

# 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 component 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. Coursework within each specialization option builds upon personal and scholarly learning by enabling students to master content and skills specific to career applications. Options comprise a focused area of study within Kinesiology. 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 organizations that seek to promote health in the population. The curriculum prepares students to take the Certified Health Education Specialist certification examination upon graduation.

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 economic and 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, or other allied health programs.

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 matriculate 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:

### 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 endorsement 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.

## 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.

## 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) (<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, 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 dance, athletic coaching, exercise science, health promotion, kinesiology, and sport and recreation are available; see requirements under Kinesiology, Courses and 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
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 111	General Physics	4-5
or PHYS 115	Physics for the Life Sciences	

### Physical Education Teacher Education

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

### Pre-Health Professions

PHYS 111	General Physics	5
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## Mathematics and Statistics: 2 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 141	Trigonometry	
or MATH 142	Trigonometry and Analytic Geometry	
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 and Matrices	
or MATH 140	College Algebra	
or MATH 141	Trigonometry	
or MATH 142	Trigonometry and Analytic Geometry	

or MATH 150	Discrete Mathematics for Business and Social Sciences	
or MATH 165	Calculus I	

**Pre-Health Professions**

One of the following:		3-4
MATH 142	Trigonometry and Analytic Geometry	
or MATH 165	Calculus I	
or MATH 181	Calculus and Mathematical Modeling for the Life Sciences I	
One of the following:		3-4
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**

HD FS 102	Individual and Family Life Development	3
or PSYCH 230	Developmental Psychology	

**Exercise Science**

PSYCH 101	Introduction to Psychology	3
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: 12.5 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:

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, industry, and not-for-profit

organizations. Graduates are eligible to take the Certified Health Education Specialist (CHES) exam.

**Option Requirements:**

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 390	Administration of the School Health Program	3
H S 430	Community Health Program Development	3
H S 485	Directed Field Experience in Health Promotion (take 10 to 16 credits)	1-16
HD FS 449	Program Evaluation and Proposal Writing	3
JL MC 220	Principles of Public Relations	3
or JL MC 305	Publicity Methods	
KIN 366	Exercise Psychology (*)	3

**One of the following**

ENGL 309	Report and Proposal Writing	
ENGL 313	Rhetorical Website Design	
HD FS 395	Children, Families, and Public Policy	
JL MC 342	Visual Principles for Mass Communicators	

Electives: 11.5-18.5 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)	1-16
H S 380	Worksite Health Promotion	3
A TR 220	Basic Athletic Training	2

Electives: 16.5-25.5 credits  
Total Credits 33-48

\* 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 230	Fundamentals of Aquatics	1
KIN 231	Fundamentals of Tumbling and Gymnastics	1

KIN 238	Fundamentals of Outdoor and Adventure Activities	1
KIN 232	Fundamentals of Indoor Team Sports	1
or KIN 233	Fundamentals of Outdoor Team Sports	
KIN 235	Fundamentals of Racquet Sports	1
or KIN 236	Fundamentals of Individual Sports	
KIN 280	Directed Field Experience in Elementary Physical Education	1
KIN 281	Directed Field Experience in Physical Education	1
KIN 312	Movement Education in Elementary School 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 313	Secondary Physical Education Methods	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	2
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: 3.5 credits

† Arranged with instructor.

## 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, occupational therapy, and other healthcare professions. Course work provides background in human movement while completing the requirements for entry into graduate or professional school.

Option Requirements:

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
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 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. 26 credits

Electives: 17.5-18.5 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	
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 Orchestras 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	2
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	

Total Credits

16-22

### 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 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	
HRI 260	Global Tourism Management	
JL MC 220	Principles of Public Relations	
JL MC 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	

### Courses primarily for undergraduates:

#### A TR 219. Clinical Practicum in Athletic Training.

(0-2) Cr. 1. F.

Athletic training clinical experiences designed to review human anatomical structures including origin, insertion, action, innervations of muscles. Students will gain experience with palpation of these structures to help identify location of anatomical landmarks. Students will also gain experience identifying bones, ligaments, and tendons. Open to athletic training students only.

#### A TR 220. Basic Athletic Training.

(1-2) Cr. 2. Prereq: BIOL 155 or BIOL 255 and BIOL 256

Introduction to methods of prevention and immediate care of athletic injuries. Basic information concerning health supervision of athletes, and some basic wrapping and strapping techniques for common injuries. Non A TR majors only.

#### A TR 221. Pre-Athletic Training Clinical Practicum.

(0-3) Cr. 1. S. Prereq: Credit or enrollment in KIN 222 and permission of athletic training program director

Athletic training clinical observation experiences to accompany 222. Utilize knowledge to evaluate, analyze and demonstrate appropriate taping, wrapping and basic skill techniques. Open to students interested in the athletic training option. Offered on a satisfactory-fail basis only.

#### A TR 222. Basic Athletic Training for Athletic Trainers.

(2-2) Cr. 3. S. Prereq: BIOL 255, BIOL 255L

Provides pre-athletic training students with the knowledge of the profession of a certified athletic trainer, factors associated with injury prevention, treatment, emergency care of athletic injuries, protective equipment, basic organization, administrative, and legal concepts in the athletic training setting. To be taken concurrently with 221.

#### A TR 223. Clinical Practicum in Athletic Training.

(0-3) Cr. 1. F. Prereq: Permission of Athletic Training Program Director  
Athletic training clinical experiences for athletic training students during pre-season intercollegiate football. Clinical experiences include: Professional Rescuer CPR, AED certification, emergency splinting and spineboarding, medical record keeping and HIPPA regulations, environmental conditions, prevention of injury screening strategies, athletic training room and education program policies and procedures, review of athletic taping techniques, acute injury management, mouthpiece formation, and anatomy review. Offered on a satisfactory-fail basis only.

#### A TR 224. Evaluation of Athletic Injuries I.

(2-3) Cr. 3. F. Prereq: Permission of athletic training program director

Sport injury assessment procedures and evaluation techniques for lower body injuries. Includes an overview of mechanisms of injury, general musculoskeletal disorders, and spine or neurological dysfunction. Designed for students in the athletic training major.

#### A TR 225. Athletic Injuries I Clinical Practicum.

(0-3) Cr. 1. F. Prereq: Permission of athletic training program director

Athletic training clinical experience to accompany 224. Open to students in the athletic training major. Offered on a satisfactory-fail basis only.

