

B.S. in Human Factors Psychology

The Bachelor of Science in Human Factors Psychology examines how tools, technology and environments can be designed to work with people. Human factors psychology is the study of how people think, perform and interact with systems, and how those systems can be improved to support human abilities and reduce errors. The program provides a foundation in human performance and system evaluation to support the design of safer and more effective environments. Coursework includes human performance characteristics and system evaluation methodologies, with a focus on technology across a wide variety of industries. Human factors is a term often used interchangeably with user experience design, human-computer interaction (HCI), workplace ergonomics and human-systems integration (HSI). The curriculum focuses on how people interact with the tools and technologies in their environments to understand and optimize human performance.

At the **Daytona Beach Campus**, the Bachelor of Science in Human Factors Psychology provides opportunities to gain research experience from a systems perspective through coursework and laboratory experiences. The program includes access to facilities such as the Aerospace Physiology Lab, Aviation Human Factors Lab, Research in User Experience (RUX) Lab and Applied Perception and Performance Lab. Students analyze the implications of human and machine characteristics on the function of complex systems. Qualified students may also participate in combined programs that allow them to begin graduate coursework toward the Master of Science in Human Factors or the Master of Business Administration while completing the bachelor's degree.

At the **Prescott Campus**, the Bachelor of Science in Human Factors Psychology examines the application of human factors principles across multiple domains through coursework such as Psychology of Gaming and Aviation Psychology. The program includes study in human behavior, ergonomics, user experience design and cognitive engineering. Students develop the skills to conduct, design and apply human factors research to the evaluation of simple and complex systems. Laboratory experiences are available in facilities including the Human Factors/Ergonomics Lab, the Simulation Science, Games and Animation Lab and the Robertson Aircraft Accident Investigation Crash Lab. Qualified students may also participate in combined programs that allow them to begin graduate coursework toward the Master of Science in Human Factors or the Master of Aviation Safety through the Worldwide & Online Campus while completing the bachelor's degree.

At the **Worldwide & Online Campus**, the Bachelor of Science in Human Factors Psychology focuses on the knowledge used to guide decisions related to the design, use, maintenance and improvement of systems that rely on human interactions. The curriculum examines the application of human factors psychology across areas including artificial intelligence, aviation, ergonomics, human-systems integration, safety, simulation and robotics. Students may gain applied experience through practicums, internships or virtual research teams. Students select two of three specializations: Organizational Behavior and Leadership, Psychological Foundations of Human Factors, or Safety. Qualified students may also participate in a combined program that allows them to begin graduate coursework toward the Master of Science in Human Factors while completing the bachelor's degree.

Program-Level Student Learning Outcomes

Students will:

- Describe characteristics of human anatomy, physiology, sensation, and perception, with emphasis on vision, audition, and vestibular systems.
- Describe characteristics and limitations of human memory and cognition.

- Relate ergonomic and bioengineering factors to human-machine system design and performance.
- Critically evaluate scientific research.
- Apply experimental designs for the behavioral sciences.
- Function effectively using professional communication skills in human factors and ergonomics team projects.
- Apply human-machine system analysis and design methodologies across various domains.
- Apply human factors psychology principles to human-machine system performance in various domains.
- Interpret applied statistical analyses for the behavioral sciences.

Daytona Beach Program Requirements

General Education Requirements	36
Core Requirements	48
Specified Electives	18
Open Electives	21
Total Credits	123

General Education Requirements

Communication	9
COMM 122 English Composition	
Humanities - Lower Level	3
Social Sciences - Lower Level	3
PSYC 101 Introduction to Psychology	
or PSYC 222 Introduction to Industrial/Organizational Psychology	
Humanities/Social Sciences - Lower or Upper Level	
Humanities/Social Sciences - Upper Level	3
Computer Science/Information Technology	3
Mathematics	6
Physical/Life Sciences *	6
Total Credits	36

