

Foundations for Cognitive, Macro and Physical Human Factors & Ergonomics (HF/E)

May 20 - July 14, 2024

This course presents fundamental concepts from multiple disciplines that are essential to practicing ergonomics. The course begins with core topics from anatomy, kinesiology and the physiology of work as applied to human abilities and limitations. The class continues with an exploration of biomechanics, anthropometry, physical and psychosocial ergonomic risk factors and analytic methods to mitigate risk exposure. Finally, cognitive and macro ergonomic models are introduced with considerations for the professional ergonomist. Learners will also evaluate different environments based on concepts introduced in this course. Pulling these pieces together ensures a comprehensive approach to Human Factors and Ergonomics (HF/E) to both minimize injury and optimize worker performance.

Whether you are currently practicing, new to the field, or tasked with ergonomics as a part of your work responsibilities, this course will fill in the gaps as a comprehensive introduction to certification skills.

REGISTER:

coeh.berkeley.edu/erg100

Part of A One-Year Program.
Courses can be taken individually or sequentially.

Instructors:



Melissa Afterman
MS-HFE, CPE



Meg Honan
MS, PT, CPE

Course Learning Outcomes:

At the completion of this activity, the learner will be able to:

- Define ergonomics and the various disciplines that contribute to the field
- Describe the human musculoskeletal system and its limitations related to work
- Identify and quantify the demands of work in terms of primary physical risk factors associated with work-related musculoskeletal disorders (MSDs)
- Summarize other factors that are associated with work related MSDs such as personal and work psychosocial factors
- Illustrate proper application of anthropometric measurements for analysis and design
- Identify and apply common risk assessment tools to evaluate physical exposures
- Compare the physical demands of a task to human capacity and ergonomics guidelines and identify mismatches that indicate risk
- Perform a basic risk analysis of the design of existing controls and displays
- Perform a root cause analysis of observed ergonomic risk factors
- Integrate ergonomic approaches to the redesign of work by developing controls that reduce hazards and mitigate risk
- Describe a basic cost benefit analysis and calculate a simple return-on-investment to support a proposed solution
- Describe macro ergonomics and participatory approaches to surveillance, assessment, and controls to prevent MSDs and optimize performance in a large workforce
- Plan a path to certification or employment in the field of ergonomics
- Demonstrate a fundamental knowledge of the science of human factors and ergonomics and ethical responsibility in practice

Course Format:

This asynchronous online course engages students with weekly activities posted on the course site. Students will read and/or watch resource materials, participate in online discussion forums and complete individual and paired assignments. The information needed to complete assignments and prepare for the online midterm and final exams will be included in the resource material on the course site. We anticipate weekly content and assignments to require anywhere between 10-20 hours of involvement depending on the individual student's strength and familiarity with HF/E.

Registration Cancellation Policy:

Written cancellation notification must be received no later than one week before the start date of an Online Ergonomics Program class in which you are registered in order to qualify for a refund for that class, less a \$65.00 administrative fee per class. Substitute attendees are welcome.

See coeh.berkeley.edu/erg100 for transfer, withdrawal, and class cancellation policies.

Single Course: \$1,650

6-Course Package*: \$9,450

*** Includes admission to Applied Skills in Ergonomics, a hands-on workshop in Berkeley, CA valued at \$1,125!**

Accreditation:

Learners may be eligible to earn up to **45 Contact Hours (4.5 CEUs)**. This course is offered on a pass/fail basis for continuing education credit. Learners must obtain a final grade of 70% or higher, and a final exam grade of 60% or higher, to pass the course and to obtain a Certificate of Completion.

Certified Professional Ergonomists may be eligible to earn up to 45 contact hours for this course.

COEH (BOC AP#: P10242) is approved by the Board of Certification, Inc. to provide continuing education to **Certified Athletic Trainers**.

ABIH® Diplomates may be eligible to earn up to 45 contact hours for this course.

Certified Safety Professionals may be eligible to earn up to 45 contact hours for this course.

Provider approved by the **California Board of Registered Nursing**, Provider Number 12983, for 45 contact hours.

This course has been approved for 45 contact hours, **REHS**. COEH is a REHS Program Continuing Education Accreditation Agency approved by the California Department of Public Health.

Occupational Therapists may be eligible to earn up to 45 contact hours for this course.