

Human Physiology, BS

Learning Outcomes

The BS degree in human physiology:

- provides a broad understanding of the form (anatomy) and function (physiology) of the human body through evaluation of organ system function and integrative function across systems in health and disease;
- prepares students to employ their fundamental knowledge of human physiology together with the scientific method, disciplinary research, and evidence-based reasoning to solve problems in their chosen professional and/or graduate career fields;
- develops skills and interpersonal competencies relevant to a diverse range of career pathways; and
- instills an 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 human physiology and the health sciences.

Requirements

The Bachelor of Science with a major in human physiology requires a minimum of 120 s.h., including 63 s.h. of work for the major. Students must maintain a grade-point average 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. Transfer students must complete a minimum of 16 s.h. in human physiology coursework at the University of Iowa, including HHP:3550 Human Physiology with Laboratory.

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

Students may complete the BS with a major in human physiology without an emphasis area or with one of three optional emphasis areas: clinical physiology, neuromuscular physiology and metabolism, or research.

Students may earn a BS in human physiology or a BS in health promotion or exercise science, but not more than one of these.

Students who earn a BS in human physiology may not earn the minor in human physiology.

For policies concerning transfer credit, credit by examination, cumulative grade-point average, general rules relating to regression and duplication, and so forth, see For Undergraduate Students on the College of Liberal Arts and Sciences website.

The BS with a major in human physiology requires the following coursework.

Requirements	Hours
Core Courses	14
Elective Courses	18

Cognate Area Courses	31
Area of Emphasis	

Core Courses

Course #	Title	Hours
All of these:		
HHP:1050	Exploring Health and Human Physiology	1
HHP:3115	Anatomy for Human Physiology with Lab	5
HHP:3550	Human Physiology with Laboratory	5
One of these:		
HHP:2200	Physical Activity and Health	3
HHP:2280	Cultural Competency and Health	3
HHP:2310	Nutrition and Health	3

Elective Courses

At least 18 s.h. from these with at least 12 s.h. in health and human physiology courses (prefix HHP).

Course #	Title	Hours
At least 6 s.h. from these (organ system-based courses):		
HHP:3450	Immunology in Health and Disease	3
HHP:4110	Advanced Human Anatomy Laboratory	4
HHP:4130	Skeletal Muscle Physiology	3
HHP:4260	Respiratory Pathophysiology	3
HHP:4300	Sensorimotor Neurophysiology	3
HHP:4460	Cardiovascular Physiology	3
At least 3 s.h. from these (integrative physiology courses):		
HHP:4150	Clinical Exercise Physiology	3
HHP:4250	Human Pathophysiology	3
HHP:4410	Integrative Physiology of Exercise	3
HHP:4470/ASP:4470	Physiology of Aging	3
HHP:4510	Energetics in Health and Disease	3
May include up to 9 s.h. from these:		
HHP:3300	Human Growth and Motor Development	3
HHP:3700	Health Care Communications	1
HHP:3900	Writing for Health and Human Physiology	3
HHP:3994	Undergraduate Research (may be repeated; up to 3 s.h. may be applied toward the degree)	1-3
HHP:4200	Metabolic Exercise Testing and Prescription	4
HHP:4210	Musculoskeletal Exercise Testing and Prescription	4
HHP:4440	Physiology of Nutrition	3
HHP:4450	Human Genetics and Disease	3-4

HHP:4465	Environmental Exercise Physiology	3
HHP:4490	International Health: Experiential Learning (may be repeated; up to 3 s.h. may be applied toward the degree)	3
HHP:4500	Undergraduate Independent Project (may be repeated; up to 3 s.h. may be applied toward the degree)	arr.
HHP:4700	Health and Human Physiology Teaching Internship (may be repeated; up to 3 s.h. may be applied toward the degree)	2-3
HHP:4800	Research Methods and Ethics	3
HHP:4900	Honors Research	3
HHP:4930	Health and Human Physiology Internship (may be repeated; up to 3 s.h. may be applied toward the degree)	arr.
BIOL:2254	Endocrinology	3
BIOL:2723	Cell Biology	3
BMB:3110	Biochemistry	3
MICR:2157	General Microbiology	3
MICR:2158	General Microbiology Laboratory	2
PCOL:4130	Drug Mechanisms and Actions	3
May include one of these:		
PSY:2130	Advanced Psychology for Pre-Medical Track	3
PSY:2930	Abnormal Psychology: Health Professions	3
SOC:3510	Medical Sociology	3