#### A TR 226. Evaluation of Athletic Injuries II.

(2-3) Cr. 3. S. Prereq: Permission of athletic training program director

Sport injury assessment procedures and evaluation techniques for lower body injuries. Includes an overview of common illnesses of athletes and sport specific injuries. Designed for students in the athletic training major.

#### A TR 227. Athletic Injuries II Clinical Practicum.

(0-3) Cr. 1. S. Prereq: Permission of athletic training program director

Athletic training clinical experience to accompany 226. Open to students in the athletic training major. Offered on a satisfactory-fail basis only.

#### A TR 240. Introduction to Taping, Equipment, and Bracing Techniques.

(0-3) Cr. 1. S. Prereq: Permission of athletic training program director

Basic information and laboratory instruction regarding basic taping techniques, athletic equipment fitting procedures, and the use and proper fitting of prophylactic braces. Open to students in the athletic training major. Offered on a satisfactory-fail basis only.

#### A TR 323. Therapeutic Modalities for Athletic Trainers.

(2-2) Cr. 3. F. Prereq: Permission of athletic training program director

Theory and technique of therapeutic modalities used in the management of injuries.

#### A TR 324. Therapeutic Modalities Clinical Practicum.

(0-3) Cr. 1. F. Prereq: Permission of athletic training program director

Athletic training clinical experience to accompany 323. Open to students in athletic training major. Offered on a satisfactory-fail basis only.

#### A TR 326. Rehabilitation of Athletic Injuries.

(2-2) Cr. 3. S. Prereq: Permission of athletic training program director

Theory and practical application of rehabilitation principles used in the management of athletic injuries.

#### A TR 327. Rehabilitation of Athletic Injuries Clinical Practicum.

(0-3) Cr. 1. S. Prereq: Permission of athletic training program director

Athletic training clinical experience to accompany 326. Open to students in the athletic training major. Offered on a satisfactory-fail basis only.

#### A TR 425. Organization and Administration of Athletic Training.

(3-0) Cr. 3. F. Prereq: Permission of athletic training program director, senior classification

Current administrative, professional, and legal issues pertaining to athletic training. Job search techniques and strategies including preparation of materials for athletic training students.

#### A TR 450. Medical Concerns for the Athletic Trainer.

(3-0) Cr. 3. F. Prereq: Permission of athletic training program director

Current medical issues and concerns, including pathology of illness and injury, dermatological conditions, exposure to allied health care professionals, and pharmacological indications in relation to the profession of athletic training and in patient/athlete care.

#### A TR 488. Evidence Based Medicine Discussion in Athletic Training.

Cr. 2. S. Prereq: Permission of athletic training program director

Clinical experiences in application of athletic training techniques under supervision of certified athletic trainers. Participation in monthly research journal discussion. Offered on a satisfactory-fail basis only.

**A TR 489. Review of Athletic Training Competencies and Clinical Proficiencies.**

Cr. 1. F.S. *Prereq: Senior classification, permission of athletic training program director*

Preparation for professional endorsement and certification by review of required competencies and clinical proficiencies. Required for endorsement or approval to sit for Board of Certification Exam. Offered on a satisfactory-fail basis only.

**Courses primarily for undergraduates:****DANCE 120. Modern Dance I.**

(0-3) Cr. 1. F.S.

Introduction and practice of basic dance concepts, including preparatory techniques and guided creativity problems. No previous modern dance experience required. Offered on a satisfactory-fail basis only.

**DANCE 130. Ballet I.**

(0-3) Cr. 1. F.S.

Introduction to the basic skills, vocabulary, and tradition of ballet with concentration on control and proper alignment. No previous ballet experience required. Offered on a satisfactory-fail basis only.

**DANCE 140. Jazz I.**

(0-3) Cr. 1. F.S.

Introduction to the modern jazz style with concentration on isolation and syncopation. No previous jazz experience required. Offered on a satisfactory-fail basis only.

**DANCE 150. Tap Dance I.**

(0-3) Cr. 1. F.

Instruction and practice in basic tap technique and terminology. No previous tap experience required. Offered on a satisfactory-fail basis only.

**DANCE 160. Ballroom Dance I.**

(0-2) Cr. 1. F.S.

Instruction and practice in foxtrot, waltz, swing, cha cha, rumba, tango, and selected contemporary dances. Offered on a satisfactory-fail basis only.

**DANCE 199. Dance Continuum.**

Cr. 0.5-2. Repeatable, maximum of 6 credits. F.S. *Prereq: Permission of instructor*  
Advance registration required. Continued instruction and practice in either modern dance, recreational dance, ballet, jazz and/or compositional skills. Offered on a satisfactory-fail basis only.

**DANCE 211. Fundamentals and Methods of Social and World Dance.**

(1-3) Cr. 2. S.

Skill enhancement, teaching, progressions with emphasis on world and social dance. Designed for kinesiology and health majors, open to others.

**DANCE 220. Modern Dance Composition.**

(1-3) Cr. 2. F. *Prereq: DANCE 120 or previous modern dance experience*

Theory and practice of the creative skills involved in solo and small group composition.

**DANCE 222. Modern Dance II.**

(0-3) Cr. 1. F. *Prereq: DANCE 120 or previous modern dance experience*

Dance techniques emphasizing strength, balance, endurance, rhythmic activity and extended combinations.

**DANCE 223. Modern Dance III.**

(0-3) Cr. 1. S. *Prereq: DANCE 222*

Continued experience in dance techniques and extended combinations. Emphasis on maturation of skill and artistry. Exposure to a variety of modern dance technical styles.

**DANCE 224. Concert and Theatre Dance.**

(Cross-listed with THTR). (0-3) Cr. 0.5-2. Repeatable, maximum of 6 credits.

F.S. *Prereq: By audition only*

Choreography, rehearsal, and performance in campus dance concerts and/or musical theatre productions. Offered on a satisfactory-fail basis only.

**DANCE 232. Ballet II.**

(0-3) Cr. 1. S. *Prereq: Previous ballet experience*

Technical skills in the classical movement vocabulary. Emphasis on alignment, techniques, sequence development, and performing quality.

**DANCE 233. Ballet III.**

(0-3) Cr. 1. F. *Prereq: DANCE 232*

Concentration on technical proficiency at the intermediate level. Pointe work and partnering opportunities available.

