

HEALTH, PHYSICAL EDUCATION AND EXERCISE SCIENCE, BACHELOR OF SCIENCE (B.S.) WITH A CONCENTRATION IN EXERCISE SCIENCE

The exercise science concentration prepares students to serve as leaders of fitness, health and conditioning programs in corporate, commercial, university and clinical settings that provide exercise programming for apparently healthy individuals and those with chronic disease. Career paths include exercise physiologist, corporate fitness director, cardiopulmonary rehabilitation specialist, strength and conditioning specialist and wellness director. Additionally, the exercise science concentration prepares students for graduate study in exercise science or athletic training and offers an excellent option for those students who want to obtain the pre-requisites for post-graduate study in physical therapy, occupational therapy and medicine.

Learning outcomes

- Graduates will be prepared to serve as leaders of fitness, health and conditioning programs in all sectors.
- Graduates will be able to demonstrate knowledge of core content as evidenced on a basic exercise science competencies checklist.
- Graduates will be able to demonstrate the ability to apply rehabilitative principles and skills in exercise preparation.
- Graduates will be able to demonstrate a conceptual understanding of health related behaviors in the treatment of hypokinetic diseases.
- Graduates will be able to demonstrate the ability to administer wellness programs, assess and prescribe appropriate exercise regimes, and recommend healthful dietary strategies.

Special requirements

A minimum grade of C is required in all HPEX courses and electives. Students cannot use more than one HPEX course (three credits) from the health science core as an elective. All students must attempt a department-approved national certification examination prior to graduation.

Degree requirements for Health, Physical Education and Exercise Science, Bachelor of Science (B.S.) with a concentration in exercise science

General education requirements

Course	Title	Hours
University Core Education Curriculum (minimum 21 credits)		
UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3

Approved humanities/fine arts	3
Approved natural/physical sciences	3-4
Approved quantitative literacy	3-4
Approved social/behavioral sciences	3-4
Total Hours	21-24

Course	Title	Hours
Additional College of Humanities and Sciences requirements (11-23 credits)		
HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)		
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)		
Approved H&S science and technology (fulfills University Core natural/physical sciences)		
Approved H&S general education electives		6-8
Experiential fine arts ¹		1-3
Foreign language through the 102 level (by course or placement)		0-8
Total Hours		11-23

1

Course offered by the School of the Arts

Collateral requirements

Course	Title	Hours
Select from:		
BIOL 101 & BIOZ 101	Biological Concepts and Biological Concepts Laboratory (fulfills approved science and technology and University Core natural/physical science)	
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	
BIOL 205	Basic Human Anatomy	4
CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I	4
MATH 151 or MATH 200	Precalculus Mathematics (fulfills University Core quantitative literacy) or Calculus with Analytic Geometry I	4
PHIS 206 & PHIZ 206	Human Physiology and Human Physiology Laboratory	4
PHYS 201	General Physics I	4
PSYC 101 Play course video for Introduction to Psychology	Introduction to Psychology (fulfills approved human, social and political behavior)	4
PSYC 304	Life Span Developmental Psychology	3
STAT 210	Basic Practice of Statistics	3
Total Hours		22

HPEX core

Course	Title	Hours
HPEX 300	Health Care Delivery in the U.S.	3
HPEX 310	Fitness and Health	3
HPEX 395	Clinical Experience I	3
HPEX 495	Clinical Experience II (fulfills senior capstone)	6
Total Hours		15

Exercise science core

Course	Title	Hours
HPEX 350	Nutrition	3
HPEX 371	Psychology of Physical Activity	3
HPEX 374	Musculoskeletal Structure and Movement	4
HPEX 375 & HPEZ 375	Physiology of Exercise and Physiology of Exercise Laboratory	4
HPEX 380	Resistance Training for Health and Performance	3
HPEX 440	Chronic Disease and Exercise Management	3
HPEX 441	Assessment and Exercise Intervention in Health and Disease	3
HPEX 470	Exercise Programming and Leadership	3
HPEX 475	Cardiovascular Pathophysiology and Pharmacology	3
HPEX 480	Professional Certification Seminar	1
Total Hours		30

Electives

Course	Title	Hours
Select from the course list below		7-21
Total Hours		7-21

The minimum total of credit hours required for this degree is 120.

