

Kinesiology

Mission

We promote health and well-being by creating and disseminating knowledge about physical activity and active living. Through discovery, learning and engagement we improve the lives of citizens of Iowa, the United States and the world.

Goals

The department has identified the following goals to support this mission:

1. We seek to improve the lives of citizens of Iowa, the United States, and the world by the creation and dissemination of knowledge about physical activity and its relationship to health and well-being.
2. We prepare scholars and professionals in the study of physical activity at the undergraduate and graduate levels.
3. We educate the public and the University community in the scientific aspects of physical activity especially exercise, sport, and the role of movement throughout the lifespan.

Undergraduate Study

The Department of Kinesiology offers two Bachelor of Science degrees: Athletic Training and Kinesiology & Health. The undergraduate curriculum major/option is comprised of three components: general education, required departmental courses and the major/option courses. The intent of the general education component is to promote intellectual and personal growth and to prepare students for success in the basic, advanced and major/option components. Required courses provide an introduction to the field and fundamental principles of physical activity, fitness, health and disease.

B.S. degree in Athletic Training

Certified Athletic Trainers are allied medical health professionals who specialize in the prevention, assessment, treatment and rehabilitation of injuries to athletes and physically active individuals who are engaged in physical and athletic activities. To gain certification, candidates must graduate from a CAATE accredited athletic training education program and successfully pass the Board of Certification (BOC) examination. Many states also have licensure requirements to practice athletic training. The Athletic Training education program at Iowa State University, accredited since 2001, includes various athletic training clinical rotations including high school, physical therapy clinics, surgical observation experiences, and emergency room observation. The Athletic Training Program utilizes a competitive admission process for undergraduate students.

B.S. degree in Kinesiology & Health

The Kinesiology & Health major includes four specialization options. Options comprise a focused area of study within Kinesiology and Health. Coursework within each specialization option builds upon personal and scholarly learning by enabling students to master content and skills specific to career applications. Options available are:

1. Community and Public Health
2. Exercise Science
3. Pre-Health Professions
4. Physical Education/Teacher Education

Academic options within the Kinesiology & Health major

Students in the Community and Public Health option are prepared for professional employment at local, state or national health agencies, medical centers, and other public or private organizations that seek to promote health in the population.

Students in the Exercise Science option are prepared for professional roles as health and fitness leaders or program managers. Employment opportunities include work in corporate fitness programs, health clubs, cardiac rehabilitation programs or personal training. Graduates are able to plan, implement and supervise exercise programs which will improve fitness and health. Graduates also have a basic understanding of management issues related to business applications in the health and fitness field.

Students in the Pre-Health Professions option utilize an interdisciplinary approach to the study of human movement. In so doing, they become prepared for graduate study in Kinesiology or advanced study leading to careers in medicine, physical therapy, physician assistant or other healthcare profession.

Students in the Physical Education/Teacher Education option are prepared to teach physical education in grades K-12 and to meet the State of Iowa learning outcomes for teachers. Graduates can plan developmentally appropriate physical education, and individualize instruction and assessment for diverse audiences. Enrollment in the Physical Education/Teacher Education option is limited because of accreditation requirements and the provision of more individualized field experiences.

Learning outcomes for the undergraduate degree

Despite the diversity of options, the learning outcomes comprise a common framework for each student as they progress through Iowa State University.

The learning outcomes emphasized in academic coursework in the Department of Kinesiology are:

Communication

Uses clear and effective written, oral, visual, and electronic (WOVE) communication techniques to foster inquiry, collaboration, and engagement in physical activity and health related settings.

Lifelong learning, assessment, and self-reflection

Analyzes and evaluates one's own knowledge, abilities and actions relative to professional standards, seeks opportunities to grow professionally, and utilizes self-assessment and assessment of others to foster physical, cognitive, social, and emotional well-being.

Content knowledge, discovery, and critical thinking

Understands fundamental concepts of physical activity and health, conducts scientific inquiry, and applies critical thinking to solve problems from personal, scholarly, and professional perspectives.

Ethics, diversity, and social justice

Demonstrates leadership and social responsibility to improve quality of life for others and ensures equitable access for diverse groups by creating appropriate environments to initiate and maintain a physically active, healthy lifestyle.