**DANCE 242. Jazz II.**

(0-3) Cr. 1. S. *Prereq: Previous jazz dance experience*

Dance concepts within the jazz idiom. Instruction in extended movement sequences and artistic interpretation.

**DANCE 270. Dance Appreciation.**

(3-0) Cr. 3. F.S.SS.

Introduction to the many forms and functions of dance in world cultures. Develop abilities to distinguish and analyze various dance styles. No dance experience required.

**DANCE 320. Sound and Movement.**

(2-2) Cr. 3. S. *Prereq: DANCE 220*

Intermediate composition based on the relationship of movement to improvised sounds, rhythmic scores, and the musical works of composers from various periods.

**DANCE 360. History and Philosophy of Dance.**

(3-0) Cr. 3. Alt. S., offered 2012. *Prereq: DANCE 270*

Study of the history of dance from early to modern times with emphasis on the theories and philosophies of contemporary modern dance, dancers, and dance educators.

**DANCE 370. Advanced Studies in Dance.**

Cr. 1-3. Repeatable, maximum of 8 credits. F.S. *Prereq: 2 credits in dance*

Advance registration required. Designed to meet special interests and talents of students to include both group and independent study in various aspects of dance as a performing art including production, choreography, and performance.

**DANCE 384. Teaching Children's Dance.**

(1-3) Cr. 2. S.

Content, experiences, and methods of a comprehensive dance program at the elementary school level. Theories and practice in guiding elementary school children in expressive movement experiences.

**DANCE 385. Methods of Teaching Dance.**

(1-3) Cr. 2. F.

Methods and techniques of teaching social and world dance forms. Introduction to teaching educational modern dance.

**DANCE 386. Teaching Dance Technique and Composition.**

(1-3) Cr. 2. *Prereq: DANCE 320*

Teaching of dance as an expressive art form with emphasis on technique, rhythm, and the creative teaching process.

**DANCE 490. Independent Study.**

Cr. 1-3. Repeatable, maximum of 6 credits. *Prereq: 6 credits in dance and*

*permission of coordinator*

Independent study of problems or areas of interest in dance.

**DANCE 490A. Independent Study: Dance.**

Cr. 1-3. Repeatable, maximum of 6 credits. F.S. *Prereq: 6 credits in dance and*

*permission of coordinator*

Independent study of problems or areas of interest in dance.

**DANCE 490H. Independent Study in Dance - Honors.**

Cr. 1-3. Repeatable, maximum of 6 credits. F.S. *Prereq: 6 credits in dance and*

*permission of coordinator*

Independent study of problems or areas of interest in dance for those admitted to the honors program.

**Courses primarily for undergraduates:****H S 105. First Aid and Emergency Care.**

(1-2) Cr. 2. F.S.

Discussion and application of the basic techniques of administering first aid and cardiopulmonary resuscitation. ARC certification available.

**H S 110. Personal and Consumer Health.**

(3-0) Cr. 3. F.S.

Physical, mental, and social aspects of health as a basis for understanding and preventing health problems. False and misleading advertising and effects of cultists and faddists on consumer health. Study of legislation and agencies concerned with consumer protection and health insurance.

**H S 215. Drug Education.**

(3-0) Cr. 3. F.S. *Prereq: PSYCH 101 or PSYCH 230*

Use and abuse of mood modifying substances in contemporary society. Includes study of tobacco, alcohol, and other drugs.

**H S 275. Health Education in the Elementary School.**(3-0) Cr. 3. F.S. *Prereq: HD FS 102 or HD FS 226*

An overview of school health services, healthful school living, and health instruction for teachers at the elementary level. Credit for both H S 275 and 375 may not be applied toward graduation.

**H S 305. Instructor's First Aid and Cardio-pulmonary Resuscitation.**(1-2) Cr. 2. F.S. *Prereq: H S 105, current Standard First Aid and Community CPR Certification*

Discussion and practice of skills needed to teach first aid and cardiopulmonary resuscitation. ARC certification available.

**H S 310. Community and Public Health.**(3-0) Cr. 3. F.S. *Prereq: H S 110*

Introduction to community health problems, programs of prevention, environmental health agencies, and health services. Study of local, state, and national community health agencies, their purposes and functions.

**H S 350. Human Diseases.**(3-0) Cr. 3. F.S.SS. *Prereq: H S 110 and BIOL 255, BIOL 256*

Discussion of disease process and ill-health in the twentieth century. Emphasis on epidemiology, prevention, treatment, and the understanding of the etiology of communicable and noncommunicable diseases.

**H S 375. Teaching-Learning Process in Health Education.**(3-0) Cr. 3. F.S. *Prereq: H S 105, H S 110, H S 215*

Principles, methods, materials, and resources involved in the teaching of health. Includes organization and development of the health education curriculum (K-12). Credit for both H S 275 and 375 may not be applied toward graduation.

**H S 380. Worksite Health Promotion.**(3-0) Cr. 3. F.S. *Prereq: KIN 258, KIN 366*

The design and implementation of worksite health promotion programs and the benefits these programs have for both employees and employers. Review of various health risk appraisals and planning theory-based incentive programs designed to promote positive lifestyles.

**H S 385. Strategies for Professional School and Field Experience Opportunities.**(Cross-listed with KIN). Cr. R. F.S. *Prereq: Junior classification; to be taken minimum of two semesters prior to graduation or field experience placement.*

Search techniques and preparation of relevant material for work and/or professional school admission. Information specifically related to health care and kinesiology fields. Field experience process and procedures will be reviewed.

**H S 390. Administration of the School Health Program.**(3-0) Cr. 3. F. *Prereq: H S 310*

History and legal basis of school health programs. Procedures for developing, organizing, administering, and evaluating a modern program of health services, healthful school living, and health instruction. Includes administration, community and school relationships.

**H S 417. Supervised Teaching in Health Education in the Secondary School.**Cr. 12. F.S. *Prereq: H S 375*

Advance registration required.

**H S 417A. Supervised Teaching in Health Education in the Secondary School: Initial Endorsement.**Cr. 14. F.S. *Prereq: H S 375*

Students must be fully admitted to Teacher Education and must apply for approval to enroll at the beginning of the semester prior to registering.

**H S 417B. Supervised Teaching in Health Education in the Secondary School: Additional Endorsement.**Cr. arr. F.S. *Prereq: H S 375*

Students must be fully admitted to Teacher Education and must apply for approval to enroll at the beginning of the semester prior to registering.