Electives

Course	Title	Hours
ANTH 301	Human Evolution	4
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	4
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4
BIOL 201	Human Biology	3
BIOL 209	Medical Microbiology	3
BIOL 217	Principles of Nutrition	3
BIOL 300	Cellular and Molecular Biology	3
BIOL 308	Vertebrate Histology	4
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	4
CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	5

CHEM 302 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5
CHEM 403	Biochemistry I	3
HPEX 250	Medical Terminology	1
HPEX 271	Safety, First Aid and CPR	3
HPEX: 300-level and 400-level courses		
HUMS 391	Special Topics in the Humanities and Sciences	1-4
PHIL 201	Critical Thinking About Moral Problems	3
PHYS 202	General Physics II	4
PHIL 213	Ethics and Health Care	3
PHYS 208	University Physics II	5
PSYC 308	Stress and its Management	3
PSYC 309	Personality	3
PSYC 401	Physiological Psychology	3
PSYC 407	Psychology of the Abnormal	3
PSYC 412	Health Psychology	3
SOCY 344	Medical Sociology	3
UNIV 101	Introduction to the University	1
Other adviser-approved courses		

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year

Fall semester	Hours
BIOL 101 Biological Concepts & BIOZ 101 and Biological Concepts Laboratory	4
UNIV 111 Focused Inquiry I Play course video for Focused Inquiry I	3
UNIV 101 Introduction to the University	1
Approved H&S literature and civilization	3
Foreign language (101 level)	4
Term Hours:	
	15

Spring semester

HUMS 202 Choices in a Consumer Society	1
MATH 151 Precalculus Mathematics	4
PSYC 101 Introduction to Psychology Play course video for Introduction to Psychology	4
UNIV 112 Focused Inquiry II Play course video for Focused Inquiry II	3
Foreign language (102 level)	4
Term Hours:	
	16

Sophomore year**Fall semester**

HPEX 300	Health Care Delivery in the U.S.	3
PHIS 206 & PHIZ 206	Human Physiology and Human Physiology Laboratory	4
UNIV 200	Inquiry and the Craft of Argument	3
Approved H&S diverse and global communities		3
HPEX elective		3

Term Hours: 16

Spring semester

BIOL 205	Basic Human Anatomy	4
PSYC 304	Life Span Developmental Psychology	3
STAT 210	Basic Practice of Statistics	3
H&S general education elective		3-4

Term Hours: 13-14

Junior year**Fall semester**

HPEX 310	Fitness and Health	3
HPEX 375 & HPEZ 375	Physiology of Exercise and Physiology of Exercise Laboratory	4
PHYS 201	General Physics I	4
H&S general education elective		3-4

Term Hours: 14-15

Spring semester

CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I	4
HPEX 380	Resistance Training for Health and Performance	3
HPEX 395	Clinical Experience I	3
HPEX 440	Chronic Disease and Exercise Management	3
HPEX 441	Assessment and Exercise Intervention in Health and Disease	3

Term Hours: 16

Senior year**Fall semester**

HPEX 350	Nutrition	3
HPEX 371	Psychology of Physical Activity	3
HPEX 470	Exercise Programming and Leadership	3
HPEX 475	Cardiovascular Pathophysiology and Pharmacology	3
HPEX elective		3

Term Hours: 15

Spring semester

HPEX 374	Musculoskeletal Structure and Movement	4
HPEX 480	Professional Certification Seminar	1
HPEX 495	Clinical Experience II	6
Experiential fine arts		1-3
Open elective		3

Term Hours: 15-17

Total Hours: 120-124

The minimum total of credit hours required for this degree is 120.

HPEX 107. Badminton. 1 Hour.

1 credit.

HPEX 121. Self Defense: Karate or Judo. 1 Hour.

1 credit.

HPEX 201. Individual Sports and Lifelong Leisure Activities. 3 Hours.

Semester course; 3 lecture/laboratory hours. 3 credits. Health, physical education and exercise science majors only. Prepares students to develop educational skills and methodology for instruction of individual sports in the classroom, gymnasium and outdoor field settings; students acquire skills needed to teach individual sports in middle and high school environments.

HPEX 202. Team Sports and Activities. 3 Hours.

