BIOLOGICAL SCIENCES - INTEGRATIVE PHYSIOLOGY AND NEUROBIOLOGY - PH.D.

College of Arts and Sciences
Department of Biological Sciences
www.kent.edu/biology

Examples of Possible Careers*

Biological scientists, all other
- 2.2% slower than the average
- 44,700 number of jobs
- $85,290 potential earnings

Biological science teachers, postsecondary
- 9.3% much faster than the average
- 64,700 number of jobs
- $85,600 potential earnings

Medical scientists, except epidemiologists
- 6.1% faster than the average
- 138,300 number of jobs
- $91,510 potential earnings

Contact Information
- Program Coordinator: John Johnson | bscigrad@kent.edu | 330-672-3849
- Chat with an Admissions Counselor

Fully Offered
- Kent Campus

Admission Terms
- Fall

Program Learning Outcomes
Graduates of this program will be able to:
1. Understand advanced biological concepts beyond the scope of the typical undergraduate degree and to increase the depth of their knowledge through coursework and hands-on experiences.
2. Apply scientific principles and appreciate work outside of their particular field.
3. Effectively communicate about science with colleagues as well as those outside of the student's area of expertise.
4. Develop the necessary laboratory skills that will allow testing of hypotheses.

Program Requirements

Major Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
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<tbody>
<tr>
<td>BSCI 70104</td>
<td>BIOLOGICAL STATISTICS ¹</td>
<td>4</td>
</tr>
<tr>
<td>BSCI 70184</td>
<td>RESPONSIBLE CONDUCT IN RESEARCH AND</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>TEACHING-BIOLOGICAL SCIENCES ²</td>
<td></td>
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<tr>
<td>BSCI 70491</td>
<td>SEMINAR IN PHYSIOLOGY (repeated each</td>
<td>3-6</td>
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<tr>
<td></td>
<td>semester until candidacy)</td>
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</tr>
<tr>
<td>BSCI 80199</td>
<td>DISSERTATION I ³</td>
<td>30</td>
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</tbody>
</table>

¹ Student deficiencies in these areas at the time of admission shall be rectified during the first year of graduate study.

*Note
Source of occupation titles and labor data is from the U.S. Bureau of Labor Statistics' Occupational Outlook Handbook. Data comprises projected percent change in employment over the next 10 years; nation-wide employment numbers; and the yearly median wage at which half of the workers in the occupation earned more than that amount and half earned less.

Description
The Ph.D. degree in Biological Sciences–Integrative Physiology and Neurobiology is the study of a broad range of topics, including endocrinology, neuroscience, immunology, reproductive biology and other regulatory systems. Students have access to resources for physiological research, including a vivarium, tissue culture facility, confocal microscope/visualization facility, laser capture microscope, genomics and proteomics facilities.

Admission Requirements
- Bachelor's degree or higher from an accredited college or university in the natural sciences for unconditional admission
- Strong background in biology and related subjects such as chemistry and mathematics¹
- Minimum 3.000 GPA on a 4.000 point scale for unconditional admission
- Official transcript(s)
- GRE scores
- Goal statement
- Three letters of recommendation
- A list of up to five potential faculty advisors
- English language proficiency - all international students must provide proof of English language proficiency (unless they meet specific exceptions) by earning one of the following:
  - Minimum 587 TOEFL PBT score (paper-based version)
  - Minimum 94 TOEFL IBT score (Internet-based version)
  - Minimum 82 MELAB score
  - Minimum 7.0 IELTS score
  - Minimum 65 PTE score
  - Minimum 120 Duolingo English Test score

Before admission can be completed, a prospective student must be accepted by a faculty member in the program who will act as adviser. For more information about graduate admissions, please visit the Graduate Studies admission website. For more information on international admission, visit the Office of Global Education's admission website.

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<td>Student Seminar Presentation 5</td>
<td>48-51</td>
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Student Seminar Presentation 5

Minimum Total Credit Hours for Post-Baccalaureate Students 90

Minimum Total Credit Hours for Post-Master's Students 60

1 Students may substitute a different graduate-level statistics course for BSCI 70104, if deemed appropriate by the students' advisor/guidance committee.

2 Students are required to take BSCI 70184 their first semester (or the following fall semester for those starting their studies in the spring semester).

3 Doctoral candidates, upon admission to candidacy, must register for BSCI 80199 for a total of 30 hours. It is expected that doctoral candidates will continuously register for BSCI 80199, and thereafter BSCI 80299, each semester, until all requirements for the degree have been met. It is expected that candidates will present the results of their research in a defense open to students and faculty, at which the dissertation will be presented and defended before the dissertation committee, with not more than one negative vote, in order to be recommended to the Department of Biological Sciences and the College of Arts and Sciences for degree conferral.

4 Students are to select courses in consultation with their academic faculty advisor. It is recommended that students enroll in BSCI 70142 and BSCI 70195 for selected current topics. Additional coursework should provide the necessary skills and/or knowledge base to aid in the completion of the student's research project and be beneficial for their professional development.

5 Students are required to present at least one departmental seminar about their work.

**Graduation Requirement**

Students must complete a minimum 20 credit hours of graded (A-F) courses toward their degree.

**Candidacy for the Degree**

After completing the required coursework, students complete the doctoral program by being admitted to candidacy, by proposing a research project to the faculty, and by completing and defending that research with a written dissertation before a faculty committee.

**Candidacy Exams:** The student is admitted to doctoral candidacy following successful completion of both written and oral candidacy examinations. These exams are based on prior coursework and coursework taken in this graduate program as determined by the student's academic Guidance Committee, which must consist of at least three eligible faculty members. The advisor(s) and a majority of members of the Guidance Committee must be members of the appropriate graduate program. This committee is responsible for determining the student's academic curriculum and for administering the candidacy exams. Following successful completion of candidacy exams, the student registers for dissertation - BSCI 80199 for two semesters and, thereafter, for BSCI 80299 continually until complete.

**Prospectus:** Following completion of the candidacy exam, the doctoral student must successfully prepare, present and defend a formal prospectus of the research project before his or her dissertation committee.

**Dissertation and Final Defense:** The doctoral candidate must complete a dissertation. It is expected that the candidate will present the results of her or his research in a defense open to students and faculty, at which the dissertation will be presented and defended before the dissertation committee, with not more than one negative vote, in order to be recommended to the department and College of Arts and Sciences for degree conferral.