

Exercise Science, BS

Learning Outcomes

Students will be able to:

- apply principles of biomechanics and musculoskeletal anatomy to better understand movement, exercise, and injury;
- apply understanding of psychological benefits and determinants of physical activity behavior to facilitate behavior change;
- apply understanding of the effects of acute exercise and training on physiological systems;
- design population-specific aerobic, strength, balance, and flexibility exercise programs for health and performance outcomes;
- measure health and fitness outcomes to inform and evaluate tailored exercise programs; and
- apply evidence-based nutrition recommendations to support and enhance sport, performance, and exercise training outcomes.

Requirements

The Bachelor of Science with a major in exercise science requires a minimum of 120 s.h., including at least 45–47 s.h. of work for the major. A minimum of 16 s.h. in the major must be earned at the University of Iowa. 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 must also complete the College of Liberal Arts and Sciences GE CLAS Core.

In planning coursework, students should be guided by the College of Liberal Arts and Sciences maximum hours rule: students earning a BS may apply a maximum of 56 s.h. earned in one department to the minimum 120 s.h. required for graduation, whether or not the coursework is accepted toward requirements for the major; students who earn more than 56 s.h. from one department may use the additional semester hours to satisfy requirements for the major (if the department accepts them), and the grades they earn become part of their grade-point average, but they cannot apply the additional semester hours to the minimum 120 s.h. required for graduation.

The BS in exercise science is intended for students seeking careers as professionals in fitness and in strength and conditioning. The major provides focused study in physical fitness, physical activity, sport nutrition, and sport conditioning as they pertain to health and performance outcomes. The curriculum has been approved by the American College of Sports Medicine (ACSM) as meeting the academic preparation for certification as an ACSM-certified exercise physiologist and ACSM-certified personal trainer. It also prepares students for certification by the National Strength and Conditioning Association as a certified strength and conditioning specialist and certified special population specialist. The strong physiological science-based curriculum can serve as preparation for professional or graduate study in rehabilitation sciences, performance sciences, or medical fields.

Students who earn the major in exercise science may not earn a major in human physiology, health promotion, or health studies.

Students who earn the major in exercise science may not earn a minor in lifestyle medicine but may earn a minor in human physiology.

The BS with a major in exercise science requires the following coursework.

| Requirements | Hours |
|-------------------------------------|-------|
| Science and Math Foundation Courses | 10-12 |
| Exercise Science Foundation Courses | 12 |
| Exercise Science Core Courses | 17 |
| Electives | 6 |

Science and Math Foundation Courses

Students complete three foundation courses (minimum of 10 s.h.): one each in chemistry, biology, and mathematics or statistics. Note that courses may have required prerequisites.

| Course # | Title | Hours |
|----------------------------------|---|-------|
| Chemistry | | |
| One of these: | | |
| CHEM:1080 | General Chemistry II | 3 |
| CHEM:1120 | Principles of Chemistry II | 4 |
| Biology | | |
| One of these: | | |
| BIOL:1140 | Human Biology: Nonmajors | 4 |
| BIOL:1141 | Human Biology: Health Professions | 4 |
| BIOL:1411 | Foundations of Biology | 4 |
| Mathematics or Statistics | | |
| One of these: | | |
| MATH:1020 | Elementary Functions | 4 |
| MATH:1350 | Quantitative Reasoning for Business | 4 |
| MATH:1440 | Mathematics for the Biological Sciences | 4 |
| MATH:1460 | Calculus for the Biological Sciences | 4 |
| MATH:1850 | Calculus I | 4 |
| PSQF:4143/ STAT:4143 | Introduction to Statistical Methods | 3 |
| STAT:1020/ PSQF:1020 | Elementary Statistics and Inference | 3 |
| STAT:1030 | Statistics for Business | 4 |
| STAT:3510/ IGPI:3510 | Biostatistics | 3 |

Exercise Science Foundation Courses

Students must complete the four-course departmental core (12 s.h.).

| Course # | Title | Hours |
|---------------|------------------------------|-------|
| All of these: | | |
| HHP:2100 | Human Anatomy | 3 |
| HHP:2200 | Physical Activity and Health | 3 |
| HHP:2310 | Nutrition and Health | 3 |

| | | |
|----------|----------------------------------|---|
| HHP:2400 | Fundamentals of Human Physiology | 3 |
|----------|----------------------------------|---|

Exercise Science Core Courses

| Course # | Title | Hours |
|---------------|---|-------|
| All of these: | | |
| HHP:2350 | Biomechanics of Sport and Physical Activity | 3 |
| HHP:3045 | Physical Activity Psychology | 3 |
| HHP:3410 | Applied Exercise Physiology With Lab | 4 |
| HHP:4240 | Exercise Testing and Prescription With Lab | 4 |
| HHP:4310 | Sport and Exercise Nutrition | 3 |

Electives

Students must complete at least 6 s.h. of additional health, sport, and human physiology courses (prefix HHP) numbered 1050 or above.