Semester course; 3 lecture/laboratory hours. 3 credits. Open only to general health and physical education majors in the health, physical education and exercise science program. Students develop educational skills and methodology for instruction of team sports and group activities in classroom, gymnasium and outdoor field settings. Students acquire skills needed to teach team sports and activities in middle and high school environments.

HPEX 203. Wilderness Education I. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Designed to examine the principal philosophical foundations of adventure theory and wilderness leadership. Concepts of judgment, decision-making, leadership and environmentally correct practices are introduced.

HPEX 211. Tumbling and Elementary Rhythmics. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. Prepares students to work with elementary children 4 to 12 years of age in rhythmic activities; includes elementary tumbling, activities and games designed to help a child's rhythmic ability.

HPEX 216. Lifeguard Training. 1,2 Hour.

1-2 credits.

HPEX 217. Water Safety Instruction. 1,2 Hour.

1-2 credits.

HPEX 218. Scuba. 1 Hour.

1 credit.

HPEX 220. Introduction to Athletic Training. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 205 and BIOZ 205L. Corequisite: HPEZ 220L. An introduction to the field of athletic training. Includes the prevention and basic care of athletic injuries in the physically active.

HPEX 230. History and Philosophy of Health and Physical Education. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An overview of the professional aspects of health and physical education. Historical and philosophical concepts, evaluation and research methods, current issues and trends, and career opportunities are discussed. Field experiences allow exposure to various professionals and facilities related to the health and physical education domains.

HPEX 231. Principles of Accident Prevention. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course is designed to provide information on the magnitude of the accident problem in the nation. Special attention is given to concepts and theories of accident prevention, particularly as they relate to use of highways.

HPEX 232. Introduction to Driver Education. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A current automobile operator's permit is required. An introduction to the vehicle operator's task within the highway transportation system: driver task analysis.

HPEX 250. Medical Terminology. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Self-directed learning experience for students entering a medical or allied health profession. Presents medical terms by their root word, suffix and prefix. Develops skills to build and decode medical terms by their word parts. Develops ability to recognize and use common medical abbreviations.

HPEX 271. Safety, First Aid and CPR. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course includes American Red Cross and/or American Heart Association certification in Multimedia Standard First Aid and Basic Life Support (cardiopulmonary resuscitation). In addition, basic principles of accident causation and prevention are presented.

HPEX 291. Special Topic in Health, Physical Education and Exercise Science. 1-3 Hours.

Semester course; 1-3 credits. May be repeated for a maximum of 3 credits. Restricted to health, physical education and exercise science majors only. Offers students the opportunity to participate in an approved professional experience related to the students' knowledge base of general education and professional introduction courses; may include participatory and experimental formats dictated by the faculty supervisor; credits determined by the number of contact hours of the experience.

HPEX 292. Independent Study in Health, Physical Education and Exercise Science. 1-3 Hours.

Semester course; 1-3 credits. Health, physical education and exercise science majors only. May be repeated up to a maximum of 3 credits. Enables a student to create an individualized research project or professional experience based on specific professional needs and goals; must have adviser's approval; experiences based on the student's knowledge base of general education and professional core introduction courses; credits determined by the number of contact hours and extensiveness of the project.

HPEX 293. Field Practicum I. 3-6 Hours.

Semester course; variable practicum hours. 3-6 credits. Health, physical education and exercise science majors only. Provides observational and small group experiences for the pre-professional student; includes planned observations, tutorials and small group involvement under the supervision of the faculty and field supervisor; summary papers, observational logs, resumes and updated five-year plans are completed in this writing intensive course; minimum of 50 contact hours per credit hour required; consult with adviser to obtain specific course requirements.

HPEX 294. Field Practicum II. 3-6 Hours.

Semester course; variable practicum hours. 3-6 credits. Health, physical education and exercise science majors only. Provides observational and small group experiences for the pre-professional student; includes planned observations, tutorials and small group involvement under the supervision of the faculty and field supervisor; minimum of 50 contact hours per credit hour required; consult with adviser to obtain specific course requirements.

HPEX 295. Clinical Practicum I. 3-6 Hours.

Semester course; variable practicum hours. 3-6 credits. Health, physical education and exercise science majors only. Provides observational and small group experiences for the pre-professional student; includes planned observations, tutorials and small group involvement under the supervision of the faculty and clinical supervisor; summary papers, observational logs, resumes and updated five-year plans are completed in this writing intensive course; a minimum of 50 contact hours per credit hour required; consult with adviser to obtain specific course requirements.

