Human Physiology, B.S.

Learning Outcomes
The B.S. degree in human physiology:

• provides students a broad education in the health sciences;
• prepares students to employ their fundamental knowledge of human physiology and health sciences together with the scientific method to solve problems in their chosen professional and/or graduate career fields; and
• instills in students the understanding and appreciation of the relevance of healthy behaviors to a fulfilling and productive life, and the importance of lifelong learning in the rapidly evolving fields of physiology and the health sciences.

Requirements
The Bachelor of Science with a major in human physiology requires a minimum of 120 s.h., including 62 s.h. of work for the major (31 s.h. in health and human physiology and 31 s.h. in required cognate courses). Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences GE CLAS Core.

The major in human physiology is designed primarily for individuals who intend to continue their education beyond the B.S. in the health professions, including medicine, dentistry, optometry, physician assistant, physical therapy, and podiatry, and for those who intend to pursue graduate degrees in basic life sciences.

Students may earn a Bachelor of Science degree with a major in human physiology or a Bachelor of Arts degree with a major in health and human physiology, but not both.

Students who major in human physiology may not earn the minor in human physiology or the minor in physical activity and nutrition science.

The B.S. with a major in human physiology requires the following course work:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HHP:2200</td>
<td>Physical Activity and Health</td>
<td>3</td>
</tr>
<tr>
<td>HHP:3115</td>
<td>Anatomy for Human Physiology with Lab</td>
<td>5</td>
</tr>
<tr>
<td>HHP:3550</td>
<td>Human Physiology with Laboratory</td>
<td>5</td>
</tr>
</tbody>
</table>

At least 18 s.h. from these, of which at least 12 s.h. must be in HHP course work:

HHP:3230/PSY:3230 Psychopharmacology 3

HHP:3300 Human Growth and Motor Development 3
HHP:3450 Immunology in Health and Disease 3
HHP:3900 Writing for Health and Human Physiology 3
HHP:4110 Advanced Human Anatomy Laboratory 4
HHP:4130 Skeletal Muscle Physiology 3
HHP:4150 Clinical Exercise Physiology 3
HHP:4200 Metabolic Exercise Testing and Prescription 4
HHP:4210 Musculoskeletal Exercise Testing and Prescription 4
HHP:4220 Biomechanics of Human Motion 3
HHP:4250 Human Pathophysiology 3
HHP:4260 Respiratory Pathophysiology 3
HHP:4410 Exercise Physiology 3
HHP:4440 Physiology of Nutrition 3
HHP:4450 Genetic Basis of Disease 3
HHP:4460 Cardiovascular Physiology 3
HHP:4465 Environmental Exercise Physiology 3
HHP:4470 Physiology of Aging 3
HHP:4480 Introduction to Human Pharmacology 3
HHP:4500 Undergraduate Independent Study arr.
HHP:4510 Energy Metabolism in Health and Disease 3
HHP:4900 Honors Research II 3
BIOC:3110 Biochemistry 3
BIOL:2211 Genes, Genomes, and the Human Condition 3
BIOL:2254 Endocrinology 3
BIOL:2512 Fundamental Genetics 4
BIOL:2603 Mechanisms of Aging 3
BIOL:2723 Cell Biology 3
BIOL:2753 Introduction to Neurobiology 3
BIOL:3233 Introduction to Developmental Biology 3
BIOL:3373 Human Population Genetics and Variation 3
MICR:2157 General Microbiology 3
MICR:2158 General Microbiology Laboratory 2
MICR:3168 Viruses and Human Disease 3
PSY:3220 Behavioral Neuroscience 3
SOC:3510 Medical Sociology 3

Cognate Areas
Students must earn a minimum of 31 s.h. in cognate areas—subjects outside of human physiology—by completing courses from the following lists.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOC:3110</td>
<td>Biochemistry</td>
<td>3</td>
</tr>
<tr>
<td>BIOL:2211</td>
<td>Genes, Genomes, and the Human Condition</td>
<td>3</td>
</tr>
<tr>
<td>BIOL:2254</td>
<td>Endocrinology</td>
<td>3</td>
</tr>
<tr>
<td>BIOL:2512</td>
<td>Fundamental Genetics</td>
<td>4</td>
</tr>
<tr>
<td>BIOL:2603</td>
<td>Mechanisms of Aging</td>
<td>3</td>
</tr>
<tr>
<td>BIOL:2723</td>
<td>Cell Biology</td>
<td>3</td>
</tr>
<tr>
<td>BIOL:2753</td>
<td>Introduction to Neurobiology</td>
<td>3</td>
</tr>
<tr>
<td>BIOL:3233</td>
<td>Introduction to Developmental Biology</td>
<td>3</td>
</tr>
<tr>
<td>BIOL:3373</td>
<td>Human Population Genetics and Variation</td>
<td>3</td>
</tr>
<tr>
<td>MICR:2157</td>
<td>General Microbiology</td>
<td>3</td>
</tr>
<tr>
<td>MICR:2158</td>
<td>General Microbiology Laboratory</td>
<td>2</td>
</tr>
<tr>
<td>MICR:3168</td>
<td>Viruses and Human Disease</td>
<td>3</td>
</tr>
<tr>
<td>PSY:3220</td>
<td>Behavioral Neuroscience</td>
<td>3</td>
</tr>
<tr>
<td>SOC:3510</td>
<td>Medical Sociology</td>
<td>3</td>
</tr>
</tbody>
</table>
**Honors in the Major**

Students have the opportunity to graduate with honors in the major. Departmental honors students must maintain an overall g.p.a. of at least 3.33 in work for their major.