* One course must have a lab

Core Requirements

HFCT 300	Human Factors Principles and Fundamentals	3
HFCT 302	Human Factors Methods and Techniques	3
HFCT 302L	Human Factors Methods and Techniques Laboratory	1
HFCT 307	Human Factors Performance Processes	3
HFCT 307L	Performance Processes Laboratory	1
PSYC 310	Sensation and Perception	3
PSYC 315	Cognitive Psychology	3
HFCT 310	Human-Computer Interaction	3
HFCT 312	Ergonomics and Bioengineering	3
HFCT 400	System Design	4
PSYC 323	Research Design	3
PSYC 323L	Research Methods Laboratory	1
UNIV 101	College Success	1
HFCT 490	Practicum in Human Factors Psychology	3
or HFCT 401	Applied Research	
or HFCT 491	Human Factors Capstone	
or PSYC 490	Psychology Capstone	
or COIN 396	Co-Operative Education	
or COIN 496	Co-Operative Education	
PSYC 312	Research Analysis in Psychology	4
PSYC 335	Physiological Psychology	3

Computer Science Electives

Choose Two of the Following:	6
Any CPSC, BUAN 125, BUAN 232, CESC 220, CESC 220L, CYBR 235, ENGR 115, ENGR 120, SFTW 300	
Total Credits	48

Specified Electives

Upper-Level HFCT Courses	9
Upper-Level PSYC Courses	9
Total Credits	18

Open Electives

Open Electives	21
Total Credits	21

Suggested Plan of Study

Year One

Requirements	Credits
COMM 122 - English Composition	3
PSYC 101 - Introduction to Psychology	3
MATH 120 - Applied College Algebra or 111 - Pre-calculus for Aviation	3
CPSC 120 - Introduction to Computing in Aviation	3
UNIV 101 - College Success	1
Semester Hours	13

Requirements	Credits
COMM 219 - Speech	3
HFCT 300 - Principles and Fundamentals	3
MATH 220 - Concepts of Calculus or 112 - Applied Calculus for Aviation	3
Humanities - Lower Level (140 series)	3
Physical/Life Sciences with Lab	4
Semester Hours	16

Total Credits

Total Hours for All Requirements: 29

Year Two

Requirements	Credits
COMM 221 - Technical Communication	3
PSYC 312 - Research Analysis in Psychology	4
Computer Science Elective	3
Specified Elective - Human Factors	3
Open Elective	3
Semester Hours	16

Requirements	Credits
HFCT 302 - Analytic Methods and Techniques	3
HFCT 302L - Analytic Methods and Techniques Laboratory	1
PSYC 335 - Physiological Psychology	3

Humanities/Social Sciences Lower or Upper Level	3
Physical/Life Sciences	3
Open Elective	3
Semester Hours	16

Total Credits

Total Hours for All Requirements: 32

Year Three

Requirements	Credits
HFCT 307 - Performance Processes	3
HFCT 307L - Performance Processes Laboratory	1
HFCT 310 - Human-Computer Interaction	3
Computer Science Elective	3
Humanities/Social Sciences - Upper Level	3
Open Elective	3
Semester Hours	16

Requirements	Credits
HFCT 490 - Practicum in Human Factors Psychology, COIN 396 - Co-Operative Education, or COIN 496 - Co-Operative Education	3
HFCT 312 - Ergonomics and Bioengineering	3
PSYC 323 - Research Design	3
PSYC 323L - Research Methods Laboratory	1
Specified Elective - Psychology	3
Open Elective	3
Semester Hours	16

Total Credits

Total Hours for All Requirements: 32

Year Four

Requirements	Credits
PSYC 315 - Cognitive Psychology	3
PSYC 310 - Sensation and Perception	3
Specified Elective - Human Factors	3
Specified Elective - Psychology	3
Open Elective	2
Semester Hours	14

Requirements	Credits
HFCT 400 - System Design	4
Specified Elective - Human Factors	3
Specified Elective - Psychology	3
Open Elective	3
Open Elective	3
Semester Hours	16

Total Credits

Total Hours for All Requirements: 30

Prescott Program Requirements

General Education Requirements	36
Core Requirements	60
Specified Electives	9
Open Electives	15
Total Credits	120

Program Details

The Bachelor of Science in Human Factors Psychology program requires successful completion of a minimum of 120 credit hours. The program may be completed in eight semesters, or four years, assuming appropriate background and full-time enrollment. Students pursuing this undergraduate degree must earn a minimum cumulative grade point average (CGPA) of 2.00 for all work completed at the University. Students are encouraged, but not required, to complete a minor field of study. The courses necessary to earn this degree are listed below.