HPEX 296. Clinical Practicum II. 3-6 Hours.

Semester course; variable practicum hours. 3-6 credits. Health, physical education and exercise science majors only. Provides observational and small group experiences for the pre-professional student; includes planned observations, tutorials and small group involvement under the supervision of the faculty and clinical supervisor; a minimum of 50 contact hours per credit hour required; consult with adviser to obtain specific course requirements.

HPEX 300. Health Care Delivery in the U.S.. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Introduces students to the American health care system and provides an opportunity to analyze the diverse components comprising the system. Major components of the system are examined, including inpatient and outpatient services, financing, insurance and technology. Provides the student a perspective of the variety of career choices in health care.

HPEX 310. Fitness and Health. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Enrollment restricted to HPEX majors. Presents the knowledge and pedagogical principles of strength, flexibility, aerobic and anaerobic training programs, as well as the role that exercise and lifestyle play on overall health. Emphasis is on understanding, experiencing and applying conditioning principles for individuals and how they impact health.

HPEX 325. Pathology and Pharmacology in Athletic Training. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: HPEX 220, HPEZ 220L, PHIS 206 and PHIZ/BIOZ 206L. Acquaints the student with the pathology of athletic injuries and the proper use of pharmacology in the treatment of athletic injuries. Includes the pathomechanics of sports injuries and the use of medication in the treatment of sports injuries.

HPEX 330. Elementary Health and Physical Education. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: HPEX 230, and either HPEX 201 or HPEX 202. Open only to general health and physical education majors in the health, physical education and exercise science program. Emphasis is given to the role of movement and theory in the education program and its implications for curriculum development and learning. Major consideration is given to the development of movement competency through thematic instruction.

HPEX 331. Methods in Driver Education. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: HPEX 232. This course is designed to provide driver education instructional principles and methodology.

HPEX 332. Motor Learning and Performance. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course is designed to introduce the student to the major concepts of motor control and motor learning and the influencing conditions. It will provide a framework for understanding the structure and function of the nervous system in relation to perception and motor control. Other topics include the general nature of skill acquisition and how learners interact with the environment while performing motor tasks. The theoretical framework underlying learning and memory are related to the acquisition of motor skills.

HPEX 333. Psychosocial Aspects of Sport and Physical Activity. 3 Hours.

Semester course; 3 lecture hours. 3 credits. The focus of this course is the scientific study of the behavior of individuals and groups within sport and physical activity in terms of the psychological effects and factors of sport participation, and in terms of the social relationships and social settings within which sport participation occurs.

HPEX 334. Measurement and Analysis in Teaching and Exercise Science. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Corequisite: HPEZ 334. Topics include selecting, administering, scoring and evaluating tests in the areas of general motor performance, health screening, fitness, sport skills and knowledge. Includes scientific test construction and basic statistical analysis.

HPEX 335. Elementary Physical Education for Physical Education Majors. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Designed to enhance knowledge of elementary physical education through an analysis of the aims, goals, objectives, programs and teaching methods. Construction of year-round curriculum and daily lesson plans. Emphasis also placed upon the acquisition of administrative and organizational knowledge dealing with facilities, equipment, teaching aids, testing, measurement and safety.

HPEX 337. Technology in Teaching Health and Physical Education. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Emphasis is placed on the application of the latest software and hardware technology used in the field of health and physical education. Students use public school settings and authentic data whenever possible.

HPEX 345. Nutrition for Health and Disease. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Enrollment restricted to HPEX majors. Overview of basic nutritional knowledge for both healthy individuals and those with increased risk of cardiovascular disease. The course relies on evidence-based research when discussing food and nutrition. Topics include science and politics of dietary guidelines; the science and controversies of carbohydrates, proteins, fats, vitamins and minerals; supplements; obesity and weight loss; digestion and absorption; allergies and intolerances; functional foods, phytochemicals and organic food.

HPEX 350. Nutrition. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Provides learning opportunities that enable the student to acquire a practical and useful knowledge based on the sound principles of applied human nutrition. Emphasis will be on nutritional needs through the cycles of life providing information that will enhance the student's own lifestyle and provide experience in interpreting nutritional information for the public.

