

Human Factors (HFCT)

HFCT 300 Principles and Fundamentals 3 Credits (3,0)

Basic principles of Human Factors Psychology; optimizing interactions between people and machines while considering environmental factors.
Prerequisites: PSYC 101 or PSYC 222

Course Offered at: Daytona Beach, Prescott, Worldwide

HFCT 302 Analytic Methods and Techniques 3 Credits (3,0)

Engineering and behavioral analytic methods, theoretical concepts, and tools used in Human Factors for system design or redesign.
Daytona Beach Corequisites: HFCT 302L

Prescott Corequisites: HFCT 302L

Prerequisites: HFCT 300

Course Offered at: Daytona Beach, Prescott, Worldwide

HFCT 302L Analytic Methods and Techniques Laboratory 1 Credit (0,1)

Hands-on interaction with human factors concepts. Measurement of human performance; interpretation of data for design considerations and practical applications.
Corequisites: HFCT 302

Course Offered at: Daytona Beach, Prescott

HFCT 307 Performance Processes 3 Credits (3,0)

Intermediate and advanced knowledge in human and system performance measurement; design evaluation practices; contributes to Human Factors practitioner's core skills.

Daytona Beach Prerequisites: HFCT 300 and HFCT 302

Daytona Beach Corequisites: HFCT 307L

Prescott Prerequisites: HFCT 300 and HFCT 302

Prescott Corequisites: HFCT 307L

Worldwide Prerequisites: HFCT 300 and HFCT 302

Course Offered at: Daytona Beach, Prescott, Worldwide

HFCT 307L Performance Processes Laboratory 1 Credit (0,1)

Hands-on interaction with human factors concepts. Measurement of human performance; interpretation of data for design considerations and practical applications.

Prerequisites: HFCT 300

Corequisites: HFCT 307

Course Offered at: Daytona Beach, Prescott

HFCT 310 Human-Computer Interaction 3 Credits (3,0)

Design and evaluation of human-computer interfaces, emphasizing usability principles and interaction quality.

Prerequisites: HFCT 300

Course Offered at: Daytona Beach, Prescott, Worldwide

HFCT 312 Ergonomics and Bioengineering 3 Credits (3,0)

Assessment and application of ergonomics and biomechanical principles to improve the design of work environments, tasks, tools, and equipment to optimize human well-being and overall system performance.

Prerequisites: HFCT 300

Course Offered at: Daytona Beach, Prescott

HFCT 315 Automation and Systems Issues in Aviation 3 Credits (3,0)

Analysis of current issues in new aviation systems, examining assumptions and alternative systems.

Prerequisites: HFCT 300

Course Offered at: Daytona Beach, Prescott, Worldwide

HFCT 320 User Experience/User Interface 3 Credits (3,0)

Introductory course on User Experience metrics and methods; analysis of positive/negative user design, hands-on experience with the methods; conducting industry-style projects.

Prerequisites: HFCT 300

Course Offered at: Prescott, Worldwide

HFCT 321 Psychopharmacology 3 Credits (3,0)

Introduction to pharmacology, focusing on drugs that affect brain function and are relevant to aerospace. Covers FDA regulations, FAA policies, and mechanisms of drug effects.

Prerequisites: HFCT 300

Course Offered at: Daytona Beach, Prescott

HFCT 323 Aging: Behavioral and Biological Foundations 3 Credits (3,0)

Theories of aging; psychological, perceptual, motor, and physical changes associated with aging. Investigates the design of tools/environments for older adults.

Prerequisites: HFCT 300

Course Offered at: Daytona Beach

HFCT 325 Human Factors and System Safety 3 Credits (3,0)

Integration of human factors in all system lifecycle phases; emphasizes accident prevention through sound management and systems engineering.

Prerequisites: HFCT 300

Course Offered at: Daytona Beach

HFCT 326 Human Performance in Extreme Environments 3 Credits (3,0)

Physiological, behavioral, and human factors issues of performance in extreme environments. Application of human factors principles across disparate extreme environments to include the implications of system and tool design as well as personnel training and selection to enhance performance, safety, and health in extreme environments.

