

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.

Student learning outcomes

- National standing in strength and conditioning: Students will demonstrate knowledge in optimal strength and conditioning assessments and programming for a variety of populations.
- National standing in exercise physiology: Students will apply knowledge and skills in exercise testing, prescription and program development for both healthy and medically appropriate populations.
- Effective communication: Students will demonstrate the ability to communicate effectively by giving an oral presentation in class.

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

Course	Title	Hours
General education (http://bulletin.vcu.edu/undergraduate/undergraduate-study/general-education-curriculum/)		
Select 30 credits of general education courses in consultation with an adviser.		30
Major requirements		
• Major core requirements		
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	6
• Concentration requirements		
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

Ancillary requirements

• Ancillary core		
BIOL 205	Basic Human Anatomy	4
CHEM 101	General Chemistry I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	3
CHEZ 101	General Chemistry Laboratory I	1
HUMS 202	Choices in a Consumer Society	1
PHIS 206 & PHIZ 206	Human Physiology and Human Physiology Laboratory	4
PHYS 201	General Physics I (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	4
PSYC 101 Play course video for Introduction to Psychology	Introduction to Psychology (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	4
PSYC 304	Life Span Developmental Psychology	3
STAT 210	Basic Practice of Statistics	3

• Additional ancillary requirements

MATH 151	Precalculus Mathematics (either satisfies general education quantitative foundations)	4
or MATH 200	Calculus with Analytic Geometry I	
Experiential fine arts ¹		1-3
Select a biology sequence.		4
BIOL 101 & BIOZ 101	Biological Concepts and Biological Concepts Laboratory	
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	
Foreign language through the 102 level (by course or placement)		0-6
Electives		
Select additional courses from the list below.		16-24
Total Hours		120

1

Course offered by School of the Arts

The minimum number 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	Introduction to Ethics	3
PHYS 202	General Physics II	4
PHIL 213	Ethics and Health Care	3
PHYS 208	University Physics II	0,5
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 & BIOZ 101	Biological Concepts and Biological Concepts Laboratory	4
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
UNIV 101	Introduction to the University	1
Foreign language 101		3

General education course (select BOK to complete requirement for humanities/fine arts and AOI for creativity, innovation and aesthetic inquiry)

Term Hours:	14	
Spring semester		
HUMS 202	Choices in a Consumer Society	1
MATH 151	Precalculus Mathematics (satisfies general education quantitative foundations)	4
PSYC 101	Introduction to Psychology (satisfies general education BOK for social/behavioral sciences and AOI for diversities in the human experience)	4
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Foreign language 102		3
Term Hours:	15	
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	Advanced Focused Inquiry: Literacies, Research and Communication (satisfies general education UNIV foundations)	3
General education course		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
HPEX electives		5-6
Term Hours:	15-16	
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 (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)	4
General education course (select for unfulfilled BOK and/or AOI) or HPEX elective		3
Term Hours:	14	
Spring semester		
CHEM 101	General Chemistry I (satisfies general education AOI for scientific and logical reasoning)	3
CHEZ 101	General Chemistry Laboratory I	1

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
HPEX elective		3
Term Hours:		15-17
Total Hours:		120-123

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

Accelerated B.S. and M.S.

The accelerated B.S. and M.S. program allows qualified students to earn both the B.S. in Health, Physical Education and Exercise Science (either concentration) and M.S. in Gerontology in a minimum of five years by completing approved graduate courses during the senior year of their undergraduate program. Students in the program may count up to 12 hours of graduate courses toward both the B.S. and M.S. degrees. Thus, the two degrees may be earned with a minimum of 138 credits rather than the 150 credits necessary if the two degrees are pursued separately.

Students holding these degrees will have completed advanced course work focused on the application of health and the application of health and well-being among older adults. This will prepare graduates for a wide range of career options that promote physical well-being throughout the lifespan with a special emphasis on well-being in later life. Graduates are prepared to use an interdisciplinary approach to aging using a bio-psych-social model. Graduates will further the person-centered mission of the department largely in areas of administration, education, advocacy and entrepreneurship. Career opportunities exist in health and fitness centers, clinical settings, academic institutions, rehabilitation facilities, public health agencies, long-term care and congregate living, as well as supporting people in the community and within their own homes.