**H S 430. Community Health Program Development.**(3-0) Cr. 3. F. *Prereq: H S 380*

Techniques of needs assessment, program design, administration, and evaluation of community health education programs in various settings.

**H S 485. Directed Field Experience in Health Promotion.**Cr. 1-16. *Prereq: All required health studies courses and permission of coordinator*

Advance registration required. Supervised experience in health promotion field. Offered on a satisfactory-fail basis only.

**H S 490. Independent Study.**Cr. 1-3. Repeatable, maximum of 6 credits. *Prereq: 6 credits in health studies and permission of coordinator***Courses primarily for undergraduates:****KIN 101. Swimming I.**

(0-3) Cr. 1. F.S.SS.

Basic course for nonswimmers. Emphasis on two fundamental strokes and personal water safety skills. Offered on a satisfactory-fail basis only.

**KIN 102. Swimming II.**(0-3) Cr. 1. F.S. *Prereq: KIN 101 or equivalent skill*

Intermediate course. Emphasis on learning and improving five basic strokes and personal water safety skills. Offered on a satisfactory-fail basis only.

**KIN 108. Aquatic Fitness.**(0-3) Cr. 1. F.S. *Prereq: KIN 102 or equivalent skill*

Water related exercises, activities, and swimming workouts to improve physical fitness. Offered on a satisfactory-fail basis only.

**KIN 114. Lifeguard Training.**(0-3) Cr. 1. F.S. *Prereq: Ability to swim 500 yards continuously of front crawl, sidestroke, and breaststroke; perform a standing and surface dive; swim under water; and tread water for one minute. Minimum age 16*

Course follows specifications by American Red Cross. Offered on a satisfactory-fail basis only.

**KIN 122. Badminton.**

(0-2) Cr. 1. F.S.SS.

Introduction to fundamental badminton skills and strategic game play. Offered on a satisfactory-fail basis only.

**KIN 126. Pocket Billiards.**

(0-2) Cr. 1. F.S.SS.

Introduction to the basic strokes (stop, draw, follow) and contemporary game forms associated with pocket billiards. Offered on a satisfactory-fail basis only.

**KIN 129. Bowling.**

(0-2) Cr. 1. F.S.SS.

Introduction to bowling skills and strategic game play. Offered on a satisfactory-fail basis only.

**KIN 135. Golf.**

(0-2) Cr. 1. F.S.SS.

Introduction to fundamental golf skills and strategic game play. Offered on a satisfactory-fail basis only.

**KIN 144. Racquetball.**

(0-2) Cr. 1. F.S.SS.

Introduction to fundamental racquetball skills and strategic game play. Offered on a satisfactory-fail basis only.

**KIN 153. Ice Skating.**

(0-2) Cr. 1. F.S.SS.

Introduction to fundamental ice skating skills and strategic game play. Offered on a satisfactory-fail basis only.

**KIN 158. Tennis.**

(0-2) Cr. 1. F.S.SS.

Introduction to basic skills (forehand, backhand, service) and basic knowledge of game play. Offered on a satisfactory-fail basis only.

**KIN 163. Physical Fitness.**

(0-3) Cr. 1. F.S.SS.

Evaluation of fitness status. Exercises, activities, and programs to improve physical fitness. Improve physical fitness and weight control. Offered on a satisfactory-fail basis only. Credit for only KIN 163 or 258 may be applied toward graduation.

**KIN 164. Walking for Fitness.**

(0-3) Cr. 1. F.S.SS.

Fitness walking as an activity to improve health and fitness; values of this type of activity as a lifetime endeavor with knowledge and usage of pedometers. Offered on a satisfactory-fail basis only.

**KIN 166. Weight Training.**

(0-3) Cr. 1. F.S.SS.

Introduction to fundamental skills of weight training and strategic game play. Offered on a satisfactory-fail basis only.

**KIN 170. Tae Kwon Do/Karate I.**

(0-2) Cr. 1. F.S.

Teaches fundamentals of self-defense, focusing on hand and foot striking and blocking techniques. The physical skills will be taught focused on training through development of courtesy, integrity, perseverance, self-control and indomitable spirit. It will be emphasized that each student learns a way of life that promotes personal development, physical health and citizenship. Offered on a satisfactory-fail basis only.

**KIN 171. Tae Kwon Do/Karate II.**

(0-2) Cr. 1. F.S.

Teaches advanced application of self-defense focusing on hand and foot striking and blocking techniques. The physical skills will be taught focused on training through development of courtesy, integrity, perseverance, self-control and indomitable spirit. It will be emphasized that each student learns a way of life that promotes personal development, physical health and citizenship. Offered on a satisfactory-fail basis only.

**KIN 173. Hap Ki Do/Martial Self-Defense.**

(0-2) Cr. 1. F.S.

Teaches fundamentals of self-defense focusing on joint locks, pressure points and throwing techniques to escape from an attacker. The physical skills will be taught focused on training through development of courtesy, integrity, perseverance, self-control and indomitable spirit. It will be emphasized that each student learns a way of life that promotes personal development, physical health & citizenship. Offered on a satisfactory-fail basis only.

**KIN 182. Volleyball.**

(0-2) Cr. 1. F.S.SS.

Introduction to fundamental volleyball skills and strategic game play. Offered on a satisfactory-fail basis only.

**KIN 185. Soccer.**

(0-2) Cr. 1. F.S.SS.

Introduction to fundamental soccer skills and strategic game play. Offered on a satisfactory-fail basis only.

**KIN 230. Fundamentals of Aquatics.**(0-3) Cr. 1. S. *Prereq: KIN 101 or equivalent. Eligibility for admission to KIN teacher education program*

Basic water safety and emergency water safety. Skill enhancement, understanding, and progressions.

**KIN 231. Fundamentals of Tumbling and Gymnastics.**(0-3) Cr. 1. F. *Prereq: Eligibility for admission to KIN teacher education program*

Fundamentals of tumbling and gymnastics apparatus. Skill enhancement, analysis, understanding practice and the development of progressions.

**KIN 232. Fundamentals of Indoor Team Sports.**(0-3) Cr. 1. S. *Prereq: Eligibility for admission to KIN teacher education program*

Fundamentals of indoor team sports, for example basketball, volleyball, team handball. Skill enhancement, analysis, understanding practice and the development of progressions.