Cognate Area Courses

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

Course #	Title	Hours
Biology		
This sequence:		
BIOL:1411- BIOL:1412	Foundations of Biology - Diversity of Form and Function	8
Chemistry		
This sequence:		
CHEM:1110 & CHEM:1120	Principles of Chemistry I-II	8
Mathematics		
One of these:		
MATH:1460	Calculus for the Biological Sciences	4
MATH:1550	Engineering Mathematics I: Single Variable Calculus	4
MATH:1850	Calculus I	4

Physics

This sequence:

PHYS:1511- PHYS:1512	College Physics I-II	8
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Statistics

One of these:

STAT:2010	Statistical Methods and Computing	3
STAT:3510/ IGPI:3510	Biostatistics	3
STAT:4143/ PSQF:4143	Introduction to Statistical Methods	3

Areas of Emphasis

Students majoring in human physiology may declare an emphasis area but are not required to do so to satisfy major requirements. Declaring an emphasis area does not require completion of elective coursework beyond that already required for the major. Major elective requirements can be met through emphasis area courses.

Clinical Physiology Area

Course #	Title	Hours
Four of these:		
HHP:3450	Immunology in Health and Disease	3
HHP:3700	Health Care Communications	1
HHP:4150	Clinical Exercise Physiology	3
HHP:4200	Metabolic Exercise Testing and Prescription	4
HHP:4250	Human Pathophysiology	3
HHP:4260	Respiratory Pathophysiology	3
HHP:4490	International Health: Experiential Learning	3

Neuromuscular Physiology and Metabolism Area

Course #	Title	Hours
Four of these:		
HHP:4110	Advanced Human Anatomy Laboratory	4
HHP:4130	Skeletal Muscle Physiology	3
HHP:4300	Sensorimotor Neurophysiology	3
HHP:4410	Integrative Physiology of Exercise	3
HHP:4440	Physiology of Nutrition	3
HHP:4510	Energetics in Health and Disease	3

Research Area

Course #	Title	Hours
All of these:		
HHP:3994	Undergraduate Research	3
HHP:4800	Research Methods and Ethics	3
HHP:4900	Honors Research	3

Honors

Honors in the Major

Students have the opportunity to graduate with honors in the major. Departmental honors students must maintain an overall grade-point average (GPA) of at least 3.33 in work for their major and a cumulative University of Iowa GPA of at least 3.33.

In order to graduate with honors in the major, students must successfully complete the honors research course sequence HHP:4800 Research Methods and Ethics and HHP:4900 Honors Research; write an honors thesis that 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.

Career Advancement

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

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.

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 coursework in the major, all remaining GE CLAS Core courses, and a sufficient number of semester hours to graduate.