Students are encouraged to participate in applied practicum experiences, such as internships, cooperative education opportunities, or undergraduate research, to gain practical experience and enhance career readiness. Students are responsible for ensuring that all prerequisite and degree requirements are met prior to enrollment in advanced coursework.

General Education Requirements

Communication	9
COMM 122 English Composition	
Humanities - Lower Level	3
Social Sciences - Lower Level	3
PSYC 101 Introduction to Psychology	
or PSYC 222 Introduction to Industrial/Organizational Psychology	
Humanities/Social Sciences - Lower or Upper Level	3
Humanities/Social Sciences - Upper Level	3
Computer Science/Information Technology	3
Mathematics	6
Physical/Life Sciences *	6
Total Credits	36

* One course must have a lab

Core Requirements

HFCT 300	Human Factors Principles and Fundamentals	3
HFCT 302	Human Factors Methods and Techniques	3
HFCT 302L	Human Factors Methods and Techniques Laboratory	1
HFCT 307	Human Factors Performance Processes	3
HFCT 307L	Performance Processes Laboratory	1
PSYC 310	Sensation and Perception	3
PSYC 315	Cognitive Psychology	3
HFCT 310	Human-Computer Interaction	3
HFCT 312	Ergonomics and Bioengineering	3
HFCT 400	System Design	4
PSYC 323	Research Design	3
PSYC 323L	Research Methods Laboratory	1
PSYC 490	Psychology Capstone	3
PSYC 103	Professional Development in Psychology	1
PSYC 226	Statistical Analysis for the Social Sciences	3
PSYC 320	Aviation Psychology	3
PSYC 321	Psychology of Gaming	3
PSYC 345	Training and Development	3
PSYC 410	Personnel Selection and Assessment	3
PSYC 445	Tests and Measurements Theory	3

UNIV 101	College Success	1
Computer Science Elective (CPSC, DSCI, SIMS)		6
Total Credits		60

Specified Electives

Select Three of the Following:	9
Any Upper-Level PSYC or HFCT Courses	
Any Lower or Upper-Level AVSF Courses	
Total Credits	9

Open Electives

Open Electives	15
Total Credits	15

Suggested Plan of Study

Year One

Requirements	Credits
COMM 122 - English Composition	3
Computer Science/Information Technology	3
Mathematics	3
Open Elective	3
PSYC 101 - Introduction to Psychology or 222 - Introduction to Industrial/Organizational Psychology	3
UNIV 101 - College Success	1
Semester Hours	16

Requirements	Credits
Computer Science/Information Technology	3
Humanities - Lower Level	3
Mathematics	3
Physical/Life Sciences with Lab	3
PSYC 103 - Professional Development in Psychology	1
PSYC 320 - Aviation Psychology	3
Semester Hours	16

Total Credits

Total Hours for All Requirements: 32

Year Two

Requirements	Credits
Communication	3
Computer Science/Information Technology	3
HFCT 300 - Principles and Fundamentals	3
PSYC 310 - Sensation and Perception	3
Open Elective	3
Semester Hours	15

Requirements	Credits
Communication	3
HFCT 307 - Performance Processes or 302 - Analytic Methods and Techniques	3

HFCT 307L - Performance Processes Laboratory or 302L - Analytic Methods and Techniques Laboratory	1
Physical/Life Sciences	3
Open Elective	3
PSYC 226 - Statistical Analysis for the Social Sciences	3
Semester Hours	16

Total Credits

Total Hours for All Requirements: 31

Year Three

Requirements	Credits
HFCT 312 - Ergonomics and Bioengineering or 310 - Human-Computer Interaction	3
PSYC 323 - Research Design	3
PSYC 323L - Research Methods Laboratory	1
PSYC 345 - Training and Development	3
Humanities/Social Sciences - Lower or Upper Level	3
Open Elective	3
Semester Hours	16