**KIN 233. Fundamentals of Outdoor Team Sports.**(0-3) Cr. 1. F. *Prereq: Eligibility for admission to KIN teacher education program*

Fundamentals of outdoor team sports, for example flag football, soccer, softball. Skill enhancement, analysis, understanding practice and the development of progressions.

**KIN 235. Fundamentals of Racquet Sports.**(0-3) Cr. 1. S. *Prereq: Eligibility for admission to KIN teacher education program*

Fundamentals of racquet sports, for example tennis, badminton, racquetball. Skill enhancement, analysis, understanding practice and the development of progressions.

**KIN 236. Fundamentals of Individual Sports.**(0-3) Cr. 1. F. *Prereq: Eligibility for admission to KIN teacher education program*

Fundamentals of individual sports, for example track and field, golf, archery and bowling. Skill enhancement, analysis, understanding practice and the development of progressions.

**KIN 238. Fundamentals of Outdoor and Adventure Activities.**(0-3) Cr. 1. F. *Prereq: Eligibility for admission to KIN teacher education program*

Techniques of individual and group facilitation for initiatives involving outdoor adventure activity. Topics include ropes/challenge course events, activity presentation, and sequencing, safety techniques, preparation principles and new games philosophy. Participation is required in one weekend of fieldwork.

**KIN 252. Disciplines and Professions in Kinesiology and Health.**

(1-0) Cr. 1. F.S.

Overview of the various disciplines and professions that comprise the field of Kinesiology (the study of human movement) and help students determine the career option that best fits their interests.

**KIN 253. Orientation in Kinesiology and Health.**(1-0) Cr. 1. F.S. *Prereq: Concurrent enrollment or credit in KIN 252*

Overview of ISU policies and procedures, academic advising operations, degree requirements, program of study planning, and campus resources. Kinesiology and Health majors only. Offered on a satisfactory-fail basis only.

**KIN 254. Learning Communities in Kinesiology/Health.**(0.5-0) Cr. 0.5. F.S. *Prereq: Concurrent enrollment or credit in KIN 253*

Semester long course for new students in the Kinesiology Learning Community to be taken concurrently with the general orientation class for Kinesiology majors. Students will take field trips and work with faculty, staff and mentors to explore careers in kinesiology and complete assignments related to identification & development of their skills and interests. Kinesiology and health majors only. Offered on a satisfactory-fail basis only.

**KIN 258. Physical Fitness and Conditioning.**(1-3) Cr. 2. F.S. *Prereq: Kinesiology and health majors only*

Development of personal fitness using a variety of conditioning and exercise techniques such as aerobics, weight training, and aquatic fitness. Introduction to acute and chronic responses to exercise, and the role of exercise in health promotion and weight management. Credit for only one of the following courses may be applied toward graduation: KIN 163, 258.

**KIN 259. Leadership Techniques for Fitness Programs.**(1-3) Cr. 2. F.S. *Prereq: KIN 258*

Development of exercise leadership skills for a variety of activities. Includes planning, promotion, and teaching techniques for developing fitness in others using a variety of exercise modalities including aerobics, weight training, and aquatic fitness. Kinesiology and health majors only.

**KIN 266. Advanced Strength Training and Conditioning.**(1-2) Cr. 2. F.S. *Prereq: KIN 258*

This course is designed to enhance the student's current level of knowledge and expertise to an advanced level in the area of strength training and conditioning. The course will prepare students interested in taking the National Strength and Conditioning Association Certified and Conditioning Specialist's exam. The course will focus on the assessment and implementation of training programs with strong emphasis on the areas of resistance training, metabolic training, flexibility, reaction time, speed, and agility. Kinesiology and health majors only and permission of instructor needed.

**KIN 280. Directed Field Experience in Elementary Physical Education.**

(0-3) Cr. 1. F.S.

Observing, planning, and facilitating movement experiences of children in an elementary school setting. Offered on a satisfactory-fail basis only.

**KIN 281. Directed Field Experience in Physical Education.**(0-3) Cr. 1. F. *Prereq: Admission to University Teacher Education Program*

Observing, planning, and facilitating movement experiences of students in a public school setting. Offered on a satisfactory-fail basis only.

**KIN 284. Elementary and Pre-school Movement Education.**(2-3) Cr. 3. F.S.SS. *Prereq: 3 credits in human development and family studies*

Approaches to teaching movement skills to pre-school and elementary school age children. Emphasis on planning and conducting developmentally appropriate movement experiences for preschool and elementary aged children based upon motor development research. Practical experience provided. Credit in only one of the following courses may be applied toward graduation: KIN 284, 312.

**KIN 285. Pre-Internship in Kinesiology.**Cr. 1-2. F.S.SS. *Prereq: Kinesiology and Health major and permission of internship coordinator*

Pre-internship experience with a fitness organization. Offered on a satisfactory-fail basis only.

**KIN 312. Movement Education in Elementary School Physical Education.**(2-3) Cr. 3. F. *Prereq: Concurrent enrollment in KIN 280*

Planning for management and instruction of developmentally appropriate physical education for children pre-school through elementary grade 6. Laboratory experience required. Credit for only one in the following courses can be applied toward graduation: KIN 284, 312.



**KIN 313. Secondary Physical Education Methods.**

(2-3) Cr. 3. S. *Prereq: admission to University Teacher Education Program*  
Current theory, practice and research on teaching focusing on management, instructional, and learning styles of students in secondary schools.

**KIN 315. Coaching Theory and Administrative Issues.**

(3-0) Cr. 3. F.S.SS.

Study in the theory, ethics, strategy, and mechanics of coaching various interscholastic and/or intercollegiate sports. Emphasis on formulating a philosophy, identifying goals and psychological aspects, teaching skills, and developing strategies.

**KIN 345. Management of Health-Fitness Programs and Facilities.**

(3-0) Cr. 3. F.S.

Application of management concepts to the fitness industry, e.g., understanding customers, marketing, program management, financial management, legal issues, and evaluation and planning.

**KIN 355. Biomechanics.**

(3-0) Cr. 3. F.S.SS. *Prereq: PHYS 111 or PHYS 115*

Mechanical basis of human performance; application of mechanical principles to exercise, sport and other physical activities. Nonmajor graduate credit.

