

Exercise Physiology, B.S.

Degrees Offered

- Bachelor of Science

Nature of the Program

The mission of the Division of Exercise Physiology is to prepare qualified professionals at the BS level to promote health and quality of life through the use of appropriate physical activity and lifestyle behaviors. In addition, it is our mission to provide exercise physiology programs and expertise at the community, state, and national levels, and to make meaningful scientific contributions to the discipline of exercise science through faculty research and by training graduate students in research skills.

The WVU Exercise Physiology Program was established in the Health Sciences Center's School of Medicine in July 1993. The program offers a four-year curriculum leading to a Bachelor of Science (BS) degree in Exercise Physiology, a one- or two-year program leading to a Master of Science (clinical or thesis track), and a doctoral program leading to a PhD in Exercise Physiology. The BS program was recently accredited by The Commission on Accreditation of Allied Health Education Programs (CAAHEP) and meets the knowledge, skill, and aptitude (KSA) requirements for students to be eligible to take the certification examinations offered by the American College of Sports Medicine.

What is an Exercise Physiologist?

Exercise physiology is the study of the biological and biochemical processes associated with exercise and overload that affects the underlying function of cells and organ systems in the human body. Exercise physiology is a rapidly evolving field that is becoming increasingly important in the delivery of healthcare. Exercise physiologists work to prevent or delay the onset of chronic disease in healthy participants or to provide therapeutic or functional benefits to patients with known disease. Services may be offered in a variety of medical settings such as hospitals, rehabilitation centers, and outpatient clinics; in community, corporate, commercial, and university fitness and wellness centers; in nursing homes and senior citizens centers; and in research and academic settings.

Research by scientists trained in exercise physiology have greatly expanded our understanding of the ways in which exercise affects cell function. Advances in research in exercise physiology have provided a foundation for many types of medical treatment in areas that include but are not limited to cardiovascular diseases, diabetes, aging, obesity, and disuse atrophy. Employment opportunities are expanding and increase with experience and level of education.

Exercise physiologists are trained to evaluate people in the areas of cardiovascular fitness, muscular strength and endurance, flexibility, neuromuscular integration, and body composition. Based on the results of these evaluations, exercise physiologists are also trained to provide exercise programs that are designed to increase the functional capacity of the participants.

Exercise physiologists find employment working with athletes, patients, and healthy participants in the areas of disease prevention in wellness programs or rehabilitation in hospital settings. The BS is also a preparatory degree for graduate school. Graduates of this program continue their studies in exercise physiology, physical therapy, medicine, or other health-related careers. Graduates of the MS or PhD programs find employment in corporate wellness, hospital rehabilitation, higher education, or other research settings, while graduates of our PhD program have obtained postdoctoral positions in prestigious universities and medical schools. Additionally, they may be employed in a wide variety of private, community, state, and national agencies. Exercise physiology is an evolving field that is becoming increasingly important with the integration of preventive medicine into the healthcare system.

ADMINISTRATION

CHAIR AND DIRECTOR, UNDERGRADUATE STUDIES

- Randall Bryner - EdD (West Virginia University)
Associate Professor

DIRECTOR, MASTERS OF SCIENCE GRADUATE PROGRAM

- Paul D. Chantler - PhD (Liverpool John Moores University)
Professor

DIRECTOR, PHD PROGRAM

- John M. Hollander - PhD (University of Wisconsin)
Professor

VICE DIRECTOR FOR GRADUATE STUDIES, DIVISION OF EXERCISE PHYSIOLOGY AND DIRECTOR OF ADMISSIONS, HSC OFFICE OF RESEARCH & GRADUATE EDUCATION

- Emidio E. Pistilli - PhD (West Virginia University)
Associate Professor

ASSISTANT CHAIR

- Miriam E. Leary - PhD (University of Texas at Austin)
Assistant Professor

DIRECTOR OF GLOBAL EDUCATION AND SERVICE LEARNING

- Beth Nardella - PhD (West Virginia University)
Associate Professor

EXECUTIVE DIRECTOR OF CLINICAL PROGRAMS AND RESEARCH, HUMAN PERFORMANCE LABORATORY

- Paul D. Chantler - PhD (Liverpool John Moores University)
Professor

DIRECTOR, HUMAN PERFORMANCE LABORATORY

- Brett Rice - MS (West Virginia University)