Requirements	Credits
HFCT 307 - Performance Processes or 302 - Analytic Methods and Techniques	3
HFCT 307L - Performance Processes Laboratory or 302L - Analytic Methods and Techniques Laboratory	1
Open Elective	3
PSYC 321 - Psychology of Gaming	3
Specified Electives	3
Semester Hours	13

Total Credits

Total Hours for All Requirements: 29

Year Four

Requirements	Credits
HFCT 312 - Ergonomics and Bioengineering or 310 - Human-Computer Interaction	3
PSYC 315 - Cognitive Psychology	3
PSYC 445 - Tests and Measurements Theory	3
PSYC 490 - Psychology Capstone	3
Specified Electives	3
Semester Hours	15

Requirements	Credits
HFCT 400 - System Design	4
Humanities/Social Sciences - Upper Level	3
PSYC 410 - Personnel Selection and Assessment	3

Specified Elective	3
Semester Hours	13

Total Credits

Total Hours for All Requirements: 28

Worldwide Program Requirements

General Education Requirements	36
Core Requirements	27
Area of Concentration	36
Specified Electives	18
Open Elective	3
Total Credits	120

Program Details

The Bachelor of Science in Human Factors Psychology requires successful completion of a minimum of 120 credit hours. Students enrolled in the Worldwide Undergraduate Online program may complete the degree in 20 terms, or approximately four years, assuming full-time enrollment and continuous progress. Students pursuing this undergraduate degree must earn a minimum cumulative grade point average (CGPA) of 2.00 for all work completed at the University. The courses required to earn this degree are listed below.

Students should be aware that many courses have prerequisites and/or corequisites. Students are responsible for ensuring that all prerequisite and degree requirements are satisfied prior to enrollment in advanced coursework. The suggested plan of study is provided as a guide. A student's actual plan of study may vary based on term of admission, course availability, transfer credit, and other academic considerations. Students should consult with their academic advisor to develop an individualized plan of study.

Students must complete two program specializations from the available options in Psychological Foundations of Human Factors, Safety, and Organizational Behavior and Leadership. In addition, students must complete a culminating experience through Applied Research, the Human Factors Capstone, or Co-Operative Education. Students should work with their academic advisor to select specializations and a culminating experience that align with their academic interests and career goals while satisfying degree requirements.

General Education Requirements

Communication	9
COMM 122 English Composition	
Humanities - Lower Level	3
Social Sciences - Lower Level	3
Humanities/Social Sciences - Lower or Upper Level	3
Humanities/Social Sciences - Upper Level	3
Computer Science/Information Technology	3
Mathematics	6
Any Mathematics 6-Hour Sequence Above MATH 106	
Physical/Life Sciences	6
Total Credits	36

Core Requirements

HFCT 300	Human Factors Principles and Fundamentals	3
HFCT 302	Human Factors Methods and Techniques	3
HFCT 307	Human Factors Performance Processes	3
PSYC 310	Sensation and Perception	3
PSYC 315	Cognitive Psychology	3
PSYC 101	Introduction to Psychology	3
RSCH 202	Introduction to Research Methods	3
STAT 211	Statistics with Aviation Applications	3

HFCT 401	Applied Research	3
or HFCT 491	Human Factors Capstone	
or COIN 496	Co-Operative Education	
Total Credits		27

Area of Concentration

Psychological Foundations of Human Factors

Choose Six of the Following:		18
PSYC 320	Aviation Psychology	
PSYC 326	Group and Team Behavior	
PSYC 340	Industrial-Organizational Psychology	
PSYC 350	Social Psychology	
PSYC 355	The Psychology of Creativity and Innovation	
PSYC 360	Cultural Psychology	
PSYC 400	Introduction to Cognitive Science	
PSYC 440	The Psychology of Resilience	
Total Credits		18

Safety

Choose Six of the Following:		18
SFTY 201	Introduction to Occupational Safety and Health	
SFTY 205	Principles of Accident Investigation	
SFTY 311	Occupational Safety and Health	
AVSF 320	Human Factors in Aviation Safety	
SFTY 321	Occupational Ergonomics I	
SFTY 326	System Safety	
SFTY 341	Occupational Safety and Health Program Management	
SFTY 415	Human Reliability and Safety Analysis	
SFTY 421	Occupational Ergonomics II	
Total Credits		18