Combined Programs

BS/MS in Athletic Training

The Department of Health, Sport, and Human Physiology (College of Liberal Arts and Sciences) and the Department of Orthopedics and Rehabilitation (Carver College of Medicine) offer a combined Bachelor of Science/Master of Science in athletic training. The combined degree program allows students to count a limited amount of credit toward both degrees, enabling them to begin the study of athletic training before they complete their bachelor's degree. Coursework taken during the first three years on campus constitutes the required prerequisites for application to the master's degree program.

Admission

Students apply to the MS program in their third year of undergraduate study. Admission to the MS program in athletic training is for summer entry. Students should consult their advisor about the appropriate sequence of courses and other requirements.

For more information, see the MS in athletic training in the Carver College of Medicine section of the catalog.

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:4900 Honors Research and HHP:4910 Honors Research II; 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 exercise science 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: one foundation course 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.

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| Course | Title | Hours |
|--|--|--------------|
| Academic Career | | |
| Any Semester | | |
| GE CLAS Core: Sustainability ^a | | |
| Hours | | 0 |
| First Year | | |
| Fall | | |
| CHEM:1070 | General Chemistry I ^b | 3 - 4 |
| or CHEM:1110 | or Principles of Chemistry I | |
| ENGL:1200 | Interpreting Literature | 3 - 4 |
| or RHET:1030 | or Rhetoric: Writing and Communication | |
| GE CLAS Core: Understanding Cultural Perspectives ^c | | 3 |
| GE CLAS Core: Social Sciences ^c | | 3 |
| CSI:1600 | Success at Iowa | 1 |
| Elective course ^d | | 2 |
| Hours | | 15-17 |

| | | |
|---|--|--------------|
| Spring | | |
| CHEM:1120 or CHEM:1080 | Principles of Chemistry II or General Chemistry II | 3 - 4 |
| HHP:2200 | Physical Activity and Health | 3 |
| RHET:1030 or ENGL:1200 | Rhetoric: Writing and Communication or Interpreting Literature | 3 - 4 |
| GE CLAS Core: Values and Society ^c | | 3 |
| Elective course ^d | | 3 |
| Hours | | 15-17 |

Second Year**Fall**

| | | |
|--|--|--------------|
| HHP:2310 | Nutrition and Health | 3 |
| BIOL:1140 or BIOL:1141 or BIOL:1411 | Human Biology: Nonmajors or Human Biology: Health Professions or Foundations of Biology | 4 |
| Major: math/statistics foundation course ^{e, f} | | 3 |
| GE CLAS Core: Historical Perspectives ^c | | 3 |
| GE CLAS Core: World Languages First Level Proficiency or elective course ^g | | 4 - 5 |
| Hours | | 17-18 |

Spring

| | | |
|---|------------------------------|--------------|
| HHP:2100 | Human Anatomy | 3 |
| HHP:3045 | Physical Activity Psychology | 3 |
| GE CLAS Core: International and Global Issues ^c | | 3 |
| GE CLAS Core: World Languages Second Level Proficiency or elective course ^g | | 4 - 5 |
| Elective course ^d | | 2 |
| Hours | | 15-16 |

Third Year**Fall**

| | | |
|--|--|--------------|
| HHP:2350 | Biomechanics of Sport and Physical Activity | 3 |
| HHP:2400 | Fundamentals of Human Physiology | 3 |
| GE CLAS Core: Literary, Visual, and Performing Arts ^c | | 3 |
| GE CLAS Core: World Languages Third Level Proficiency or elective course ^g | | 4 - 5 |
| Elective course ^d | | 2 |
| Hours | | 15-16 |

Spring

| | | |
|---|---|--------------|
| HHP:3410 | Applied Exercise Physiology With Lab | 4 |
| GE CLAS Core: Quantitative or Formal Reasoning (if not met by major math/statistics foundation course) ^c | | 3 |
| GE CLAS Core: World Languages Fourth Level Proficiency or elective course ^g | | 4 - 5 |
| Elective course ^d | | 3 |
| Elective course ^d | | 2 |
| Hours | | 16-17 |

Fourth Year**Fall**

| | | |
|-------------------------------------|------------------------------|---|
| HHP:4310 | Sport and Exercise Nutrition | 3 |
| Major: elective course ^h | | 3 |
| Elective course ^d | | 3 |
| Elective course ^d | | 3 |

| | | |
|--|---|----------------|
| Elective course ^d | | 3 |
| Hours | | 15 |
| Spring | | |
| HHP:4240 | Exercise Testing and Prescription With Lab | 4 |
| Major: elective course ^h | | 3 |
| Elective course ^d | | 3 |
| Elective course ^d | | 3 |
| Elective course ^d | | 2 |
| Degree Application: apply on MyUI before deadline (typically in February for spring, September for fall) ⁱ | | |
| Hours | | 15 |
| Total Hours | | 123-131 |

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 or Formal Reasoning; Social Sciences; Historical Perspectives; International and Global Issues; Literary, Visual, and Performing Arts; or Values and Society.

b Course not required before CHEM:1080 if student has completed high school chemistry.

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 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.

e See the General Catalog for list of approved courses.

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

g 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.

h Students must complete at least 6 s.h. of additional health, sport, and human physiology courses (prefix HHP) numbered 1050 or above.

i Please see Academic Calendar, on 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.