Other Program Offerings:

B.S./M.S. degree in Diet and Exercise

A combined Bachelor of Science and Master of Science (B.S./M.S.) degree in Diet and Exercise is available. The program is jointly administered by the Department of Food Science and Human Nutrition (FS HN), within the College of Agriculture and Life Sciences and the College of Human Sciences, and the Department of Kinesiology, within the College of Human Sciences. Students interested in this program must enroll as freshmen in the Pre-Diet and Exercise program. In the fall of the junior year, students will apply for admission to the B.S./M.S. program. Students not accepted into the program will continue toward completion of a B.S. degree in Dietetics or Kinesiology & Health. Coursework has been designed to facilitate a 4-year graduation date for those students not accepted into the program and electing to complete a single undergraduate degree. Students accepted into the program will progress toward completion of B.S./M.S. degrees in Diet and Exercise.

Endorsement to coach interscholastic athletics

The State Department of Education has provided for the endorsement of licensed teachers for the coaching of athletic teams in schools. The endorsement does not lead to licensure to teach physical education. For requirements of the program, leading to the coaching endorsement, see Teacher Education, Requirements for Areas of Specialization.

Endorsement to teach health education

Those interested in teaching health education in the public schools may get a primary licensure or an additional endorsement. The State Department of Education has approved the Health Teaching Licensure for grades 5-12.

Basic Activity Instruction Program

The department offers a wide selection of beginning, intermediate, and advanced courses in the areas of aquatics, dance, and sports. These courses are designed to serve general education purposes for all students.

Dance

Coursework in dance provides opportunities for students to develop an understanding and appreciation of dance as part of a liberal education. Those interested in teaching dance and Physical Education in the public schools may major in Kinesiology and Health (Teacher Licensure option) and minor in Dance.

An interdisciplinary Performing Arts major with a Dance emphasis is available through the College of Liberal Arts and Sciences. For further information see Index, Theatre and Performing Arts.

Graduate Study

The Department of Kinesiology graduate seeks to integrate discovery and learning by preparing graduate students to understand and create basic and applied knowledge in the study of physical activity, exercise and sport. The normal prerequisite to major graduate work is the satisfactory completion of a curriculum essentially equivalent to that required of undergraduate students in kinesiology at this university. However, it is possible for students to qualify for graduate study if undergraduate preparation has been in a related area.

Students in the M.S. and Ph.D. degrees are required to complete original research and write a thesis or dissertation. There is a non-thesis degree option for M.S. students requiring more coursework and an internship experience or other creative component. Specific information about the requirements for these degree options is available from the department office or from the department web site (<http://www.kin.hs.iastate.edu/graduate>).

The department participates in the interdepartmental minor in gerontology (see Index).

Curriculum in Athletic Training

The athletic training major prepares students for a career as an athletic trainer in high school, college or professional settings or for work in other settings (such as sports medicine clinics, the military, industry, and fitness centers). See program details for course requirements. Admission procedures and technical standards can be found at www.cycloneathletictraining.com (<http://www.cycloneathletictraining.com>).

Curriculum in Kinesiology and Health

The curriculum in Kinesiology and Health is designed for students preparing to enter professional areas related to the health, physical activity, exercise or sport science fields. Students majoring in Kinesiology & Health may select one of four options:

1. Community and Public Health
2. Exercise Science
3. Pre-Health Professions
4. Physical Education Teacher Education

Minors in athletic coaching, dance, exercise science, health promotion, kinesiology, and sport and recreation are available; see requirements under Kinesiology, Undergraduate Programs.

A major in Performing Arts with a dance emphasis is available; see requirements under Curriculum in Performing Arts in Theatre.

Communication Proficiency

In order to meet graduation requirements, all students must earn an average of C (2.0) or better in ENGL 150 and ENGL 250, with neither grade being lower than a C-. Students not meeting this condition must earn a C or better in an advanced writing course:

ENGL 220	Descriptive English Grammar	3
ENGL 302	Business Communication	3
ENGL 309	Report and Proposal Writing	3
ENGL 314	Technical Communication	3

U.S. Diversity and International Perspectives

In order to meet graduation requirements, all students must complete 3 cr. of course work in U.S. Diversity and 3 cr. in International Perspectives. See university approved list.

