

MASTER OF SCIENCE IN ENVIRONMENTAL HEALTH, OCCUPATIONAL ERGONOMICS AND SAFETY SPECIALIZATION, PLAN A

The Master of Science in Environmental Health, Occupational Ergonomics and Safety Specialization, Plan A, is based on a multidisciplinary group of faculty and courses aimed at enhancing the workplace in terms of safety, process, and product quality, and the quality of work life. The foundation of the program is driven by the utilization of a systems approach in human-centered design and in the most current safety theories and practice. The program integrates a multidisciplinary approach from psychology, engineering, the health sciences, and safety to better understand and optimize human well-being and overall system performance in the workplace.

Graduates from this master's program are typically employed as health and safety managers, ergonomic consultants, safety specialists, human factor specialists, and risk analysts. Companies hiring our graduates often include manufacturing companies, consulting firms, municipalities, universities, medical device companies, and insurance companies.

Learn more about the Occupational Ergonomics and Safety Specialization on the Department of Environmental and Health Sciences website. (<https://vetmedbiosci.colostate.edu/degree-programs/graduate/ms-environmental-health/ergonomics/>)

[Students interested in graduate work should refer to the Graduate and Professional Bulletin.](#)

Learning Objectives

Upon successful completion, students will be able to:

1. Discuss the historical contributions related to modern work processes.
2. Utilize a systems approach to conduct work-site ergonomic and safety risk assessments of specific job tasks.
3. Discuss how workstation organization and layout, equipment, and work processes influence the risk of illnesses and injuries and how to prevent them through human-centered design.
4. Analyze workplace design using the principles of anthropometry, occupational biomechanics, work physiology, occupational psychology, and epidemiology.
5. Interpret and apply anthropometry tables for evaluation and design criteria.
6. Identify and design solutions to improve production efficiency and reduce the risk of work-related injuries and illnesses.
7. Determine the association or causation between occupational and non-occupational risk factors and occupational injuries and illnesses.
8. Apply ergonomic and safety principles to office workstations and design the office layout to reduce the negative health effects of prolonged sitting.

9. Discuss how occupational health psychology issues such as work stress, social support, telepressure, shift work influence job performance and personal health.
10. Implement an ergonomics and safety problem-solving process to develop successful solutions specific to the needs of the workplace environment.
11. Conduct cost-benefit analyses and return on investment (ROI) calculations to justify proposed ergonomic and safety solutions.
12. Successfully participate in occupational ergonomics and safety research.
13. Describe, analyze and interpret the results of ergonomics and safety research in written form.

Requirements Effective Fall 2024

Code	Title	Credits
Core Courses		
DM 575	Human Factors in Design	3
ERHS 520	Environmental and Occupational Health Issues	3
ERHS 526	Industrial Hygiene	3
ERHS 528	Occupational Safety	3
ERHS 532	Epidemiologic Methods	3
ERHS 540	Principles of Ergonomics	3
ERHS 541	Ergonomics in Product and Process Design	3
ERHS 637	Environment, Safety, and Health Management	3
ERHS 679	Occ Env Health Interdisciplinary Symposium	2
ERHS 693E	Research Seminar: Occupational Health and Safety	1
ERHS 699	Thesis	3
PSY 792D	Advanced Seminar: Industrial/Organizational Psychology	3
STAR 511	Design and Data Analysis for Researchers I	4
Program Total Credits:		37

A minimum of 37 credits are required to complete this program.

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