Prerequisites: HFCT 300

Course Offered at: Daytona Beach

HFCT 330 Human Factors in Space 3 Credits (3,0)

Aerospace human factors focusing on living and working in space. Research and principles essential for optimizing human-machine interactions.

Daytona Beach Prerequisites: HFCT 300

Prescott Prerequisites: HFCT 300

Course Offered at: Daytona Beach, Worldwide, Asia

HFCT 335 Human Factors in Air Traffic Control 3 Credits (3,0)

Application of human factors to air traffic control systems, covering full-range applications in the field.

Prerequisites: HFCT 300

Course Offered at: Daytona Beach

HFCT 337 Driving Safety: Role of Driver Behavior, Design, and Policy 3 Credits (3,0)

Examines driver behavior, roadway and vehicle design, public policy, and interventions for road safety, focusing on driver distraction and crash severity.

Prerequisites: HFCT 300

Course Offered at: Daytona Beach

HFCT 352 Human Factors in Entertainment Systems 3 Credits (3,0)

Explores human factors considerations in entertainment system design, such as gaming, media, and sports, with a focus on flow, engagement, and social dynamics.

Prerequisites: HFCT 300

Course Offered at: Daytona Beach

HFCT 399 Special Topics in Human Factors 1-6 Credit (1-6,0)

Individual, independent, or directed studies of selected topics in human factors.

Course Offered at: Daytona Beach, Prescott, Worldwide

HFCT 400 System Design 4 Credits (4,0)

Explores engineered systems and human factors throughout the lifecycle of such systems, focusing on roles, interactions, and evaluation practices.

Prerequisites: HFCT 302 and HFCT 307 and HFCT 307L

Course Offered at: Daytona Beach, Prescott

HFCT 401 Applied Research 3 Credits (3,0)

Discusses research methods in human factors and system design; covers experimental, survey, and case study techniques, and data interpretation.

Prerequisites: HFCT 300 and PSYC 101

Course Offered at: Worldwide

HFCT 410 Human Factors Engineering: Crew Station Design 3 Credits (3,0)

In-depth application of human factors principles in the design of crew command centers for aviation and aerospace systems.

Prerequisites: HFCT 300

Course Offered at: Daytona Beach

HFCT 412 Simulating Humans in Complex Systems 3 Credits (3,0)

Theory and applications for modeling human behavior in the operation of complex systems.

Prerequisites: HFCT 300

Course Offered at: Daytona Beach

HFCT 415 Human Factors in Simulation Systems 3 Credits (3,0)

Covers human factors in simulation, including history, state-of-the-art systems, crew training, and simulator sickness.

Prerequisites: HFCT 300

Course Offered at: Daytona Beach

HFCT 422 Applied Ergonomic Design, Analysis, and Evaluation 3 Credits (3,0)

Comprehensive exposure to ergonomic analysis in human-machine systems design; uses CATIA's human modeling and statistical analysis techniques for ergonomic design verification.

Prerequisites: HFCT 300

Course Offered at: Daytona Beach

HFCT 440 Aerospace Physiology 3 Credits (3,0)

Adaptability of physiological systems in aerospace environments; covers nervous, cardiac, pulmonary systems, and impacts of environmental stressors on performance and human limitations.

Prerequisites: BIOL 120 and HFCT 300

Course Offered at: Daytona Beach

HFCT 490 Practicum in Human Factors Psychology 3 Credits (3,0)

Supervised practicum through co-ops, internships, or on-campus research teams. Provides practical experience in real-world settings. Completion of a specific project under the supervision of an organizational sponsor or faculty member.

Course Offered at: Daytona Beach, Prescott

HFCT 491 Human Factors Capstone 3 Credits (3,0)

Applied experience through project-based work on an human factors-related industry problem. Focuses on demonstrating practical skills and knowledge.

Prerequisites: HFCT 300 and HFCT 401

Course Offered at: Worldwide

HFCT 499 Special Topics in Human Factors 1-6 Credit (1-6,0)

Individual, independent, or directed studies of selected topics in human factors.

Course Offered at: Daytona Beach, Prescott, Worldwide