In order to graduate with honors in the major, students must successfully complete the honors research course sequence HHP:4800 Honors Research I and HHP:4900 Honors Research II; write an honors thesis that is deposited with the University of Iowa Honors Program and is judged to be of honors quality; and make an oral or poster presentation of the honors thesis in an approved venue, such as a department research seminar or professional conference.

**University of Iowa Honors Program**

In addition to honors in the major, students have opportunities for honors study and activities through membership in the University of Iowa Honors Program. Visit Honors at Iowa to learn about the University’s honors program.

Membership in the UI Honors Program is not required to earn honors in the human physiology major.

**Academic Plans**

**Four-Year Graduation Plan**

The following checkpoints list the minimum requirements students must complete by certain semesters in order to stay on the University’s Four-Year Graduation Plan. Courses in the major are those required to complete the major; they may be offered by departments other than the major department.

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**Before the fifth semester begins:** calculus and at least six more courses in the major

**Before the seventh semester begins:** at least six more courses in the major (total of 13) and at least 90 s.h. earned toward the degree

**Before the eighth semester begins:** at least two more courses in the major (total of 15)

**During the eighth semester:** enrollment in all remaining course work in the major, all remaining GE CLAS Core courses, and a sufficient number of semester hours to graduate

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**Sample Plan of Study**

Sample plans represent one way to complete a program of study. Actual course selection and sequence will vary and should be discussed with an academic advisor. For additional sample plans, see MyUI.

**Human Physiology, B.S.**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fall</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENGL:1200</td>
<td>The Interpretation of Literature or Rhetoric</td>
<td>3 - 4</td>
</tr>
<tr>
<td>CHEM:1110</td>
<td>Principles of Chemistry I</td>
<td>4</td>
</tr>
<tr>
<td>GE CLAS Core: Diversity and Inclusion</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>GE CLAS Core: Social Sciences</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CSI:1600</td>
<td>Success at Iowa</td>
<td>2</td>
</tr>
<tr>
<td><strong>Spring</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIOL:1411</td>
<td>Foundations of Biology</td>
<td>4</td>
</tr>
<tr>
<td>CHEM:1120</td>
<td>Principles of Chemistry II</td>
<td>4</td>
</tr>
<tr>
<td>ENGL:1200</td>
<td>The Interpretation of Literature or Rhetoric</td>
<td>3 - 4</td>
</tr>
<tr>
<td>MATH:1460</td>
<td>Calculus for the Biological Sciences</td>
<td>4</td>
</tr>
<tr>
<td><strong>Second Year</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HHP:2200</td>
<td>Physical Activity and Health</td>
<td>3</td>
</tr>
<tr>
<td>HHP:3115</td>
<td>Anatomy for Human Physiology with Lab</td>
<td>5</td>
</tr>
<tr>
<td>BIOL:1412</td>
<td>Diversity of Form and Function</td>
<td>4</td>
</tr>
<tr>
<td>GE CLAS Core: World Languages First Level Proficiency or elective course</td>
<td>4 - 5</td>
<td></td>
</tr>
<tr>
<td><strong>Spring</strong></td>
<td></td>
<td></td>
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<tr>
<td>HHP:3550</td>
<td>Human Physiology with Laboratory</td>
<td>5</td>
</tr>
<tr>
<td>GE CLAS Core: Historical Perspectives</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>GE CLAS Core: Literary, Visual, and Performing Arts</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>GE CLAS Core: World Languages Second Level Proficiency or elective course</td>
<td>4 - 5</td>
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<tr>
<td>Elective course</td>
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<tr>
<td><strong>Third Year</strong></td>
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<td></td>
</tr>
<tr>
<td>PHYS:1511</td>
<td>College Physics I</td>
<td>4</td>
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<tr>
<td>Major: Elective course</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Major: statistics requirement</td>
<td>3</td>
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<tr>
<td>Term</td>
<td>Course</td>
<td>Hours</td>
</tr>
<tr>
<td>------------</td>
<td>----------------------------------------------------------</td>
<td>-------</td>
</tr>
<tr>
<td>Fall</td>
<td>Major: Elective course</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Major: Elective course</td>
<td>3</td>
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<tr>
<td></td>
<td>Elective course</td>
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<td></td>
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<td></td>
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<td>3</td>
</tr>
<tr>
<td></td>
<td>Hours</td>
<td>15</td>
</tr>
<tr>
<td>Spring</td>
<td>Major: Elective course</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Major: Elective course</td>
<td>3</td>
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<td></td>
<td>Elective course</td>
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<td></td>
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<td>3</td>
</tr>
<tr>
<td></td>
<td>Hours</td>
<td>15</td>
</tr>
<tr>
<td>Total Hours</td>
<td></td>
<td>124-130</td>
</tr>
</tbody>
</table>

a. Enrollment in chemistry courses requires completion of a placement exam.
b. Fulfills a major requirement and may fulfill a GE requirement.
c. GE CLAS Core courses may be completed in any order unless used as a prerequisite for another course. Students should consult with an advisor about the best sequencing of courses.
d. Enrollment in math courses requires completion of a placement exam.
e. Students who have completed four years of a single language in high school have satisfied the GE CLAS Core World Languages requirement. Enrollment in world languages courses requires a placement exam, unless enrolling in a first-semester-level course.
f. Students may use elective courses to earn credit towards the total s.h. required for graduation or to complete a double major, minors, or certificates.
g. Students complete at least 18 s.h. in approved major electives, of which at least 12 s.h. must be in HHP course work.

**Career Advancement**

The Pomerantz Career Center offers multiple resources to help students find internships and jobs.