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, BS

Course	Title	Hours
Academic Career		
Any Semester		
Transfer students must complete a minimum of 16 s.h. in human physiology coursework at the University of Iowa, including HHP:3550 Human Physiology with Laboratory.		
GE CLAS Core: Sustainability ^a		
Hours		0
First Year		
Fall		
MATH:1850 or MATH:1460 or MATH:1550	Calculus I ^{b, c} or Calculus for the Biological Sciences or Engineering Mathematics I: Single Variable Calculus	4
ENGL:1200 or RHET:1030	The Interpretation of Literature or Rhetoric	3 - 4
GE CLAS Core: Diversity and Inclusion (may be satisfied by core course if opting to take HHP:2280 Cultural Competency and Health) ^d		3
GE CLAS Core: Literary, Visual, and Performing Arts ^d		3
CSI:1600	Success at Iowa	2
Hours		15-16
Spring		
HHP:1050	Exploring Health and Human Physiology	1
CHEM:1110	Principles of Chemistry I ^{b, e}	4
RHET:1030 or ENGL:1200	Rhetoric or The Interpretation of Literature	3 - 4
GE CLAS Core: Social Sciences ^d		3
GE CLAS Core: Values and Culture (may be satisfied by core course if opting to take HHP:2200 Physical Activity and Health) ^d		3
Elective course ^f		2
Hours		16-17
Second Year		
Fall		
BIOL:1411	Foundations of Biology ^b	4
CHEM:1120	Principles of Chemistry II	4
HHP:2310 or HHP:2200 or HHP:2280	Nutrition and Health ^g or Physical Activity and Health or Cultural Competency and Health	3
GE CLAS Core: World Languages First Level Proficiency or elective course ^h		4 - 5
Hours		15-16
Spring		
BIOL:1412	Diversity of Form and Function	4
GE CLAS Core: Historical Perspectives ^d		3
GE CLAS Core: International and Global Issues ^d		3
GE CLAS Core: World Languages Second Level Proficiency or elective course ^h		4 - 5
Hours		14-15

Third Year**Fall**

HHP:3115	Anatomy for Human Physiology with Lab	5
PHYS:1511	College Physics I	4
STAT:2010 or STAT:4143 or STAT:3510	Statistical Methods and Computing or Introduction to Statistical Methods or Biostatistics	3
GE CLAS Core: World Languages Third Level Proficiency or elective course ^h		4 - 5

Hours 16-17

Spring

HHP:3550	Human Physiology with Laboratory	5
PHYS:1512	College Physics II	4
GE CLAS Core: World Languages Fourth Level Proficiency or elective course ^h		4 - 5

Elective course ^f	3
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Hours 16-17

Fourth Year**Fall**

Major: elective or emphasis area course ^{j, k}	3
Major: elective or emphasis area course ^{j, k}	3
Major: elective or emphasis area course ^{j, k}	3
Elective course ^f	3
Elective course ^f	3

Hours 15

Spring

Major: elective or emphasis area course ^{j, k}	3
Major: elective or emphasis area course ^{j, k}	3
Major: elective or emphasis area course ^{j, k}	3
Elective course ^f	3
Elective course ^f	2

Degree Application: apply on MyUI before deadline (typically in February for spring, September for fall)^l

Hours 14

Total Hours 121-127

a Sustainability must be completed by choosing a course that has been approved for Sustainability AND for one of these General Education areas: Natural Sciences; Quantitative and Formal Reasoning; Social Sciences; Historical Perspectives; International and Global Issues; Literary, Visual, and Performing Arts; or Values and Culture.

b Fulfills a major requirement and may fulfill a GE requirement.

c Enrollment in math courses requires completion of a placement exam.

d 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.

e Enrollment in chemistry courses requires completion of a placement exam.

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 opting to take HHP:2310 must complete other courses to satisfy the following GE requirements: Diversity and Inclusion; and Values and Culture.

h Students who have completed four levels of a single language or two levels of two different languages in high school or college have satisfied the GE CLAS Core World Languages requirement. Students who have completed three levels of a single language may complete a fourth-level course in the same language or may choose an approved World Language and Cultural Exploration course. Enrollment in world languages courses requires a placement exam, unless enrolling in a first-semester-level course. Contact your academic advisor or CLAS Undergraduate Programs Office with questions concerning the World Languages requirement.

i This course must be completed at the University of Iowa.

j Students complete at least 18 s.h. of major electives, of which 12 s.h. must be in HHP coursework; at least 6 s.h. will be taken from designated organ system-based courses and 3 s.h. from courses emphasizing integrative physiology. See the General Catalog for a list of approved elective courses.

k Students may declare an emphasis area in clinical physiology; neuromuscular physiology and metabolism; or research. Major elective requirements can be met by completing emphasis area courses. See the General Catalog for approved emphasis area course lists.

l Please see Academic Calendar, Office of the Registrar website for current degree application deadlines. Students should apply for a degree for the session in which all requirements will be met. For any questions on appropriate timing, contact your academic advisor or Degree Services.