PROGRAM COORDINATORS

- Jillian Descoteaux - PhD (Ohio University)
Dance Science, Assistant Professor
- Lori Sherlock - EdD (West Virginia University)
Aquatic Therapy, Associate Professor

CO-DIRECTORS, CLINICAL & TRANSLATIONAL SCIENCE PHD PROGRAM

- Paul D. Chantler - PhD (Liverpool John Moores University)
Professor
- I. Mark Olfert - PhD (Loma Linda University)
Professor

FACULTY

PROFESSORS

- Paul D. Chantler - PhD (Liverpool John Moores University)
Director, Masters of Science Graduate Program, Co-Director, Clinical & Translational Science PhD Program
- John M. Hollander - PhD (University of Wisconsin)
Director, PhD Program
- Jean L. McCrory - PhD (Penn State University)
- I. Mark Olfert - PhD (Loma Linda University)
Co-Director, Clinical & Translational Science PhD Program
- Ming Pei - PhD, MD (Beijing Medical University, Xuzhou Medical College)

ASSOCIATE PROFESSORS

- Daniel E. Bonner - MS (West Virginia University)
- Randall Bryner - EdD (West Virginia University)
Chair and Director, Undergraduate Studies
- David Donley - MS (West Virginia University)
- Beth Nardella - PhD (West Virginia University)
Director of Global Education and Service Learning
- Emidio E. Pistilli - PhD (West Virginia University)
Vice Director for Graduate Studies, Division of Exercise Physiology and Director of Admissions, HSC Office of Research & Graduate Education
- Emily Ryan - PhD (Kent State University)
- Lori Sherlock - EdD (West Virginia University)

Aquatic Therapy Program Coordinator

- Sergiy Yakovenko - PhD (University of Alberta)

ASSISTANT PROFESSORS

- Jillian Descoteaux - PhD (Ohio University)
Dance Science Program Coordinator
- Andrew Lane - PhD (University of Florida)
- Brian Leary - PhD (University of Texas at Austin)
- Miriam E. Leary - PhD (University of Texas at Austin)
Assistant Chair
- Dharendra Thapa - PhD (West Virginia University)
- James Thomas - MS (West Virginia University)

ASSOCIATE PROFESSORS EMERITI

- Diana Gilleland - MS (West Virginia University)

Admissions

Due to Covid-19 – Admission requirements may differ from what is listed on this page. Please review the most up-to-date program admission requirements for the Bachelor of Science in Exercise Physiology (<https://admissions.wvu.edu/academics/majors/exercise-physiology/>) major.

First time freshmen eligible to be admitted to WVU are directly admitted to the program.

Transfer students must have a 2.75 cumulative GPA to be admitted to the program.

Current WVU students must attend a major change advising session and have a 2.75 cumulative GPA to be admitted to the program.

EARLY ASSURANCE PROGRAM

The Early Assurance Program (EAP) provides a pathway for well-qualified WVU Exercise Physiology undergraduates to enter the DPT program following completion of their baccalaureate degree. To qualify, students entering WVU from high school must:

- Be admitted to WVU as an Exercise Physiology major
- Have a high school GPA of 3.50 or higher
- Have an ACT Math score of 24 or higher, or SAT Math score of 570 or higher

EAP students who meet the following requirements will continue into the DPT program following completion of their baccalaureate degree:

- Complete all prerequisite coursework (see table above) by the end of the spring semester of their junior year.
- Achieve both overall and prerequisite GPA of 3.50 or higher*.
- Meet the program's other admissions requirements, including a successful interview and satisfactory letters of recommendation, with the following exceptions:
 - The GRE is waived for EAP students.
 - EAP students must obtain at least 10 of the required 60 PT volunteer/observation hours in our program's faculty practice and/or at a WVU Medicine facility.
- Participate in meetings each semester organized by the DPT Admissions Committee and the Exercise Physiology academic advisor.

*EAP students will be evaluated for progression to the DPT program starting in June after completion of the junior year. Interviews will be conducted in August following the junior year.