HPEX 351. Issues in Sexuality. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An overview of content, principles and strategies relating to issues in human sexuality both in the community and school settings. Basic concepts of human sexuality as they develop in today's world are presented. Issues include sexual maturity, reproductive systems, conception, birth, abortion and varieties of sexual behavior and sexual dysfunctions and disorders.

HPEX 352. Substance Abuse. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A survey of drugs that are used and abused in contemporary society. Multidisciplinary lectures and discussions include the historical and sociological perspectives of drugs in the school and community; the psychological and physiological effects of drug use; and the role of local and regional resources. Designed for students, teachers, counselors, administrators and other interested persons. Rehabilitation methods and prevention programs also will be discussed.

HPEX 353. Disease Trends, Prevention and Control. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Pre- or corequisite: HPEX 250. Provides students an opportunity to examine the major categories of diseases, infectious and noninfectious, including significant examples in each category. Students will also research major diseases affecting the U.S. population as well as global populations. Current modalities for the prevention, treatment and control of these diseases will be studied.

HPEX 354. Coping and Adaptation. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Focuses on common stress factors in life such as death, personal loss, life changes, divorce and emotional problems, such as anger, loneliness and frustration. Strategies for dealing with such stressors are discussed and applied to both personal and professional settings.

HPEX 355. School and Community Health Resources. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Acquaints the student with current available school and community resources and educational materials for health information. Available services in a community health program will be surveyed.

HPEX 356. Community Health Education and Promotion: Theory and Practice. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: HPEX 300 and 353. Pre- or corequisite: HPEX 355. Introduces theories, roles and skills that are the foundation for the professional practice of community health education. Emphasizes the growing significance of health education in preventing and/or treating health problems, health promotion and improving quality of life. Presents the historical evolution and development of the profession and the various settings in which health educators practice. Assists in the preparation of students for certification as health education specialists.

HPEX 357. Personal Health and Behavior Change. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Designed to provide students with a basic understanding of various contemporary personal and community health issues. Special emphasis placed on increasing awareness of multiple factors that affect individual health-behavior change and, subsequently, influence current and future health status.

HPEX 358. Introduction to Epidemiology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: STAT 210. Enrollment restricted to HPEX majors. Introduction of students to the field of public health epidemiology, emphasizing methods for assessing factors associated with the distribution and etiology of health and disease. Skills include methods for identifying and evaluating sources of health information, calculation of key epidemiologic measures, epidemiological investigation techniques, and evaluation of the strengths and weaknesses of different study designs.

HPEX 370. Coaching Seminar. 1 Hour.

Semester course; 1 lecture hour. 1 credit. A lecture/discussion course that identifies the practical administrative and organizational responsibilities coaches encounter. Realistic problem-solving is stressed.

HPEX 371. Psychology of Physical Activity. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Examines psychological issues related to physical activity, exercise and sport participation. Topics include individual and group motivation theory and techniques, leadership effectiveness, mental health, mental skills training, injury rehabilitation, eating disorders, exercise adherence, addiction, overtraining and use of ergogenic aids. Emphasizes examination of current research and application of psychological principles in a physical activity setting.

HPEX 372. Survey of Kinesiology and Physiology of Exercise. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Examines the basic concepts of human biomechanics and exercise physiology. Includes basic and applied kinesiology and metabolic, endocrinological, cardiovascular and respiratory responses and adaptations to exercise. Emphasizes the integration of kinesiological and physiological principles.

HPEX 373. Structural Kinesiology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: BIOL 205. Corequisite: HPEZ 373. Presents the anatomical aspects of human motion with particular attention given to application of anatomical structure and terminology in analysis of physical activities; emphasizes structure and function of the human musculoskeletal system and qualitative analysis of motor skills.

HPEX 374. Musculoskeletal Structure and Movement. 4 Hours.

Semester course; 3 lecture and 2 laboratory hours. 4 credits. Prerequisite: BIOL 205. Pre- or corequisite: PHYS 201. Enrollment restricted to HPEX majors. Provides an understanding of the mechanical aspects of human motion with particular attention given to application of anatomical structure, terminology and biomechanics in the analysis of physical activity. Laboratory learning allows students to acquire practical knowledge and skills in palpation, biomechanical analysis and instrumentation.