Entrance to the accelerated program

Interested undergraduate students should consult with their adviser as early as possible to receive specific information about the accelerated program, determine academic eligibility and submit (no later than two semesters prior to graduating with a baccalaureate degree, that is, before the end of the spring semester of their junior year) an Accelerated Program Declaration Form to be approved by the graduate program

director. Limited spaces may be available in the accelerated program. Academically qualified students may not receive approval if capacity has been reached.

Minimum qualifications for entrance to this accelerated program include completion of 84 undergraduate credit hours including HPEX 300 and HPEX 310; an overall minimum GPA of 3.0; and a GPA of 3.0 in ancillary requirements, and HPEX concentration core course work. Students who do not meet the minimum GPA requirements may submit GRE scores to receive further consideration. Students who are interested in the accelerated program should consult with the graduate program director of the M.S. program before they have completed 84 credits. Successful applicants would enter the program in the fall semester of their senior year.

Once enrolled in the accelerated program, students must meet the standards of performance applicable to graduate students as described in the “Satisfactory academic progress” section of the Graduate Bulletin, including maintaining a minimum 3.0 GPA. Guidance to students admitted to the accelerated program is provided by both the undergraduate health, physical education and exercise science adviser and the graduate program director of the master’s program.

Admission to the graduate program

Entrance to the accelerated program enables the student to take the approved shared courses that will apply to the undergraduate and graduate degrees. However, entry into an accelerated program via an approved Accelerated Program Declaration Form does not constitute application or admission into the graduate program. Admission to the graduate program requires a separate step that occurs through a formal application to the master’s program, which is submitted through Graduate Admissions no later than a semester prior to graduation with the baccalaureate degree, that is, before the end of the fall semester of the senior year. In order to continue pursuing the master’s degree after the baccalaureate degree is conferred, accelerated students must follow the admission to graduate study requirements outlined in the VCU Bulletin. Three reference letters (at least two from kinesiology and health science faculty members) are required.

Degree requirements

The Bachelor of Science in Health, Physical Education and Exercise Science degree will be awarded upon completion of a minimum of 120 credits and the satisfactory completion of all undergraduate degree requirements as stated in the Undergraduate Bulletin.

A maximum of 12 graduate credits may be taken prior to completion of the baccalaureate degree. These graduate credits will substitute for required major electives for the undergraduate degree. These courses are shared credits with the graduate program, meaning that they will be applied to both undergraduate and graduate degree requirements.

The graduate gerontology courses that may be taken as an undergraduate, once a student is admitted to the program, are listed below:

Course	Title	Hours
GRTY 601	Biological and Physiological Aging	3
GRTY 602	Psychology of Aging	3
GRTY 603	Social Gerontology	3
GRTY 606	Aging and Human Values	3

Recommended course sequence/plan of study

What follows is the recommended plan of study for students interested in the accelerated program beginning in the fall of the junior year prior to admission to the accelerated program in the senior year. The courses for both concentrations will shift to accommodate the accelerated program requirements in their senior year.

For students in the exercise science concentration

Course	Title	Hours
Junior year		
Fall semester		
HPEX 310	Fitness and Health	3
HPEX 375 & HPEZ 375	Physiology of Exercise and Physiology of Exercise Laboratory	4
HPEX 440	Chronic Disease and Exercise Management	3
PHYS 201	General Physics I	4
General education course or HPEX elective		3
Term Hours:		17
Spring semester		
CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I	4
HPEX 374	Musculoskeletal Structure and Movement	4
HPEX 380	Resistance Training for Health and Performance	3
HPEX 395	Clinical Experience I	3
HPEX 441	Assessment and Exercise Intervention in Health and Disease	3
Term Hours:		17
Senior year		
Fall semester		
GRTY 602	Psychology of Aging	3
GRTY 603	Social Gerontology	3
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
Term Hours:		18
Spring semester		
GRTY 601	Biological and Physiological Aging	3
GRTY 606	Aging and Human Values	3
HPEX 480	Professional Certification Seminar	1
HPEX 495	Clinical Experience II	6
Experiential fine arts		1-3
Term Hours:		14-16
Fifth year		
Fall semester		
GRTY 605	Social Science Research Methods Applied to Gerontology	3
GRTY 607	Field Study in Gerontology	1
GRTY 608	Grant Writing	2
Elective		3