**KIN 358. Physiology of Exercise.**

(3-0) Cr. 3. F.S.SS. *Prereq: BIOL 255, BIOL 255L, BIOL 256 and BIOL 256L*

Physiological basis of human performance; effects of physical activity on body functions. Nonmajor graduate credit.

**KIN 360. Sociology of Sport and Exercise.**

(3-0) Cr. 3. F.S. *Prereq: SOC 134 and one of STAT 101, STAT 104 or STAT 226/ STAT 326, or KIN 471*

Sport and exercise as social systems and as institutions related to other institutions such as the polity, the economy, mass media, and education. Nonmajor graduate credit.

**KIN 365. Sport Psychology.**

(3-0) Cr. 3. F.S. *Prereq: PSYCH 101 or PSYCH 230*

Psychological factors that influence performance in sport settings. The influence of personality, anxiety, motivation, social factors, and psychological skills training. Nonmajor graduate credit.

**KIN 366. Exercise Psychology.**

(3-0) Cr. 3. F.S.SS. *Prereq: PSYCH 101 or PSYCH 230*

Psychological theories for understanding and predicting health-oriented exercise behavior. Psychological and psychobiological responses to exercise. Psychological interventions for increasing exercise participation and adherence rates. Nonmajor graduate credit.

**KIN 372. Motor Control and Learning Across the Lifespan.**

(3-0) Cr. 3. F.S.SS. *Prereq: PSYCH 101 or PSYCH 230, BIOL 255, BIOL 256*

Introduction to major concepts of neuromotor control, behavioral motor control and motor learning in the child, adult and older adult, with emphasis on the adult system. Nonmajor graduate credit.

**KIN 385. Strategies for Professional School and Field Experience Opportunities.**

(Cross-listed with H S). Cr. R. F.S. *Prereq: Junior classification; to be taken minimum of two semesters prior to graduation or field experience placement.*

Search techniques and preparation of relevant material for work and/or professional school admission. Information specifically related to health care and kinesiology fields. Field experience process and procedures will be reviewed.

**KIN 395. Adapted Physical Education.**

(Dual-listed with KIN 595). (2-3) Cr. 3. F. *Prereq: KIN 312*

Specific disabling conditions in terms of etiology, characteristics, needs, and potential for movement experiences. Techniques of assessment, prescription, adaptation of activities, methods, and program planning. Laboratory experience required. KIN 595 may not be taken by students who have previously earned credit in KIN 395

**KIN 399. Recreational Sport Management.**

(3-0) Cr. 3. F. *Prereq: SOC 134*

The role of sport in developing fitness, recreational opportunities, and tourism, with special emphasis on issues related to youth sport, volunteerism, and the marketing of sport events and facilities.

**KIN 417. Supervised Teaching in Physical Education in the Secondary School.**

Cr. arr. F.S. *Prereq: KIN 281, KIN 313, KIN 355, KIN 358, KIN 395, KIN 471, KIN 475; admission to Teacher Education; approval before enrolling in the course.*  
Supervised teaching in the secondary schools.

**KIN 418. Supervised Teaching in Physical Education in the Elementary School.**

Cr. 8. F.S. *Prereq: KIN 280, KIN 312, KIN 355, KIN 358, KIN 395, KIN 471, KIN 475. Students must be fully admitted to Teacher Education and must apply for approval to enroll at the beginning of the semester prior to registering*  
Supervised teaching in the elementary schools.

**KIN 445. Legal Aspects of Sport.**

(3-0) Cr. 3. S.

Students will understand legal concepts and terminology relevant to sport/activity, identify strategies for limiting liability in sport/fitness programs, and identify solutions for elimination of discriminatory practices in sport and physical activity.

**KIN 455. Research Topics in Biomechanics.**

(3-0) Cr. 3. *Prereq: KIN 355 or permission of instructor*

Examination of biomechanics and kinesiology research literature to evaluate the application of mechanical principles and analyses to human movement in exercise, sport, physical activity, and activities of daily living and to assess research outcomes and their implications for motor performance, movement energetic, musculoskeletal loading, and injury.

**KIN 458. Principles of Fitness Assessment and Exercise Prescription.**

(3-2) Cr. 4. F.S. *Prereq: KIN 358*

Physiological principles of physical fitness; design and administration of fitness programs; testing, evaluation, and prescription; cardiac risk factor modification.

**KIN 459. Internship in Exercise Leadership.**

(0-3) Cr. 1. *Prereq: C- or better in KIN 259, CPR certification, concurrent enrollment in KIN 458*

Observation and practice of exercise leadership techniques in an on-campus adult fitness program.

**KIN 462. Medical Aspects of Exercise.**

(3-0) Cr. 3. F.S. *Prereq: KIN 358*

The role of exercise in preventive medicine. Impact of exercise on various diseases, and the effect of various medical conditions on the ability to participate in vigorous exercise and competitive sports. Principles of exercise testing and prescription for individuals with these conditions. Environmental and nutritional aspects of exercise. Nonmajor graduate credit.

**KIN 467. Exercise and Health: Behavior Change.**

(Dual-listed with KIN 567). (3-0) Cr. 3. S. *Prereq: Introductory course with emphasis on exercise psychology (i.e., KIN 366 or equivalent)*

Advanced analysis of theoretical health behavior models and their application to physical activity behavior. Includes practical techniques, tools and interventions (e.g., counseling skills, motivational interviewing) to enhance exercise prescription and motivation, and considerations for working with special populations.

**KIN 471. Measurement in Physical Education.**

(Dual-listed with KIN 571). (3-0) Cr. 3. S.

Study of grading, assessment and evaluation in physical education with a focus on measuring cognitive and psycho-motor achievement.

**KIN 472. Neural Basis of Human Movement.**

(Dual-listed with KIN 572). (3-0) Cr. 3. S. *Prereq: KIN 372 or PSYCH 310*

Addresses the role of the central nervous system in the control of voluntary human movement, with the focus on the cerebral cortex, basal ganglia and cerebellum. Content organized around specific nervous system damage (such as stroke, apraxia, spasticity, or spinal cord damage) and functional movements (such as reaching and grasping, balance and gait). Converging evidence from human movement disorders, brain imaging, animal lesion and single cell studies provide the primary basis for the content. Nonmajor graduate credit.