Students who do not meet the EAP criteria for continuation outlined above but do meet the DPT program's minimum admissions requirements are encouraged to apply using the traditional application process.

ADMISSION REQUIREMENTS 2024-2025

The Admission Requirements above will be the same for the 2024-2025 Academic Year.

Major Code: 8335

[Click here to view the Suggested Plan of Study \(p. 6\)](#)

General Education Foundations

Please use this link to view a list of courses that meet each GEF requirement. (<http://registrar.wvu.edu/gef/>)

NOTE: Some major requirements will fulfill specific GEF requirements. Please see the curriculum requirements listed below for details on which GEFs you will need to select.

Code	Title	Hours
General Education Foundations		
F1 - Composition & Rhetoric		3-6
ENGL 101 & ENGL 102 or ENGL 103	Introduction to Composition and Rhetoric and Composition, Rhetoric, and Research Accelerated Academic Writing	
F2A/F2B - Science & Technology		4-6
F3 - Math & Quantitative Reasoning		3-4
F4 - Society & Connections		3
F5 - Human Inquiry & the Past		3
F6 - The Arts & Creativity		3
F7 - Global Studies & Diversity		3
F8 - Focus (may be satisfied by completion of a minor, double major, or dual degree)		9
Total Hours		31-37

Please note that not all of the GEF courses are offered at all campuses. Students should consult with their advisor or academic department regarding the GEF course offerings available at their campus.

Curriculum Requirements

Code	Title	Hours
University Requirements		24
Exercise Physiology Program Requirements		41
Exercise Physiology Major Requirements		55
Total Hours		120

University Requirements

Code	Title	Hours
General Education Foundations (GEF) 1, 2, 3, 4, 5, 6, 7, and 8 (31-37 Credits)		
Outstanding GEF Requirements 1, 5, 6, and 7		15
EXPH 191	First-Year Seminar	1
General Electives		8
Total Hours		24

Exercise Physiology Program Requirements

A grade of C- or higher must be earned in all graded courses required for the Exercise Physiology Program Requirements. In addition, students must maintain a minimal cumulative GPA of 2.5 to remain in the program. Students who fail to meet or maintain these minimal requirements will be eligible for dismissal. As part of the 120 hours required for graduation, all students must complete one of the exercise physiology areas of emphasis or a minor.

Code	Title	Hours
Select one of the following sequences:		8
BIOL 101 & 101L	General Biology 1 and General Biology 1 Laboratory (GEF 2)	
BIOL 102 & 102L	General Biology 2 and General Biology 2 Laboratory (GEF 2)	
OR		
BIOL 115 & 115L	Principles of Biology and Principles of Biology Laboratory *	

BIOL 117 & 117L	Introductory Physiology and Introductory Physiology Laboratory *	
CHEM 115 & 115L	Fundamentals of Chemistry 1 and Fundamentals of Chemistry 1 Laboratory (GEF 8)	4
CHEM 116 & 116L	Fundamentals of Chemistry 2 and Fundamentals of Chemistry 2 Laboratory	4
Select one of the following sequences:		4
CHEM 231 & 231L	Organic Chemistry: Brief Course and Organic Chemistry: Brief Course Laboratory	
OR		
CHEM 233 & 233L	Organic Chemistry 1 and Organic Chemistry 1 Laboratory	
OR		
CHEM 233 & 233L & CHEM 234 & CHEM 234L	Organic Chemistry 1 and Organic Chemistry 1 Laboratory and Organic Chemistry 2 and Organic Chemistry 2 Laboratory *	
Select one of the following sequences:		8
PHYS 101 & 101L	Introductory Physics 1 and Introductory Physics 1 Laboratory	
PHYS 102 & 102L	Introductory Physics 2 and Introductory Physics 2 Laboratory	
Or		
PHYS 111 & 111L	General Physics 1 and General Physics 1 Laboratory	
PHYS 112 & 112L	General Physics 2 and General Physics 2 Laboratory	
PSYC 101	Introduction to Psychology (GEF 4)	3
PSYC 241	Introduction to Human Development	3
Select one of the following:		4
PSIO 241	Elementary Physiology	
PSIO 441	Mechanisms of Body Function	
Select one of the following (GEF 3):		3
STAT 211	Elementary Statistical Inference	
ECON 225	Elementary Business and Economics Statistics	
Total Hours		41

Exercise Physiology Major Requirements

A grade of C- or higher must be earned in all graded courses required for the major. In addition, students must maintain a minimal cumulative GPA of 2.5 to remain in the program. Students who fail to meet or maintain these minimal requirements will be eligible for dismissal.