Organizational Behavior and Leadership

MGMT 275	Critical Thinking for Leadership	3
Choose Five of the Following:		15
MGMT 301	Emotional, Social, and Cognitive Intelligence	
MGMT 304	Coaching and Mentoring	
MGMT 310	Mediation, Negotiation, and Conflict Resolution	
MGMT 315	Contemporary Leadership Theories	
MGMT 317	Organizational Behavior	
MGMT 407	Driving Change in Organizations	
MGMT 427	Management of the Multicultural Workforce	
Total Credits		18

Specified Electives

HFCT 310	Human-Computer Interaction	3
HFCT 315	Automation and Systems Issues in Aviation	3
HFCT 320	User Experience/User Interface	3
HUMN 250	Generative Artificial Intelligence in Real-World Contexts	3
HUMN 330	Values and Ethics	3
or RSCH 350	Research Ethics	
MGMT 201	Principles of Management	3
Total Credits		18

Open Elective

Open Elective	3
Total Credits	3

Suggested Plan of Study

Year One

Requirements	Credits
Communication above COMM 106	3
College Algebra or Higher Math Series	3
Semester Hours	6

Requirements	Credits
Communication above COMM 106	3
College Algebra or Higher Math Series	3
Semester Hours	6

Requirements	Credits
STAT 211 - Statistics with Aviation Applications	3
Communication above COMM 106	3
Semester Hours	6

Requirements	Credits
PSYC 101 - Introduction to Psychology	3
Physical/Life Sciences	3
Semester Hours	6

Requirements	Credits
Humanities - Lower Level	3
MGMT 201 - Principles of Management	3
Semester Hours	6

Total Credits

Total Hours for All Requirements: 30

Year Two

Requirements	Credits
Social Sciences - Lower Level	3
HFCT 300 - Principles and Fundamentals	3
Semester Hours	6

Requirements	Credits
RSCH 202 - Introduction to Research Methods	3
Physical/Life Sciences	3
Semester Hours	6

Requirements	Credits
HFCT 302 - Analytic Methods and Techniques	3
Humanities/Social Sciences - Lower or Upper Level	3
Semester Hours	6

Requirements	Credits
HUMN 250 - Generative Artificial Intelligence in Real-World Contexts	3

Area of Concentration	3
Semester Hours	6
Requirements	Credits
Computer Science	3
Humanities/Social Sciences - Upper Level	3
Semester Hours	6

Total Credits

Total Hours for All Requirements: 30

Year Three

Requirements	Credits
HUMN 330 - Values and Ethics or RSCH 350 - Research Ethics	3
Area of Concentration	3
Semester Hours	6

Requirements	Credits
Area of Concentration	3
Area of Concentration	3
Semester Hours	6

Requirements	Credits
Open Elective	3
Area of Concentration	3
Semester Hours	6

Requirements	Credits
HFCT 307 - Performance Processes	3
Area of Concentration	3
Semester Hours	6

Requirements	Credits
HFCT 310 - Human-Computer Interaction	3
Area of Concentration	3
Semester Hours	6

Total Credits

Total Hours for All Requirements: 30

Year Four

Requirements	Credits
PSYC 310 - Sensation and Perception or 315 - Cognitive Psychology	3
HFCT 315 - Automation and Systems Issues in Aviation	3
Semester Hours	6

Requirements	Credits
Area of Concentration	3
HFCT 320 - User Experience/User Interface	3
Semester Hours	6

Requirements	Credits
PSYC 315 - Cognitive Psychology or 310 - Sensation and Perception	3

Area of Concentration	3
Semester Hours	6

Requirements	Credits
Area of Concentration	3
Area of Concentration	3
Semester Hours	6

Requirements	Credits
HFCT 401 - Applied Research, 491 - Human Factors Capstone, or COIN 496 - Co-Operative Education	3
Area of Concentration	3
Semester Hours	6

Total Credits

Total Hours for All Requirements: 30

Estimated Cost of Attendance

Estimated Cost of Attendance: California Student Information (<https://catalog.erau.edu/student-life/student-affairs/california-student/>)