

PH.D. IN HUMAN BIOENERGETICS

This Ph.D. program covers all aspects of Health and Exercise Science. While it primarily prepares students for academic and research careers, it is also a pathway to careers outside academia (e.g. public health, research foundations, footwear/equipment, pharmaceutical, or nutrition industries) that require advanced training in research. The program trains professionals in basic and applied research centered around preventing age-related decline in human health and function, understanding the pathophysiology of disease and disability, as well as designing and testing novel countermeasures and maximizing functional performance in first responders, soldiers, and athletes.

[Learn more about the Ph.D. in Human Bioenergetics on the Department of Health and Exercise Science website.](#)

Students interested in graduate work should refer to the Graduate and Professional Bulletin (<https://catalog.colostate.edu/general-catalog/graduate-bulletin/>).

Learning Objectives

1. Demonstrate knowledge and critical thinking skills within the research laboratory and the classroom (leadership, administrative, teaching/communication, and professional attitude) through laboratory and teaching experiences.
2. Design, implement, execute, and complete novel scientific experiments, reflecting the proper conduct of scientific inquiry.
3. Appraise and apply understanding of ethical issues related to conducting research, best scientific practices and standards for rigor and reproducibility, and apply these in their dissertation.
4. Conduct advanced data analysis in quantitative and/or qualitative processes.
5. Disseminate knowledge effectively through written and verbal communication with expectations that doctoral students submit at least one grant application and publish a minimum of one, first-author manuscript in a peer-reviewed scientific journal.

Requirements Effective Fall 2025

Code	Title	Credits
HES 510	Bioethics--Concepts and Controversies	3
Select 9 credits from the following:		9
HES 500	Environmental Exercise Physiology	
HES 600	Research Design in Health/Exercise Science	
HES 602	Advanced Physiology of Exercise	
HES 608	Physical Activity Intervention Development	
HES 610	Exercise Bioenergetics	
HES 620	The Science of Healthspan	
HES 619	Advanced Neural Control of Movement	
HES 700	Professional Skills in Bioenergetics	
HES 793	Bioenergetics Seminar (1 cr seminar, min 4 semesters required) ¹	4
Statistics ²		6

Directed Electives ³	38
HES 799	Dissertation ³
Program Total Credits:	72

A minimum of 72 credits are required to complete this program.

¹ Seminar must be taken for a minimum of 4 credits (4 semesters), but can be taken more than 4 times.

² Select a minimum of six credits of statistics with approval of advisor. Typical statistics credits taken by HES Ph.D. students include, but are not limited to, the following: STAR 511 and STAR 512.

³ Select additional dissertation credits and/or 500-level and above elective credits with approval of advisor to bring the program total to a minimum of 72 credits. Depending on entry route into program, up to 30 credits may be accepted as directed electives from previous M.S degree or up to 10 credits earned after a bachelor's degree may be counted towards directed electives.

Typical elective credits taken by HES Ph.D. students include, but are not limited to, the following: BIOM 550; BIOM 750; BMS 545; FSHN 530; FSHN 551; NB 505.

Requirements for All Graduate Degrees

For more information, please visit Requirements for All Graduate Degrees (<https://catalog.colostate.edu/general-catalog/graduate-bulletin/graduate-study/procedures-requirements-all-degrees/>) in the Graduate and Professional Bulletin (<https://catalog.colostate.edu/general-catalog/graduate-bulletin/>).

Summary of Procedures for the Master's and Doctoral Degrees

NOTE: Each semester the Graduate School publishes a schedule of deadlines. Deadlines are available on the Graduate School website (<https://graduateschool.colostate.edu/deadline-dates/>). Students should consult this schedule whenever they approach important steps in their careers.

Forms (<https://graduateschool.colostate.edu/forms/>) are available online.

Step	Due Date
1. Application for admission (online)	Six months before first registration
2. Diagnostic examination when required	Before first registration
3. Appointment of advisor	Before first registration
4. Selection of graduate committee	Before the time of fourth regular semester registration
5. Filing of program of study (GS Form 6)	Before the time of fourth regular semester registration
6. Preliminary examination (Ph.D. and PD)	Two terms prior to final examination
7. Report of preliminary examination (GS Form 16) - (Ph.D. and PD)	Within two working days after results are known
8. Changes in committee (GS Form 9A)	When change is made
9. Application for Graduation (GS Form 25)	Refer to published deadlines from the Graduate School Website

9a. Reapplication for Graduation (online)	Failure to graduate requires Reapplication for Graduation (online) for the next time term for which you are applying
10. Submit thesis or dissertation to committee	At least two weeks prior to the examination or at the discretion of the graduate committee
11. Final examination	Refer to published deadlines from the Graduate School Website
12. Report of final examination (GS Form 24)	Within two working days after results are known; refer to published deadlines from the Graduate School website
13. Submit a signed Thesis/ Dissertation Submission Form (GS Form 30) to the Graduate School and Submit the Survey of Earned Doctorates (Ph.D. only) prior to submitting the electronic thesis/ dissertation	Refer to published deadlines from the Graduate School website.
14. Submit the thesis/dissertation electronically	Refer to published deadlines from the Graduate School website
15. Graduation	Ceremony information is available from the Graduate School website