HPEX 375. Physiology of Exercise. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: PHIS 206. Corequisite: HPEZ 375. Physiological changes in the human organism resulting from exercise, investigation of recent research in diet, drugs, fatigue, cardiovascular/respiratory fitness, conditioning programs for various age groups and the effects of exercise upon various components of physical fitness and health. Application of specific problems to physical education programs. Laboratory experience in the use of research instruments.

HPEX 380. Resistance Training for Health and Performance. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: HPEX 310 and HPEX 375. Enrollment restricted to HPEX majors. Provides students with the knowledge, skills and abilities to design and implement resistance training programs for a variety of populations. Covers the scientific and practical basis for resistance training to reduce injuries, improve health and optimize performance. Students actively participate in and demonstrate knowledge of a range of resistance exercise techniques, as well as preparticipation screening. Helps prepare those students wishing to attempt the National Strength and Conditioning Association's Certified Strength and Conditioning exam.

HPEX 391. Special Topic in Health, Physical Education and Exercise Science. 1-3 Hours.

Semester course; 1-3 credits. Health, physical education and exercise science majors only. May be repeated up to a maximum of three credits. Offers students the opportunity to participate in an approved professional experience related to the students' knowledge base of general education, professional introduction and some core professional courses; may include participatory experiences in which the student plays an active role in the experience; credits determined by the number of contact hours of the experience.

HPEX 392. Independent Study in Health, Physical Education and Exercise Science. 1-3 Hours.

Semester course; 1-3 credits. Health, physical education and exercise science majors only. May be repeated up to a maximum of 3 credits. Enables a student to create an individualized research project or professional experience based on specific professional needs and goals; must have adviser's approval; experiences based on the student's knowledge base of general education and professional introduction and some professional core courses; credits determined by the number of contact hours and extensiveness of the project.

HPEX 393. Field Experience I. 3-6 Hours.

Semester course; variable hours. 3-6 credits. Prerequisites: permission of instructor; acceptance into teacher preparation program; and CPR certification. Health, physical education and exercise science majors only. Precedes the in-depth student teaching experience or the in-depth exercise science field experience; includes planned observations, tutorials, small group involvement under the supervision of the faculty and field supervisor; practices routine, basic and advanced procedures; minimum of 50 contact hours per credit hour required; consult with adviser to obtain specific course requirements.

HPEX 394. Field Experience II. 3-6 Hours.

Semester course; variable hours. 3-6 credits. Health, physical education and exercise science majors only. Designed to provide supervised practical experience in the teaching process or delivery of health education/health promotion programs; opportunities to further abilities in physical education and exercise science through practical application of skills in school or agency settings; a minimum of 50 contact hours per credit hour required; consult with adviser to obtain specific course requirements.

HPEX 395. Clinical Experience I. 3 Hours.

Semester course; 3 clinical hours. 3 credits. Prerequisites for students in the exercise science concentration: HPEX 375, junior standing and permission of instructor. Prerequisites for students in the health sciences concentration: HPEX 250, HPEX 300, HPEX 353 and BIOL 205, junior standing, and permission of instructor. Enrollment restricted to HPEX majors. Students are also expected to maintain current CPR/AED/FA certification throughout the semester. Students should consult with an adviser or course instructor to obtain concentration-specific course prerequisites and course requirements. Addresses competencies in exercise science, health promotion and/or health science. Provides experiences at an approved affiliate site under the supervision of faculty and approved site supervisors. Students gain practical experience in routine and basic procedures associated with exercise science, health promotion and/or health science. A minimum of 40 contact hours per credit hour required.

HPEX 396. Clinical Experience II. 3-6 Hours.

Semester course; variable clinical hours. 3-6 credits. Health, physical education and exercise science majors only. Addresses required competencies in the athletic training, kinesiotherapy or community wellness education programs; provides experiences in an approved affiliate site under the supervision of faculty and approved clinical instructors; gains practical experience in routine, basic and advanced procedures associated with athletic training, kinesiotherapy or community wellness; a minimum of 50 contact hours per credit hour required; consult with adviser to obtain specific course requirements and clinical competencies addressed.

HPEX 420. Athletic Training Administration. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: HPEX 395 and HPEX 396. Acquaints the student with the proper organization and management techniques used in health care administration of athletic training programs. Includes organization, management and administration of health care of the physically active in the athletic setting.