Code	Title	Hours
EXPH 101	Introduction to Exercise Physiology	1
EXPH 240	Medical Terminology	1
EXPH 364	Kinesiology	3
EXPH 367	Exercise Nutrition	3
EXPH 369	Strength/Conditioning Methods	4
EXPH 370	Writing for Exercise Science	3
EXPH 386	Advanced Physiology of Exercise 1	3
EXPH 387	Advanced Physiology of Exercise 2	3
EXPH 388	Physiology of Exercise Laboratory 1	1
EXPH 389	Advanced Physiology of Exercise Lab 2	1
EXPH 440	Anatomy for Exercise Physiology	3
EXPH 461	Exercise is Medicine	3

EXPH 475	Industry Organization in Exercise Physiology (or)	3
EXPH 491	Professional Field Experience	4
or EXPH 497	Research	
EXPH 493	Special Topics (Motor Learning and Development)	3
EXPH 496	Senior Thesis	3
Required Area of Emphasis or Minor		13
Number of credits will vary based on selected Area of Emphasis or Minor.		
All students must complete 25 hours of community service per year.		
Total Hours		55

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BIOL 115/BIOL 115L, BIOL 117/BIOL 117L, CHEM 233/CHEM 233L and CHEM 234/CHEM 234L are required for students selecting the Health Professions Area of Emphasis. Students in the General Track can take CHEM 231/CHEM 231L or CHEM 233/CHEM 233L.

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Additional MATH prerequisites may be required for PHYS and STAT courses which are determined by placement. These prerequisite courses will be part of the required General Electives.

SUGGESTED PLAN OF STUDY

First Year

Fall	Hours	Spring	Hours
BIOL 101 & 101L (GEF 2)		4 BIOL 102 & 102L (GEF 8)	4
EXPH 191		1 MATH 128 (GEF 8)	3
MATH 124 (GEF 3)		3 ENGL 101 (GEF 1)	3
PSYC 101 (GEF 4)		3 EXPH 101	1
EXPH 240		1 GEF 5, 6, or 7	3
GEF 5, 6, or 7		3 Required AOE, Minor or General Elective	1
		15	15

Second Year

Fall	Hours	Spring	Hours
PHYS 101 & 101L		4 PHYS 102 & 102L	4
CHEM 115 & 115L (GEF 8)		4 CHEM 116 & 116L	4
PSYC 241		3 PSIO 241	4
ENGL 102 (GEF 1)		3 EXPH 367	3
EXPH 364		3	
		17	15

Third Year

Fall	Hours	Spring	Hours
STAT 211		3 CHEM 231 & 231L	4
EXPH 386		3 EXPH 369	4
EXPH 388		1 EXPH 387	3
EXPH 370		3 EXPH 389	1
EXPH 440		3 Required AOE, Minor or General Elective	3
Required AOE, Minor or General Elective		2	
		15	15

Fourth Year

Fall	Hours	Spring	Hours
EXPH 491		2 EXPH 491	2

EXPH 475	3 EXPH 496	3
EXPH 493 (Motor Learning and Development)	3 EXPH 461	3
Required AOE, Minor or General Elective	6 Required AOE, Minor or General Elective	3
	GEF 5, 6, or 7	3
	14	14

Total credit hours: 120

Areas of Emphasis

- Aquatic Therapy (p. 7)
- Dance Science (p. 7)
- Health Professions (p. 7)

AQUATIC THERAPY AREA OF EMPHASIS REQUIREMENTS

Code	Title	Hours
Minimum GPA of 2.5 required.		
EXPH 450	Theory of Aquatic Therapy	4
EXPH 451	Application of Aquatic Therapy	3
EXPH 452	Aquatic Therapy Facility Management	3
EXPH 491	Professional Field Experience	5
Total Hours		15

DANCE SCIENCE AREA OF EMPHASIS REQUIREMENTS

A GPA of 3.0 is required for acceptance in to the Dance Science Area of Emphasis. An interview with the coordinator of the program is required for admission. The first class in the area of emphasis as seen in the Suggested Plan of Study is offered in the fall semester of junior year.

