

EXERCISE AND SPORT SCIENCE COMPREHENSIVE MAJOR: CLINICAL EXERCISE PHYSIOLOGY EMPHASIS (WITH AESP 3+2)

The Clinical Exercise Physiology Emphasis allows students to complete the BS in ESS and the MS in Applied Exercise Science and Performance (AESP) at Western in five years. Students in this emphasis must fulfill all the AESP application requirements by the time they complete 97 credits. Admissions requirements for the AESP program are listed below.

To remain qualified for the Clinical Exercise Physiology Emphasis, upon earning 65 credits by the end of the second year, the student must have:

- Maintained a 3.0 cumulative GPA and a 3.25 GPA within the major.
- Completed ESS 181 Foundations of Exercise and Sport Science, ESS 185 Lifetime Wellness, all 100 level major science courses, 21 credits of general education (not including AREA II: Natural Sciences), and the Biology Human Anatomy and Physiology sequence (BIOL 372 Human Anatomy and Physiology I (with laboratory)/BIOL 373 Human Anatomy and Physiology II (with laboratory)).
- Written, submitted and discussed a Letter of Intent with the AESP program Director and the student's advisor. The Letter of Intent should include preliminary research interests and career goals. This letter will be kept on file with the School of Graduate Studies in partial fulfillment of the application to the AESP program.

Upon earning 97 credits by the end of the third year, the student must have:

- Completed all undergraduate course requirements for the Clinical Exercise Physiology track (except for ESS 430 Topics in Clinical Exercise Physiology and ESS 412 Exercise Biochemistry, which will be taken in the fall and spring, respectively, of the fourth year). Please note: a student may elect to take ESS 498 Internship in Exercise and Sport Science during the summer before their fourth year. See DEGREE PLAN at <https://western.edu/ess> (<https://western.edu/ess/>).
- Requested, and the School of Graduate Studies must have received, two letters of recommendation. At least one letter must be from a Western faculty member. Recommendation letters will be kept on file with the School of Graduate Studies in partial fulfillment of the application to the AESP program.
- Submitted a current resume. The resume will be kept on file with the School of Graduate Studies in partial fulfillment of the application to the AESP program.

Upon satisfying all the requirements listed above, the School of Graduate Studies will consider the student a "AESP candidate with provisional acceptance."

Upon earning 121 credits by the end of the fourth year, the student must have:

- Completed ESS 430 Topics in Clinical Exercise Physiology and ESS 412 Exercise Biochemistry.

- Maintained a 3.0 cumulative GPA and a 3.25 GPA within the major.
- Completed 18 graduate level ESS credits, with at least a 3.0 GPA.

At this time, the School of Graduate Studies will consider the student a "AESP M.S. degree seeking student."

Program Requirements

A minimum of 81 credits is required for the BS. The following is required for the Comprehensive Program with Five-Year MS in Applied Exercise Science and Performance:

Code	Title	Credits
ESS 181	Foundations of Exercise and Sport Science	3
ESS 185	Lifetime Wellness	3
ESS 298	Fitness Instruction	3
ESS 330	Exercise Physiology	3
ESS 331	Exercise Physiology Lab	1
ESS 380	Biomechanics	3
ESS 405	Practicum in Exercise and Sport Science	1
ESS 410	Assessment and Exercise Prescription	3
ESS 412	Exercise Biochemistry	3
ESS 430	Topics in Clinical Exercise Physiology	3
ESS 498	Internship in Exercise and Sport Science	3
BIOL 150	Biological Principles (with laboratory) (GT-SC1)	4
BIOL 372	Human Anatomy and Physiology I (with laboratory)	4
BIOL 373	Human Anatomy and Physiology II (with laboratory)	4
CHEM 111	General Chemistry I (GT-SC2)	3
CHEM 112	General Chemistry Laboratory I (GT-SC1)	1
CHEM 113	General Chemistry II	3
CHEM 114	General Chemistry Laboratory II	1
MATH 141	Precalculus (GT-MA1)	4
MATH 213	Probability and Statistics (GT-MA1)	3
PHYS 140	Introductory Physics (with laboratory) (GT-SC1)	4
One of the following:		3
BIOL 300	Basic Nutrition	
ESS 360	Nutrition for Wellness and Performance	
Year Four AESP Requirements (18 credits)		
ESS 600	Advanced Statistics	3
ESS 601	Quantitative Research Methods	3
ESS 605	Exercise and Sport Science Testing and Instrumentation-Lab	3
ESS 606	Exercise and Sport Science Testing and Instrumentation-Field	3
ESS 640	Environmental Exercise Physiology I	3
ESS XXX	ESS 600-level Elective	3
Total Credits		81

Upon successful completion of the prescribed courses listed above, University defined General Education, and elective requirements totaling 120 credits (with 40 at the 300-level or higher), students are eligible for their B.A. conferral. Students electing to complete the AESP program must follow the balance of their declared emphasis curriculum.