**KIN 475. Physical Education Curriculum Design and Program Organization.**

(Dual-listed with KIN 575). (3-0) Cr. 3. F. *Prereq: Admission to University Teacher Education Program*

Current theory, practices and principles applied to curriculum development for programs in physical education, K-12. Organizing for teaching in a variety of school settings.

**KIN 480. Functional Anatomy.**

(3-0) Cr. 3. F.S. *Prereq: KIN 355; BIOL 155 or BIOL 255 and BIOL 256*

The structure and function of human muscular, skeletal and nervous systems. The relationship of these systems to efficient and safe human motion. Nonmajor graduate credit.

**KIN 481. Biomechanics Lab.**

(0-2) Cr. 1. *Prereq: KIN 355*

Learning lab techniques in Biomechanics and engaging in the experimental process.

**KIN 482. Exercise Physiology Lab.**(0-2) Cr. 1. *Prereq: KIN 358*

Learning lab techniques in Exercise Physiology and engaging in the experimental process.

**KIN 483. Exercise Psychology Lab.**(0-2) Cr. 1. *Prereq: KIN 366*

Learning lab techniques in Exercise Psychology and engaging in the experimental process.

**KIN 484. Assessment and Control of Locomotion.**(0-2) Cr. 1. *Prereq: KIN 372*

Learning lab techniques in Motor Control and engaging in the experimental process.

**KIN 485. Internship in Exercise Science.**Cr. 1-16. *Prereq: Senior classification and advance registration*

Observation and practice in fitness agencies. Offered on a satisfactory-fail basis only.

**KIN 485A. Internship in Exercise Science: Health/Fitness Management..**Cr. 1-16. *Prereq: Prereq: C- or better in KIN 458 and KIN 459, Kinesiology and Health majors only. Cumulative GPA 2.0.*

Observation and practice in selected sport and exercise science agencies. Offered on a satisfactory-fail basis only.

**KIN 485B. Internship in Exercise Science: Sport and Physical Activity..**Cr. 1-16. *Prereq: Prereq: Kinesiology and Health majors only. Cumulative GPA 2.0.*

Observation and practice in selected sport and exercise science agencies. Offered on a satisfactory-fail basis only.

**KIN 490. Independent Study.**Cr. 1-3. Repeatable, maximum of 6 credits. *Prereq: 6 credits from KIN advanced core and permission of coordinator*

Independent study of problems of areas of interest in exercise and sport science and related areas.

**KIN 490A. Independent Study: Exercise and Sport Science.**Cr. 1-3. Repeatable, maximum of 6 credits. *Prereq: 6 credits from KIN advanced core and permission of coordinator*

Independent study of problems of areas of interest in exercise and sport science and related areas.

**KIN 490H. Independent Study: Honors.**Cr. 1-2. Repeatable, maximum of 4 credits. *Prereq: 6 credits from KIN advanced core and permission of coordinator*

Independent study of problems of areas of interest in exercise and sport science and related areas.

**KIN 495. Seminar in Exercise and Sport Science.**Cr. 0.5-1. *Prereq: Senior classification*

Offered on a satisfactory-fail basis only.

**Courses primarily for graduate students, open to qualified undergraduates:****KIN 501. Research Methods in Physical Activity.**(3-0) Cr. 3. Repeatable. *Prereq: Graduate classification in kinesiology and health*

Methods and techniques used in the design and interpretation of research involving physical activity. Emphasis on styles of writing, library use, and computer applications.

**KIN 505. Research Laboratory Techniques in Exercise Physiology.**(0-4) Cr. 2. *Prereq: KIN 358 or equivalent course with basic laboratory experience*

Application and use of laboratory research equipment in exercise physiology, including operation, calibration, and use in selected situations.

**KIN 510. Advanced Medical Aspects of Exercise.**(2-0) Cr. 2. *Prereq: KIN 358*

The role of exercise in preventive medicine. Impact of exercise on various diseases, and the effect of various medical conditions on the ability to participate in vigorous exercise and competitive sports. Principles of exercise testing and prescription for individuals with these conditions.

**KIN 512. Movement Education in Elementary School Physical Education.**

(3-0) Cr. 3. F.

Study of learning and teaching in physical education for elementary schools.

**KIN 516. Quantitative Analysis of Human Movement.**(3-1) Cr. 3. *Prereq: KIN 355*

Application of the principles of mechanics to the analysis of human motion. Investigation of the effects of kinematics and kinetics on the human body with special emphasis on exercise and sport applications. Includes consideration of two-dimensional and three-dimensional imaging techniques and force measurements.

**KIN 517. Musculoskeletal Modeling.**(3-1) Cr. 3. F. *Prereq: KIN 355 or permission from instructor*

Systematic problem-solving approaches and design of computer programs for biomechanical analyses. Estimation of anthropometric parameters and mechanical properties of muscles, bones, and joints. Integration of anthropometrics, kinematics, and muscle mechanics into simulations of human movement.

**KIN 518. Student Teaching in Elementary Physical Education.**(0-8) Cr. 8. F.S. *Prereq: KIN 512, KIN 570, KIN 575*

Student teaching for 8 weeks in an elementary school.

**KIN 519. Student Teaching in Secondary Physical Education.**(0-8) Cr. 8. F.S. *Prereq: KIN 512, KIN 570, KIN 575*

Student teaching for 8 weeks in a middle or high school.

**KIN 520. The Social Analysis of Sport.**(3-0) Cr. 3. *Prereq: KIN 360; open to majors only or by permission of instructor*

Sociological analysis of sport with emphasis on sociological theory, sports structure, and function in modern industrialized society; the systems of sport in regard to their role structure; formal organization, and professionalization and its differentiation along social class, age, and sex.

**KIN 521. Advanced Topics in Exercise and Sport Psychology.**(3-0) Cr. 3. *Prereq: KIN 365 or KIN 366, 3 courses in psychology; open to majors only or by permission of instructor*

Aspects of psychology which form a basis for understanding and explaining behavior in the context of exercise and sport. Emphasis on evaluating published research, particularly theory and research methodology. Student presentations.

**KIN 549. Advanced Vertebrate Physiology I.**(Cross-listed with AN S, NUTRS). (4-0) Cr. 4. F. *Prereq: Biol 335; credit or enrollment in BBMB 404 or BBMB 420*

Overview of mammalian physiology. Cell biology, endocrinology, cardiovascular, respiratory, immune, digestive, skeletal muscle and reproductive systems.