Code	Title	Hours
Minimum GPA of 2.5 required.		
EXPH 480	Dance Milieu	3
EXPH 481	Performance Enhancement for Dancers	3
EXPH 482	Injury & Illness in Dance	3
EXPH 483	Seminar in Applied Anatomy for Dance Movements	1
EXPH 491	Professional Field Experience	5
Total Hours		15

HEALTH PROFESSIONS AREA OF EMPHASIS REQUIREMENTS

Code	Title	Hours
All courses must be completed but 12 hours replace courses from the general course list		
BIOC 339 or BIOC 531 or AGBI 410	Introduction to Human Biochemistry General Biochemistry Introductory Biochemistry	3 or 4
BIOL 219 & 219L	The Living Cell and The Living Cell Laboratory	4
EXPH 460	Pathophysiology	3
Select one of the following:		4
AEM 341 & 341L	General Microbiology and General Microbiology Laboratory	
GEN 371	Principles of Genetics	
Upper Division BIOL Courses (Excluding BIOL 491, 495, 497)		
Total Hours		14

SUGGESTED PLAN OF STUDY

First Year

Fall	Hours	Spring	Hours
CHEM 115 & 115L (GEF 8)		4 CHEM 116 & 116L	4
BIOL 115 & 115L (GEF 2)		4 BIOL 117 & 117L (GEF 8)	4
MATH 124 (GEF 3)		3 MATH 128 (GEF 8)	3
PSYC 101 (GEF 4)		3 ENGL 101	3
EXPH 191		1 EXPH 101 (GEF 1)	1
EXPH 240		1	
		16	15

Second Year

Fall	Hours	Spring	Hours
PHYS 101 & 101L		4 PHYS 102 & 102L	4
CHEM 233 & 233L		4 CHEM 234 & 234L	4
BIOL 219 & 219L		4 PSIO 241	4
ENGL 102 (GEF 1)		3 EXPH 493 (Nurtirion and Exercise)	3
EXPH 364		3	
		18	15

Third Year

Fall	Hours	Spring	Hours
BIOC 339		4 PSYC 241	3
EXPH 386		3 EXPH 369	4
EXPH 388		1 EXPH 370	3
EXPH 440		3 EXPH 387	3
STAT 211		3 EXPH 389	1
		GEF 5, 6 or 7	3
		14	17

Fourth Year

Fall	Hours	Spring	Hours
EXPH 460		3 EXPH 461	3
EXPH 496		3 EXPH 475	3
Elective Science		3 EXPH 491	4
GEF 5, 6, or 7		3 GEF 5, 6, or 7	3
		12	13

Total credit hours: 120

Major Learning Outcomes

BACHELOR OF SCIENCE (BS) IN EXERCISE PHYSIOLOGY

The Bachelor of Science program in exercise physiology is a preparatory program for graduate or professional school in areas such as exercise physiology, physical therapy, or medicine. The undergraduate program includes courses in science, anatomy, physiology, nutrition, and business, and hands-on laboratories in exercise physiology, and exercise instruction. Students will also complete a 180 hr. clinical internship or research in their senior year. Select senior students can also take a hands on cadaver dissection gross anatomy laboratory to further enhance their ability to compete for admission to Physician Assistant, Physical Therapy, Medicine or other Rehabilitative Science graduate programs.

Students will be able to:

- Critically evaluate scientific information and apply to exercise physiology related concepts
- Integrate foundational science coursework and its application in exercise physiology.

- Use critical reasoning and evidence to methodically and systematically problem solve and develop interventions in exercise physiology.
- Perform and clinically apply health and fitness screening as well as exercise testing and prescription for healthy and chronic disease populations.
- Perform laboratory techniques, analysis and interpretation of data, and application to practice within the discipline.
- Apply professional competencies to discipline related practice, including effectively communicating scientific and clinical information to lay audiences.

Accreditation

The Bachelor of Science and Master of Science (Clinical) programs in Exercise Physiology are accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP).