EXERCISE & SPORT SCIENCE: HIGH ALTITUDE EXERCISE PHYSIOLOGY, MASTER OF SCIENCE

The Master of Science in High Altitude Exercise Physiology (HAEP) program is designed to examine how the human body functions physiologically, both acutely and chronically, in extreme environments (including, but not limited to, high altitude, heat, cold, and low humidity) during exercise in healthy and diseased populations. The HAEP program is a 36 credit, two year, residential program that culminates in a research-based thesis project. Students who complete the HAEP program will be prepared for careers in academia, research, or clinical practice, as well as further study in the discipline.

Program Goals

- To enhance student understanding of human physiology – at rest and during exercise, in healthy and diseased populations – in extreme environments, including hyper- and hypobarometric conditions, heat, cold, pollution and zero gravity.
- To prepare students for original research under supervision of the ESS-HAEP faculty.
- To prepare students to share their research as presentations, publications or both.
- To prepare students for careers in academia, research or clinical practice, as well as for further study in the discipline.

Student Outcomes

Research — HAEP Graduates will understand Exercise Science research methods and demonstrate the ability to recognize and employ various study designs. They will:

- Be adept at retrieving and analyzing information relevant to Exercise Science.
- Demonstrate knowledge of the background and principle research in their specialization.
- Demonstrate the ability to critically evaluate scientific literature and apply the scientific method to exercise sciences, by actively engaging in the research process with critical analysis and research.
- Demonstrate the ability to situate their own research within the broader context of the Exercise Science field.

Communication and Writing — HAEP graduates will master oral and written skills to present and publish their research in peer-reviewed venues.

Application/Outreach — HAEP graduates will be able to translate research into practice, developing evidence-based exercise prescriptions for individuals with performance goals – particularly those at risk, including special populations – who seek to perform in extreme environments, such as altitude, cold and heat.

Critical Thinking — HAEP Graduates will effectively use information obtained through traditional and non-traditional sources to solve problems related to academic or professional practice.

Technology — HAEP Graduates will use technology to complete tasks within the Exercise Science profession. This includes proficiency with exercise testing equipment and relevant computer skills.

Requirements for Full Admission

Candidate must submit:

- Official Transcript of BA or BS degree in Exercise and Sport Science, or related field from a regionally accredited college or university showing cumulative GPA of at least 3.0 on a 4.0 scale.
- Graduate Record Exam (GRE): General Test Scores: minimum score of 150 for Verbal Reasoning and 150 for Quantitative Reasoning and 4.5 for Analytical Writing. School code for Western's graduate programs is 7527.
- Undergraduate Prerequisite Coursework (all prerequisites must be completed by the end of the first year of the MS. Students cannot start the program with more than two course deficiencies.):
  - General Health and/or Wellness course (lower or upper division)
  - Kinesiology or Biomechanics (lower or upper division)
  - Statistics (lower or upper division)
  - Chemistry (1 year lab-based) (lower or upper division)
  - Biology (general biology with lab) (lower or upper division)
  - Anatomy (with lab), Physiology (with lab) – can be a combined course (lower or upper division)
  - Exercise Physiology (with lab) (upper division)
  - Physics (lower or upper division)

Provisional Admission: An applicant who does not meet the requirements for full admission to the MS in Exercise & Sport Science: High Altitude Exercise Physiology program may be required to submit additional materials in order to be considered for provisional admission upon the recommendation of the program director and approval by the Dean of Graduate Studies. Prerequisite courses that must be completed prior to entering the HAEP program include Anatomy and Physiology and Exercise Physiology (with lab). A provisionally admitted student will have a maximum of one calendar year to complete any pre-requisite academic coursework. The program director or Dean of Graduate Studies may set additional timeline requirements.

International Students: see Graduate Academic Catalog section, Criteria for International Admission.

For admissions requirements for B.S. in Exercise and Sport Science, Clinical Exercise Physiology Emphasis & M.S. in High Altitude Exercise Physiology (3+2) program, please refer to the guidelines outlined in the undergraduate academic catalog under EXERCISE AND SPORT SCIENCE.

Program Requirements

A minimum of 36 credits is required for the HAEP MS degree. A 24 credit core (including 9 thesis credits, taken during the final year) and at least 12 other HAEP credits are taken over the course of two years.

Code	Title	Credits
Core Courses		
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 695	Thesis	9
Select at least twelve credits of the following:		12
ESS 630	Clinical Exercise Physiology	
ESS 641	Environmental Exercise Physiology II	
ESS 660	Health Promotion	
ESS 675	Clinical Exercise Programming-Lab	
ESS 685	Cardiopulmonary Physiology	
ESS 692	Independent Study	
ESS 696	Research	
ESS 699	Practicum/Internship	
Total Credits		**36**