Term Hours:		9
Spring semester		
GRTY 604	Problems, Issues and Trends in Gerontology	4
GRTY 607	Field Study in Gerontology	3
Elective		2
Term Hours:		9

For students in the health science concentration

Course	Title	Hours
Junior year		
Fall semester		
HPEX 353	Disease Trends, Prevention and Control	3
HPEX 354	Coping and Adaptation	3
PHYS 201	General Physics I	4
STAT 210	Basic Practice of Statistics	3
Experiential fine arts		1-3
Term Hours:		14-16
Spring semester		
CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I	4
HPEX 358	Introduction to Epidemiology	3
HPEX 445	Principles of Health Care Management	3
PSYC 304	Life Span Developmental Psychology	3
HPEX elective		3
Term Hours:		16
Senior year		
Fall semester		
GRTY 602	Psychology of Aging	3
GRTY 603	Social Gerontology	3
HPEX 345	Nutrition for Health and Disease	3
HPEX 352	Substance Abuse	3
HPEX 395	Clinical Experience I	3
Term Hours:		15
Spring semester		
GRTY 601	Biological and Physiological Aging	3
GRTY 606	Aging and Human Values	3
HPEX 435	Health Disparities in the U.S.	3
HPEX 495	Clinical Experience II	6
Term Hours:		15
Fifth year		
Fall semester		
GRTY 605	Social Science Research Methods Applied to Gerontology	3
GRTY 607	Field Study in Gerontology	1
GRTY 608	Grant Writing	2
Elective		3
Term Hours:		9
Spring semester		
GRTY 604	Problems, Issues and Trends in Gerontology	4
GRTY 607	Field Study in Gerontology	3

Elective	2
Term Hours:	9

Accelerated B.S. and M.S.

The accelerated B.S. and M.S. program allows qualified students to earn both the B.S. in Health, Physical Education and Exercise Science with a concentration in exercise science and M.S. in Health and Movement Sciences in a minimum of five years by completing approved graduate courses during the senior year of their undergraduate program. Students in the program may count up to 12 hours of graduate courses toward both the B.S. and M.S. degrees. Thus, the two degrees may be earned with a minimum of 144 credits rather than the 156 credits necessary if the two degrees are pursued separately.

Students holding these degrees will have completed advanced course work focused on the application of health and movement science principles to exercise science, preparing graduates for a wide range of career options that promote physical well-being in healthy children and adults, athletes, and clinical populations. These career opportunities exist in health and fitness centers, sports programs, clinical settings, academic institutions, rehabilitation facilities and public health agencies, where graduates can pursue employment in community, corporate and university exercise programs, cardiac rehabilitation or advanced study and research in the field of exercise physiology.

Entrance to the accelerated program

Interested undergraduate students should consult with their adviser as early as possible to receive specific information about the accelerated program, determine academic eligibility and submit (no later than two semesters prior to graduating with a baccalaureate degree, that is, before the end of the spring semester of their junior year) an Accelerated Program Declaration Form to be approved by the graduate program director. Limited spaces may be available in the accelerated program. Academically qualified students may not receive approval if capacity has been reached.

Minimum qualifications for entrance to this accelerated program include completion of 84 undergraduate credit hours including HPEX 375, HPEX 440 and undergraduate courses specific to the complementary graduate courses offered in the student's senior year (HPEX 350 prior to HEMS 604; HPEX 371 prior to HEMS 605; HPEX 441 prior to HEMS 610; HPEX 475 prior to HEMS 675); an overall minimum GPA of 3.0; and a GPA of 3.0 in ancillary requirements, HPEX core and exercise science core course work. Students who do not meet the minimum GPA requirements may submit GRE scores to receive further consideration. Students who are interested in the accelerated program should consult with the graduate program director of the M.S. program before they have completed 84 credits. Successful applicants would enter the program in the fall semester of their senior year.

