

University of Houston-Clear Lake
Certificate in Human Factors and Ergonomics (HF/E)
Offered jointly through the Schools of Science and Computer Engineering
and Human Sciences and Humanities

The certificate in Human Factors and Ergonomics (HF/E) at UHCL is designed to give students knowledge regarding HF/E and user-centered design. This knowledge is important for those who need to know more about HF/E and, in particular, for those who implement, manage, and test requirements designed by HF/E professionals. The course structure of the certificate is designed so it can be complete in 3 semesters—Fall, Spring and Summer (total cost: less than \$8,000). *Note: For those interested in continuing on for a Master's degree, an additional 12 hours of coursework (4 classes) and 6 hours (2 semesters) of Thesis, Project, or Internship is required.*

Focus of the certificate:

Attention	HF in System Design	Mental Workload Assessment
Biological Rhythms	Human-Computer Interaction	Olfactory & Tactual Displays
Biomechanical Ergonomics	Human Information Processing	Sensory Systems
Control Design	Information Design	Shift Work
Decision Making	Keyboard Design	Anthropometrics
Display & Control Design	Man-Machine Systems	Symbols & Graphics
Environmental Controls	Memory Systems	Visual Displays and Codes

Required Courses:

Research Design: *Literature review process, question development, how to isolate and operationalize variables, survey development, and experimental design.*

Statistics (or approved statistics substitute): *Descriptive and inferential statistics including regression, ANOVA, and factorial designs.*

Human Factors Engineering: *An analysis of the principles of human factors, along with an introduction and overview of the HF/E disciplines.*

User Centered Design: *How users should be included in the design process including needs analysis, requirements writing (so it is interpretable to other disciplines!), iterative testing of low/medium/high fidelity prototypes, implementation of requirements, and evaluation.*

HF/E Methods: *Presents a variety of methods to analyze tasks and make accommodation and redesigns based on the principles of human factors and ergonomics.*

Specialization (Choose one of the following):

Human Computer Interaction (HCI): *Topics that particularly relate to HCI, for example, Fitt's law, human as information processor, cognitive modeling, GOMS, software for user testing, etc.*

Safety & Warnings: *Issues related to establishing and maintaining safe working environments from a human perspective, i.e., judgment and decision-making, error analyses using Reason's model, behavioral based safety management programs and team operations.*

Biomechanics and Ergonomics: *Overview of HF/E's use of biological/engineering principles to design a safe and effective workplace environment including biomechanics, anthropometry, heat and cold stress, etc.*

To apply or inquire:

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