HPEX 430. The Organization, Administration and Supervision of the Intramural Sports Program. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Experiences in the organization and administration of an intramural sports program. Lecture will be devoted to the theory, philosophy, history and plans for the conduct of an intramural sports program. Laboratory experience will be obtained by working in intramural programs.

HPEX 431. Adapted Physical Activity. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prepares future teachers and professionals to meet the needs of persons with disabilities in organized health, physical education and rehabilitation programs in the school, community or hospital setting. Provides an overview of those disabilities found most frequently in public school and rehabilitation settings.

HPEX 432. Methods and Curriculum in Physical Education. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prepares students to become independent problem-solvers and decision-makers by applying previously acquired knowledge to curriculum design and instruction in multiple settings; students acquire pedagogical skills and gain insight into the development of a physical education curriculum for elementary, middle and high school levels.

HPEX 433. Methods and Curriculum in Health Education. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prepares students to become independent problem-solvers and decision-makers by applying previously acquired knowledge to curriculum design and instruction in a classroom setting; students acquire pedagogical skills and gain insight into the development of a health education curriculum for elementary, middle and high school levels.

HPEX 435. Health Disparities in the U.S.. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: HPEX 353 and HPEX 358. Enrollment restricted to HPEX majors. Provides an exploration into the magnitude of health disparities in the U.S. and the association with socioeconomic status, race, ethnicity, country of origin, cultural history and access to health services. Students are encouraged to broaden their perspectives and understand how various sociocultural factors impact health and health care delivery as it relates to the patient/consumer as well as the health care practitioner. Targets the values, beliefs, attitudes and customs of multiple segments of the population in relationship to age, gender, disability status, sexual orientation, area of residence, etc. Emphasizes and provides learning experiences to assist in the development of cultural competence.

HPEX 440. Chronic Disease and Exercise Management. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: HPEX 375 and HPEZ 375L. Presents in-depth information of various concepts specifically related to exercise management of persons with chronic disease and/or disability. Provides scientific knowledge of various chronic diseases and disabilities that are commonplace and can be managed with physical activity. General topics include cardiovascular and pulmonary diseases, metabolic diseases, immunological and hematological diseases, orthopaedic diseases and disabilities, neuromuscular disorders, and cognitive, emotional and sensory disorders. Focuses on the understanding of specific physical and physiological characteristics associated with the various diseases and disabilities.

HPEX 441. Assessment and Exercise Intervention in Health and Disease. 3 Hours.

Semester course; 2 lecture and 1 laboratory hours. 3 credits. Prerequisite: HPEX and HPEZ 375. Provides in-depth information of various concepts specifically related to exercise assessment and prescription for healthy persons and those with chronic disease and/or disability. Examines the various concepts specifically related to measurement of cardiorespiratory fitness, pulmonary function, body composition, flexibility and muscular strength and endurance. Focuses on the development of exercise and physical activity prescriptions for healthy and diseased populations.

HPEX 445. Principles of Health Care Management. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: HPEX 240 or 300. Exposes the student to basic aspects of administration and management in various health care settings. The traditional areas of administration and management, such as planning, organizing, staffing, directing and controlling will be addressed. Contemporary issues such as cultural competence, quality of care, ethics, and fraud and abuse will be examined. The course will provide a theoretical base that will enhance and facilitate the student's application of sound management principles in various practice settings.

HPEX 450. Program Planning and Evaluation. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: HPEX 356. Corequisite: HPEZ 450. Presents the foundations of planning, implementation and evaluation of community health education programs. Exposes students to programming and evaluation in a variety of community health settings, including schools, work sites, hospitals, state and local health departments and nonprofit agencies.

HPEX 451. Professional Conference in Community Health Education. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Offers the student an opportunity to participate in a professional conference focusing on community health education. This experience includes observing, summarizing and critically evaluating presentations, as well as preparing and delivering presentations and networking.

HPEX 470. Exercise Programming and Leadership. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: HPEX 310, HPEX 380 and HPEX 441. Provides knowledge and skills necessary for assessing, interpreting and designing health and activity programs for apparently healthy populations. Students develop leadership skills through presentation of ACSM exercise testing procedures and implementation of exercise prescriptions.