Once enrolled in the accelerated program, students must meet the standards of performance applicable to graduate students as described in the "Satisfactory academic progress" section of the Graduate Bulletin, including maintaining a minimum 3.0 GPA. Guidance to students admitted to the accelerated program is provided by both the undergraduate health, physical education and exercise science adviser and the graduate program director of the master's program.

Admission to the graduate program

Entrance to the accelerated program enables the student to take the approved shared courses that will apply to the undergraduate and graduate degrees. However, entry into an accelerated program via an approved Accelerated Program Declaration Form does not constitute application or admission into the graduate program. Admission to the graduate program requires a separate step that occurs through a formal application to the master's program, which is submitted through Graduate Admissions no later than a semester prior to graduation with the baccalaureate degree, that is, before the end of the fall semester of the senior year. In order to continue pursuing the master's degree after the baccalaureate degree is conferred, accelerated students must follow the admission to graduate study requirements outlined in the VCU Bulletin. Three reference letters (at least two from kinesiology and health science faculty members) are required.

Degree requirements

The Bachelor of Science in Health, Physical Education and Exercise Science degree will be awarded upon completion of a minimum of 120 credits and the satisfactory completion of all undergraduate degree requirements as stated in the Undergraduate Bulletin.

A maximum of 12 graduate credits may be taken prior to completion of the baccalaureate degree. These graduate credits will substitute for required major electives for the undergraduate degree. These courses are shared credits with the graduate program, meaning that they will be applied to both undergraduate and graduate degree requirements.

The graduate health and movement sciences courses that may be taken as an undergraduate, once a student is admitted to the program, are listed below.

Course	Title	Hours
HEMS 600	Introduction to Research Design in Health and Movement Sciences	3
HEMS 601	Movement Physiology	3
HEMS 604	Nutrition for Health and Physical Activity ¹	3
HEMS 605	Psychology of Physical Activity ¹	3
HEMS 610	Laboratory Techniques in Rehabilitation Science ¹	3
HEMS 675	Clinical Exercise Physiology ¹	3

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Offered biennially

Recommended course sequence/plan of study

What follows is the recommended plan of study for students interested in the accelerated program beginning in the fall of the junior year prior to admission to the accelerated program in the senior year.

Course	Title	Hours
Junior year		
Fall semester		
HPEX 375 & HPEX 375	Physiology of Exercise and Physiology of Exercise Laboratory	4
Ancillary requirements		8
Experiential fine arts		1

General education course		3
Term Hours:		16
Spring semester		
HPEX 350	Nutrition	3
HPEX 374	Musculoskeletal Structure and Movement	4
HPEX 395	Clinical Experience I	3
HPEX 440	Chronic Disease and Exercise Management	3
Term Hours:		13
Senior year		
Fall semester		
HEMS 601	Movement Physiology	3
HEMS 604	Nutrition for Health and Physical Activity	3
HPEX 371	Psychology of Physical Activity	3
HPEX 441	Assessment and Exercise Intervention in Health and Disease	3
HPEX 475	Cardiovascular Pathophysiology and Pharmacology	3
Term Hours:		15
Spring semester		
HEMS 600	Introduction to Research Design in Health and Movement Sciences	3
HEMS 605	Psychology of Physical Activity	3
HPEX 470	Exercise Programming and Leadership	3
HPEX 480	Professional Certification Seminar	1
HPEX 495	Clinical Experience II	6
Term Hours:		16
Fifth year		
Fall semester		
BIOS 543	Graduate Research Methods I	3
HEMS 675	Clinical Exercise Physiology	3
HEMS 692	Independent Study	1-3
General elective		3
Term Hours:		10-12
Spring semester		
HEMS 610	Laboratory Techniques in Rehabilitation Science	3
HEMS 695	Externship	1-6
General elective		3
Specified elective		3
Term Hours:		10-15