**KIN 550. Advanced Physiology of Exercise I.**(2-3) Cr. 3. *Prereq: KIN 505*

Concepts and methods of assessing neurological, muscular, cardiovascular, and respiratory adjustments to exercise.

**KIN 551. Advanced Physiology of Exercise II.**(2-3) Cr. 3. *Prereq: KIN 505*

Analysis of factors affecting work capacity and performance. Human energy metabolism concepts and measurement.

**KIN 552. Advanced Vertebrate Physiology II.**(Cross-listed with AN S, NUTRS). (3-0) Cr. 3. S. *Prereq: BIOL 335; credit or enrollment in BBMB 404 or BBMB 420*

Cardiovascular, renal, respiratory, and digestive physiology.

**KIN 558. Physical Fitness - Principles, Programs and Evaluation.**(2-3) Cr. 3. *Prereq: KIN 358*

Physiological principles of physical fitness, design and administration of fitness programs; testing, evaluation, and prescription; electrocardiogram interpretation.

**KIN 560. Principles of Motor Control and Learning.**(2-3) Cr. 3. *Prereq: KIN 372*

Theoretical perspectives of motor control and learning will be examined as well as factors that facilitate motor learning. Motor control and learning will also be addressed by studying functional tasks such as reach and grasp, posture and locomotor, handwriting, catching and/or speech.

**KIN 561. Motor Development and Physical Activity.**(2-0) Cr. 2-3. *Prereq: PSYCH 230*

Addresses theories and underlying mechanisms of motor development and motor control applied to typically and atypically developing children. Developmental control of balance, locomotion, reach-to-grasp, and other functional skills will be discussed, as will the role of physical activity in a child's life.

**KIN 567. Exercise and Health: Behavior Change.**

(Dual-listed with KIN 467). (3-0) Cr. 3. S. *Prereq: Introductory course with emphasis on exercise psychology (i.e., KIN 366 or equivalent)*

Advanced analysis of theoretical health behavior models and their application to physical activity behavior. Includes practical techniques, tools and interventions (e.g., counseling skills, motivational interviewing) to enhance exercise prescription and motivation, and considerations for working with special populations.

**KIN 570. Physical Activity Assessment for Health Related Research.**

(2-2) Cr. 3.

This course will cover the broad scope of research in physical activity and public health. Emphasis will be placed on the application of physical activity assessment techniques since accurate measures are needed to more accurately assess the health benefits from physical activity and to evaluate the effectiveness of behavioral interventions designed to promote physical activity.

**KIN 571. Measurement in Physical Education.**

(Dual-listed with KIN 471). (3-0) Cr. 3. S.

Study of grading, assessment and evaluation in physical education with a focus on measuring cognitive and psycho-motor achievement.

**KIN 572. Neural Basis of Human Movement.**

(Dual-listed with KIN 472). (3-0) Cr. 3. *Prereq: KIN 372 or PSYCH 310*

Addresses the role of the central nervous system in the control of voluntary human movement, with the focus on the cerebral cortex, basal ganglia and cerebellum. Content organized around specific nervous system damage (such as stroke, apraxia, spasticity, or spinal cord damage) and functional movements (such as reaching and grasping, balance and gait). Converging evidence from human movement disorders, brain imaging, animal lesion and single cell studies provide the primary basis for the content.

**KIN 575. Physical Education Curriculum Design and Program Organization.**

(Dual-listed with KIN 475). (3-0) Cr. 3. F.

Current theory, practices and principles applied to curriculum development for programs in physical education, K-12. Organizing for teaching in a variety of school settings.

**KIN 590. Special Topics.**

Cr. 1-3. Repeatable.

**KIN 590A. Special Topics: Physical Education.**

Cr. 1-3. Repeatable.

**KIN 590B. Special Topics: Health and Exercise Promotion.**

Cr. 1-3. Repeatable.

**KIN 590D. Special Topics: Exercise Physiology.**

Cr. 1-3. Repeatable.

**KIN 590E. Special Topics: Sport Sociology.**

Cr. 1-3. Repeatable.

**KIN 590F. Special Topics: Sport/Exercise Psychology.**

Cr. 1-3. Repeatable.

**KIN 590G. Special Topics: Motor Behavior.**

Cr. 1-3. Repeatable.

**KIN 590H. Special Topics: Biomechanics.**

Cr. 1-3. Repeatable.

**KIN 590I. Special Topics: Research Ethics.**

Cr. 1-3. Repeatable.

**KIN 591. Supervised Field Experience.**

Cr. 1-6. *Prereq: 10 graduate credits in kinesiology and/or related areas*  
Supervised on-the-job field experience in special areas.

**KIN 591A. Supervised Field Experience: Physical Education.**

Cr. 1-6. *Prereq: 10 graduate credits in kinesiology and/or related areas*  
Supervised on-the-job field experience in special areas.

**KIN 591B. Supervised Field Experience: Health and Exercise Promotion.**

Cr. 1-6. *Prereq: 10 graduate credits in kinesiology and/or related areas*  
Supervised on-the-job field experience in special areas.

**KIN 591D. Supervised Field Experience: Exercise Physiology.**

Cr. 1-6. *Prereq: 10 graduate credits in kinesiology and/or related areas*  
Supervised on-the-job field experience in special areas.

**KIN 592. Practicum in College Teaching.**

Cr. 1-3. Repeatable, maximum of 3 credits. F.S.SS.

Supervised experience with teaching an upper division, classroom-based course. Offered on a satisfactory-fail basis only.

**KIN 595. Adapted Physical Education.**

(Dual-listed with KIN 395). (2-3) Cr. 3. F. *Prereq: KIN 375*

Specific disabling conditions in terms of etiology, characteristics, needs, and potential for movement experiences. Techniques of assessment, prescription, adaptation of activities, methods, and program planning. Laboratory experience required. KIN 595 may not be taken by students who have previously earned credit in KIN 395.

**KIN 599. Creative Component.**

Cr. 1-3. Repeatable.

**Courses for graduate students:****KIN 615. Seminar.**

Cr. 1-3. Repeatable.

**KIN 620. Advance Research Methods in Physical Activity.**

(3-0) Cr. 3. S. *Prereq: KIN 501, STAT 401 and STAT 402. Doctoral students only*  
Culminating seminar designed to synthesize statistical and design courses with practical research issues using data from physical activity.

**KIN 699. Research.**

Cr. 1-6. Repeatable.