGY I</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 31574</td>
<td>RESEARCH METHODS IN PSYCHOLOGY (ELR)</td>
<td>3</td>
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<tr>
<td>Neuroscience Electives, choose from the following:</td>
<td>27</td>
<td></td>
</tr>
<tr>
<td>BSCI 40147</td>
<td>DEVELOPMENTAL NEUROBIOLOGY</td>
<td></td>
</tr>
<tr>
<td>BSCI 40152</td>
<td>MOLECULAR MECHANISMS OF DISEASE: NEUROLOGICAL DISORDERS</td>
<td></td>
</tr>
<tr>
<td>BSCI 40157</td>
<td>NEUROBIOLOGY OF DRUG ADDICTION</td>
<td></td>
</tr>
<tr>
<td>BSCI 40158</td>
<td>MOLECULAR BIOLOGY</td>
<td></td>
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<tr>
<td>BSCI 40159</td>
<td>MOLECULAR BIOLOGY LABORATORY (ELR) (WIC)</td>
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<tr>
<td>BSCI 40431</td>
<td>NEUROENDOCRINOLOGY</td>
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<tr>
<td>BSCI 40432</td>
<td>ENDOCRINOLOGY</td>
<td></td>
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<tr>
<td>BSCI 40450</td>
<td>BIOLOGICAL CLOCKS</td>
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<tr>
<td>BSCI 40460</td>
<td>ADVANCED HUMAN PHYSIOLOGY</td>
<td></td>
</tr>
<tr>
<td>BSCI 40462</td>
<td>ADVANCED HUMAN PHYSIOLOGY: READINGS AND CASE STUDIES</td>
<td></td>
</tr>
<tr>
<td>BSCI 40515</td>
<td>ANIMAL BEHAVIOR</td>
<td></td>
</tr>
<tr>
<td>BSCI 40519</td>
<td>HORMONES AND BEHAVIOR</td>
<td></td>
</tr>
<tr>
<td>NEUR 40192</td>
<td>INTERNSHIP IN NEUROSCIENCE (ELR) 2</td>
<td></td>
</tr>
<tr>
<td>NEUR 40195</td>
<td>SPECIAL TOPICS IN NEUROSCIENCE</td>
<td></td>
</tr>
<tr>
<td>NEUR 40196</td>
<td>INDIVIDUAL INVESTIGATION IN NEUROSCIENCE</td>
<td></td>
</tr>
<tr>
<td>PSYC 31634</td>
<td>ANIMAL COGNITION</td>
<td></td>
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<tr>
<td>PSYC 40111</td>
<td>ABNORMAL PSYCHOLOGY</td>
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</tr>
<tr>
<td>PSYC 40383</td>
<td>INTRODUCTION TO CLINICAL PSYCHOLOGY</td>
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</tr>
<tr>
<td>PSYC 40446</td>
<td>COGNITIVE NEUROSCIENCE</td>
<td></td>
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<tr>
<td>PSYC 41043</td>
<td>BASIC LEARNING PROCESSES</td>
<td></td>
</tr>
<tr>
<td>PSYC 43001</td>
<td>CLINICAL NEUROANATOMY</td>
<td></td>
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<tr>
<td>PSYC 43002</td>
<td>CURRENT TECHNIQUES IN BEHAVIORIAL NEUROSCIENCE</td>
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<tr>
<td>PSYC 43003</td>
<td>NEURAL MECHANISMS OF LEARNING AND MEMORY</td>
<td></td>
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<tr>
<td>PSYC 47387</td>
<td>NEUROPSYCHOPHARMACOLOGY</td>
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Additional Requirements (courses do not count in the major GPA)

## Graduation Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>UC 10097</td>
<td>DESTINATION KENT STATE: FIRST YEAR EXPERIENCE</td>
<td>1</td>
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</table>

<table>
<thead>
<tr>
<th>Foreign Language College Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students pursuing the Bachelor of Science degree in the College of Arts and Sciences must complete 8 credit hours of foreign language. 1</td>
</tr>
</tbody>
</table>

1 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.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semester One</td>
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</tr>
<tr>
<td>BSCI 10120</td>
<td>BIOLOGICAL FOUNDATIONS (KBS) (KLAB)</td>
<td>4</td>
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</tbody>
</table>

| Credit Hours | 14 |

<table>
<thead>
<tr>
<th>Semester Two</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>BSCI 30140</td>
<td>CELL BIOLOGY</td>
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<tr>
<td>CHEM 10061</td>
<td>GENERAL CHEMISTRY II (KBS)</td>
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<td>GENERAL CHEMISTRY II LABORATORY (KBS) (KLAB)</td>
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<tr>
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<td>GENERAL PSYCHOLOGY (DIVD) (KSS)</td>
<td>3</td>
</tr>
<tr>
<td>Kent Core Requirements</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

| Credit Hours | 15 |
### Semester Three

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSCI 30156</td>
<td>ELEMENTS OF GENETICS</td>
<td>3</td>
</tr>
<tr>
<td>NEUR 30100</td>
<td>NEUROSCIENCE I</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 21621</td>
<td>QUANTITATIVE METHODS IN PSYCHOLOGY I</td>
<td>3</td>
</tr>
</tbody>
</table>

Foreign Language Requirement: 4  
Kent Core Requirement: 3

Credit Hours: 16

### Semester Four

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEUR 30200</td>
<td>NEUROSCIENCE II</td>
<td>3</td>
</tr>
<tr>
<td>NEUR 30300</td>
<td>EXPERIMENTAL METHODS IN NEUROSCIENCE</td>
<td>1</td>
</tr>
<tr>
<td>PSYC 31574</td>
<td>RESEARCH METHODS IN PSYCHOLOGY (ELR)</td>
<td>3</td>
</tr>
</tbody>
</table>

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

- Neuroscience Electives: 9
- Kent Core Requirement: 3  
- General Elective: 3

Credit Hours: 16

### Semester Seven

- Neuroscience Electives: 6  
- General Elective: 9

Credit Hours: 15

### Semester Eight

- Neuroscience Electives: 3  
- General Electives: 12

Credit Hours: 15

Minimum Total Credit Hours: 120