HPEX 475. Cardiovascular Pathophysiology and Pharmacology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: HPEX 375 and HPEX 440 or equivalents. Enrollment restricted to HPEX majors. Presents theoretical principles of electrocardiography and the effects of pharmacological intervention in the treatment of cardiovascular disease. Specific emphasis placed on myocardial ischemia, myocardial infarction and their treatment through exercise rehabilitation protocols. The impact of pharmacological agents on the ECG and on exercise is explored.

HPEX 480. Professional Certification Seminar. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Prerequisites: HPEX 380, HPEX 441 and HPEX 470. Enrollment restricted to seniors in HPEX major. Provides structured experiences in the classroom, laboratory and exercise arenas to improve knowledge, skills and abilities in health-related physical fitness assessment and exercise programming. Supplements existing course work by correcting any deficiencies in learning competencies toward being a successful exercise professional. A review of certification materials is also an important component of the course.

HPEX 491. Special Topic in Health, Physical Education and Exercise Science. 1-3 Hours.

Semester course; 1-3 credits. Health, physical education and exercise science majors only. May be repeated up to a maximum of 3 credits. Offers students the opportunity to participate in an approved professional experience related to the students' knowledge base of general education, professional introduction and extensive core professional courses; may include research-based projects or more academically rigorous experiences; credits determined by the number of contact hours of the experience.

HPEX 492. Independent Study in Health, Physical Education and Exercise Science. 1-3 Hours.

Semester course; 1-3 credits. Health, physical education and exercise science majors only. May be repeated up to a maximum of 3 credits. Enables a student to create an individualized research project or professional experience based on specific professional needs and goals; must have adviser's approval; experiences based on the student's knowledge base of general education, professional introduction and extensive core courses; credits determined by the number of contact hours and extensiveness of the project.

HPEX 493. Field Experience III. 3-12 Hours.

Semester course; variable hours. 3-12 credits. Prerequisites: pass Praxis II; HPEX 393 with a minimum grade of C. Health, physical education and exercise science majors only. An in-depth field experience in a public school, health education/health promotion agency or other approved setting; designed to provide the pre-professional student with greater practical application of skills culminating in full responsibility for planning, implementing and evaluating the classroom, agency or facility activities; a minimum of 50 contact hours per credit hour required; consult with adviser to obtain a course syllabus regarding prerequisites and specific course requirements.

HPEX 494. Field Experience IV. 3-6 Hours.

Semester course; variable hours. 3-6 credits. Prerequisites: pass Praxis II; HPEX 393 with a minimum grade of C. Health, physical education and exercise science majors only. An in-depth field experience in a public school, health education/health promotion agency or other approved setting; designed to provide the pre-professional student with greater practical application of skills culminating in full responsibility for planning, implementing and evaluating the classroom, agency or facility activities; a minimum of 50 contact hours per credit hour required; consult with adviser to obtain a course syllabus regarding prerequisites and specific course requirements.

HPEX 495. Clinical Experience II. 6 Hours.

Semester course; 6 clinical hours. 6 credits. Prerequisites: HPEX 395, senior standing, permission of instructor and minimum grade of C in all HPEX prerequisite courses. Enrollment restricted to HPEX majors. Students are also expected to maintain current CPR/AED/FA certification throughout the semester. Students should consult with an adviser or course instructor to obtain concentration-specific course prerequisites and course requirements. Fulfills capstone requirement. Addresses competencies in exercise science, health promotion and/or health science. Provides experiences at an approved affiliate site under the supervision of faculty and approved site supervisors. Students gain practical experience in routine, intermediate and advanced procedures associated with exercise science, health promotion and/or health science. A minimum of 40 contact hours per credit hour required.

HPEX 496. Clinical Experience III. 3-6 Hours.

Semester course; 6 clinical hours. 6 credits. Prerequisites: HPEX 395, senior standing, permission of instructor and minimum grade of C in all HPEX prerequisite courses. Enrollment restricted to HPEX majors. Students are also expected to maintain current CPR/AED/FA certification throughout the semester. Students should consult with an adviser or course instructor to obtain concentration-specific course prerequisites and course requirements. Addresses competencies in exercise science, health promotion and/or health science. Provides experiences at an approved affiliate site under the supervision of faculty and approved site supervisors. Students gain practical experience in routine, basic and advanced procedures associated with exercise science, health promotion and/or health science. A minimum of 40 contact hours per credit hour required.