For a full description of the required Graduate coursework, please see the AESP program in the Western Graduate Catalog (<https://>

catalog.western.edu/graduate/programs/high-altitude-exercise-physiology/).

Sample Major Map and Course Sequence

Course	Title	Credits
Year One		
Fall		
BIOL 150	Biological Principles (with laboratory) (GT-SC1) ¹	4
CHEM 111	General Chemistry I (GT-SC2)	3
CHEM 112	General Chemistry Laboratory I (GT-SC1)	1
ESS 181	Foundations of Exercise and Sport Science	3
HWTR 100	First Year Seminar	1
MATH 141	Precalculus (GT-MA1)	4
Credits		16
Spring		
CHEM 113	General Chemistry II	3
CHEM 114	General Chemistry Laboratory II	1
ENG 102	Writing and Rhetoric I (GT-CO1)	3
ESS 185	Lifetime Wellness	3
Gen Ed	General Education course	3
PHYS 140	Introductory Physics (with laboratory) (GT-SC1)	4
Credits		17
Year Two		
Fall		
BIOL 372	Human Anatomy and Physiology I (with laboratory)	4
ENG 103	Writing and Rhetoric II (GT-CO2)	3
Elective	Elective course	3
Gen Ed	General Education	6
MATH 213	Probability and Statistics (GT-MA1)	3
Credits		19
Spring		
Gen Ed	General Education	9
BIOL 373	Human Anatomy and Physiology II (with laboratory)	4
ESS 298	Fitness Instruction	3
Credits		16
Year Three		
Fall		
Elective	Elective course	3
ESS 330	Exercise Physiology	3
ESS 331	Exercise Physiology Lab	1
ESS 360	Nutrition for Wellness and Performance	3
ESS 405	Practicum in Exercise and Sport Science	1
Gen Ed	General Education	3
Credits		14
Spring		
ESS 380	Biomechanics	3
ESS 410	Assessment and Exercise Prescription	3
ESS 498	Internship in Exercise and Sport Science	3-12
Elective		6
Credits		15-24
Year Four		
Fall		
ESS 430	Topics in Clinical Exercise Physiology	3
ESS 601	Quantitative Research Methods	3
ESS 605	Exercise and Sport Science Testing and Instrumentation-Lab	3
ESS 640	Environmental Exercise Physiology I	3
Credits		12
Spring		
ESS 412	Exercise Biochemistry	3
ESS 600	Advanced Statistics	3

ESS 606	Exercise and Sport Science Testing and Instrumentation-Field	3
ESS 675	Clinical Exercise Programming-Lab	3
Credits		12
Total Credits		121-130

- ¹ BIOL 150 Biological Principles (with laboratory) (GT-SC1), BIOL 151 Diversity and Patterns of Life (with laboratory); CHEM 111 General Chemistry I (GT-SC2), CHEM 112 General Chemistry Laboratory I (GT-SC1), CHEM 113 General Chemistry II, CHEM 114 General Chemistry Laboratory II and PHYS 170 Principles of Physics I (GT-SC2), PHYS 171 Principles of Physics II (GT-SC2) satisfy the General Education AREA II: Natural Sciences requirement
- ² PSY 100 General Psychology (GT-SS3) is a requirement for PT and other professional health degrees.
- ³ PHYS 170 Principles of Physics I (GT-SC2)/PHYS 185 Laboratory Physics I (GT-SC1) and PHYS 171 Principles of Physics II (GT-SC2)/PHYS 186 Laboratory Physics II (GT-SC1) OR PHYS 190 General Physics I (GT-SC2)/PHYS 185 Laboratory Physics I (GT-SC1) and PHYS 191 General Physics II (GT-SC2)/PHYS 186 Laboratory Physics II (GT-SC1) may be taken in lieu of PHYS 140 Introductory Physics (with laboratory) (GT-SC1)