General Education: Minimum of 38.5 credits required

Physical and Life Sciences: 8 cr. min required

BIOL 255	Fundamentals of Human Anatomy	3
BIOL 255L	Fundamentals of Human Anatomy Laboratory	1
BIOL 256	Fundamentals of Human Physiology	3
BIOL 256L	Fundamentals of Human Physiology Laboratory	1

Additional option-specific requirements are:

Community and Public Health

BIOL 211	Principles of Biology I	3
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BIOL 211L	Principles of Biology Laboratory I	1
CHEM 163	College Chemistry	4
CHEM 163L	Laboratory in College Chemistry	1
MICRO 201	Introduction to Microbiology	2
MICRO 201L	Introductory Microbiology Laboratory	1
FS HN 167	Introduction to Human Nutrition	3

Exercise Science

PHYS 115	Physics for the Life Sciences	4
FS HN 167	Introduction to Human Nutrition	3

Physical Education Teacher Education

PHYS 115	Physics for the Life Sciences	4
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Pre-Health Professions

PHYS 111	General Physics	4-5
or PHYS 115	Physics for the Life Sciences	

Mathematics and Statistics: 3 cr. min required

Option-specific requirements are:

Community and Public Health

From the following:	3-4
STAT 101	Principles of Statistics
or STAT 104	Introduction to Statistics
or STAT 226	Introduction to Business Statistics I

Exercise Science

From the following:	2-3
MATH 140	College Algebra
or MATH 143	Preparation for Calculus
or MATH 145	Applied Trigonometry
or MATH 165	Calculus I

From the following:	3-4
STAT 101	Principles of Statistics
or STAT 104	Introduction to Statistics
or STAT 226	Introduction to Business Statistics I

Physical Education Teacher Education

One of the following:	2-3
MATH 104	Introduction to Probability
or MATH 140	College Algebra
or MATH 143	Preparation for Calculus
or MATH 145	Applied Trigonometry
or MATH 150	Discrete Mathematics for Business and Social Sciences
or MATH 165	Calculus I
or STAT 101	Principles of Statistics
or STAT 104	Introduction to Statistics

Pre-Health Professions

One of the following:	3-4
MATH 140	College Algebra
or MATH 143	Preparation for Calculus
or MATH 145	Applied Trigonometry
or MATH 165	Calculus I
or MATH 181	Calculus and Mathematical Modeling for the Life Sciences I
STAT 101	Principles of Statistics
or STAT 104	Introduction to Statistics
or STAT 226	Introduction to Business Statistics I

Social Sciences: 9 cr. min required

Option-specific requirements are:

Community and Public Health

PSYCH 230	Developmental Psychology	3
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Exercise Science

PSYCH 101	Introduction to Psychology	3
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or PSYCH 230	Developmental Psychology	
SOC 134	Introduction to Sociology	3

Physical Education Teacher Education

PSYCH 230	Developmental Psychology	3
SOC 134	Introduction to Sociology	3

Pre-Health Professions

PSYCH 101	Introduction to Psychology	3
or PSYCH 230	Developmental Psychology	
SOC 134	Introduction to Sociology	3

Humanities: 6 cr. min required

Choose from department approved list.

Communications: 13 cr. min required

ENGL 150	Critical Thinking and Communication	3
ENGL 250	Written, Oral, Visual, and Electronic Composition	3
SP CM 212	Fundamentals of Public Speaking	3
LIB 160	Information Literacy	1
One of the following		3
ENGL 302	Business Communication	
ENGL 314	Technical Communication	
SP CM 312	Business and Professional Speaking	

Program requirements:

The following courses are required in all majors and options:

H S 110	Personal and Consumer Health	3
KIN 252	Disciplines and Professions in Kinesiology and Health	1
KIN 253	Orientation in Kinesiology and Health	1
KIN 258	Physical Fitness and Conditioning	2
KIN 358	Physiology of Exercise (*)	3
H S 350	Human Diseases (*)	3

* A grade of C- or better is required.

Total cr. required: A minimum of 124 credits is required, with a minimum of 46 credits in courses numbered 300 or above.

Courses for Kinesiology and Health Major

Option 1. Community and Public Health

This option prepares students for careers in health promotion and disease prevention. Students are prepared for work in state and local health agencies, community and government programs, hospitals, worksite health programs, and not-for-profit organizations. Graduates are eligible to take the Certified Health Education Specialist (CHES) exam.

Option Requirements:

P R 220	Principles of Public Relations	3
or P R 305	Publicity Methods	
H S 105	First Aid and Emergency Care	2
H S 215	Drug Education	3
H S 310	Community and Public Health (*)	3
H S 380	Worksite Health Promotion	3
H S 385	Strategies for Professional School and Field Experience Opportunities	R
H S 430	Community Health Program Development	3
H S 464	Physical Activity Epidemiology	3
H S 485	Directed Field Experience in Health Promotion (take 10 to 16 credits)	8-16
HD FS 449	Program Evaluation and Proposal Writing	3
or ENGL 309	Report and Proposal Writing	
P R 220	Principles of Public Relations	3
or P R 305	Publicity Methods	
KIN 366	Exercise Psychology (*)	3
One of the following		
ENGL 313	Rhetorical Website Design	
or HD FS 395	Children, Families, and Public Policy	

Electives: 11-18 credits

* A grade of C- or better is required.

Option 2. Exercise Science

This option prepares students for careers in exercise/fitness promotion. Students are prepared as health/fitness specialists, personal trainers, strength and conditioning specialists, and health coaches. Students find work in fitness centers, worksite health programs, medical facilities, cardiac rehabilitation centers, and other agencies that provide fitness services. Students are eligible to sit for certification exams offered by the American College of Sports Medicine and the National Strength & Conditioning Association.

Option Requirements:

KIN 259	Leadership Techniques for Fitness Programs	2
KIN 266	Advanced Strength Training and Conditioning	2
KIN 345	Management of Health-Fitness Programs and Facilities	3
KIN 355	Biomechanics (*)	3
KIN 360	Sociology of Sport and Exercise (*)	3
KIN 366	Exercise Psychology (*)	3
KIN 372	Motor Control and Learning Across the Lifespan (*)	3
KIN 385	Strategies for Professional School and Field Experience Opportunities	R
KIN 458	Principles of Fitness Assessment and Exercise Prescription (*)	4
KIN 459	Internship in Exercise Leadership	1
KIN 462	Medical Aspects of Exercise	3
KIN 485A	Internship in Exercise Science: Health/Fitness Management. (take 8 to 16 crs)	8-16
H S 380	Worksite Health Promotion	3
A TR 220	Basic Athletic Training	2
or H S 305	Instructor's First Aid and Cardio-pulmonary Resuscitation	

Electives: 15-25 credits

* A grade of C- or better is required.

Option 3. Physical Education Teacher Education

This option is for students seeking a license to teach K-12 physical education. All courses required for licensure have a minimum grade requirement of a C or C-.

Students interested in a coaching and/or a health endorsement must complete additional coursework.

Option Requirements:

KIN 231	Fundamentals of Tumbling and Gymnastics (*)	1
KIN 232	Fundamentals of Team Sports (*)	1
KIN 236	Fundamentals of Individual Sports and Fitness (*)	1
KIN 238	Fundamentals of Outdoor and Adventure Activities (*)	1
KIN 280	Directed Field Experience in Elementary Physical Education	1
KIN 281	Directed Field Experience in Secondary Physical Education	1
KIN 282	Field Experience with Educational Outreach	1
KIN 312	Movement Education in Elementary School Physical Education	3
KIN 313	Teaching Secondary Physical Education	3
KIN 355	Biomechanics (*)	3
KIN 360	Sociology of Sport and Exercise (*)	3
KIN 365	Sport Psychology (*)	3
or KIN 366	Exercise Psychology	
KIN 372	Motor Control and Learning Across the Lifespan (*)	3
KIN 395	Adapted Physical Education	3
KIN 417	Supervised Teaching in Physical Education in the Secondary School	arr †
KIN 418	Supervised Teaching in Physical Education in the Elementary School	8
KIN 471	Measurement in Physical Education	3
KIN 475	Physical Education Curriculum Design and Program Organization	3
DANCE 211	Fundamentals and Methods of Social and World Dance (*)	1

H S 105	First Aid and Emergency Care (*)	2
H S 305	Instructor's First Aid and Cardio-pulmonary Resuscitation (*)	2
C I 202	Learning Technologies in the 7-12 Classroom	3
C I 204	Social Foundations of Education in the United States	3
C I 406	Multicultural Foundations of School and Society: Introduction	3
Electives: 6 credits		

† Arranged with instructor.

* A grade of C- or better is required.

Option 4. Pre-Health Professions

This option is for students interested in graduate study or for those who are preparing for professional programs in medicine, physical therapy, physician assistant, and other healthcare professions. Course work provides background in human movement while completing the requirements for entry into graduate or professional school.

Option Requirements:

BIOL 211	Principles of Biology I	3
BIOL 211L	Principles of Biology Laboratory I	1
BIOL 212	Principles of Biology II	3
BIOL 212L	Principles of Biology Laboratory II	1
KIN 355	Biomechanics (*)	3
KIN 360	Sociology of Sport and Exercise (*)	3
KIN 365	Sport Psychology (*)	3
or KIN 366	Exercise Psychology	
KIN 372	Motor Control and Learning Across the Lifespan (*)	3
KIN 385	Strategies for Professional School and Field Experience Opportunities	R
9 cr. from the following		9
H S 464	Physical Activity Epidemiology	3
KIN 455	Research Topics in Biomechanics	
KIN 458	Principles of Fitness Assessment and Exercise Prescription	
KIN 462	Medical Aspects of Exercise	
KIN 467	Exercise and Health: Behavior Change	
KIN 472	Neural Basis of Human Movement	
KIN 480	Functional Anatomy	
KIN 366	Exercise Psychology	3
KIN 481	Biomechanics Lab	
KIN 482	Exercise Physiology Lab	
KIN 483	Exercise Psychology Lab	
KIN 484	Assessment and Control of Locomotion	
KIN 495	Seminar in Exercise and Sport Science	

Specialization Requirements: Sciences as required by professional schools. 14-30 credits

Electives: 5-24 credits

* A grade of C- or better is required.

Minors

Athletic Coaching

The minor requires a minimum of 17 credits and may be earned by completing the following:

A TR 220	Basic Athletic Training	2
KIN 315	Coaching Theory and Administrative Issues	3
KIN 365	Sport Psychology	3
BIOL 155	Human Biology	3
or BIOL 255	Fundamentals of Human Anatomy	
PSYCH 230	Developmental Psychology	3
3 cr. from the following		3
KIN 355	Biomechanics	
or KIN 358	Physiology of Exercise	

Dance

The minor requires a minimum of 21 credits and may be earned by completing the following:

DANCE 220	Modern Dance Composition	2
DANCE 222	Modern Dance II	1
DANCE 270	Dance Appreciation	3
DANCE 320	Sound and Movement	3
DANCE 360	History and Philosophy of Dance	3
DANCE 384	Teaching Children's Dance	2
DANCE 385	Methods of Teaching Dance	2
DANCE 386	Teaching Dance Technique and Composition	2

3 additional credits selected from dance courses numbered 200 or above.*

*Participation in Orchesis I or II is recommended.

Exercise Science

The minor requires a minimum of 17 credits and may be earned by completing the following:

KIN 258	Physical Fitness and Conditioning	2
KIN 358	Physiology of Exercise	3
KIN 366	Exercise Psychology	3
3-6 cr. from the following		3-6
A TR 220	Basic Athletic Training	
KIN 259	Leadership Techniques for Fitness Programs	
KIN 266	Advanced Strength Training and Conditioning	
KIN 345	Management of Health-Fitness Programs and Facilities	
KIN 360	Sociology of Sport and Exercise	
3-6 cr. from the following		3-6
KIN 458	Principles of Fitness Assessment and Exercise Prescription	
KIN 462	Medical Aspects of Exercise	
KIN 467	Exercise and Health: Behavior Change	

Health promotion

The minor requires a minimum of 18 credits and may be earned by completing the following:

H S 110	Personal and Consumer Health	3
H S 350	Human Diseases	3
H S 380	Worksite Health Promotion	3
3-6-cr. from the following		
H S 215	Drug Education	
H S 305	Instructor's First Aid and Cardio-pulmonary Resuscitation	
H S 310	Community and Public Health	
3-6 cr. from the following		
H S 430	Community Health Program Development	
KIN 467	Exercise and Health: Behavior Change	

Kinesiology

The minor requires a minimum of 15 credits and may be earned by completing the following: (For non-majors only.)

KIN 355	Biomechanics	3
KIN 358	Physiology of Exercise	3
KIN 360	Sociology of Sport and Exercise	3
KIN 372	Motor Control and Learning Across the Lifespan	3
KIN 365	Sport Psychology	3
or KIN 366	Exercise Psychology	

Sport and Recreation

The minor requires a minimum of 18 credits and may be earned by completing the following:

KIN 315	Coaching Theory and Administrative Issues	3
KIN 365	Sport Psychology	3
KIN 360	Sociology of Sport and Exercise	3
KIN 399	Recreational Sport Management	3
MGMT 370	Management of Organizations	3
3 cr. from the following		3

ADVRT 230	Advertising Principles
P R 220	Principles of Public Relations
P R 305	Publicity Methods
MGMT 310	Entrepreneurship and Innovation
MGMT 313	Feasibility Analysis and Business Planning
MGMT 371	Organizational Behavior
MGMT 471	Personnel and Human Resource Management