

Standing Requirements

Program Mission Statement

The mission of the Department of Human Factors and Systems is to promote human factors theory, method, and practice through a focus on research, teaching, and service at the bachelors, masters and doctoral degree levels. Research: The department holds in the highest regard engagement in human factors research activities that include publication and presentation of research at all levels. This objective utilizes student participation in conjunction with industry, government, and military partners with a focus on pro-active research and anticipating future needs. Teaching: The department seeks to expose students to the breadth of the human factors psychology discipline that prepares them for positions in industry, government, and academia. This focus includes educational activities that advance knowledge and skill development and that occur in traditional classroom settings as well as outside the classroom. Service: The department supports the pursuit of the University's stated missions and goals. We also offer our expertise to help solve the human factors related challenges that the university encounters.

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ERAU University Mission Statement

Our mission is to teach the science, practice and business of aviation and aerospace, preparing students for productive careers¹ and leadership roles in service around the world.²

Our technologically enriched, student-centered environment³ emphasizes learning through collaboration and teamwork,⁴ concern for ethical and responsible behavior,⁵ cultivation of analytical⁶ and management abilities,⁷ and a focus on the development of the professional skills needed for participation in a global community.⁸ We believe a vibrant future for aviation and aerospace rests in the success of our students. Toward this end, Embry-Riddle is committed to providing a climate that facilitates the highest standards of academic achievement⁹ and knowledge discovery,¹⁰ in an interpersonal environment that supports the unique needs of each individual.¹¹ Embry-Riddle Aeronautical University is the world's leader in aviation and aerospace education. The University is an independent, non-profit, culturally diverse institution providing quality education and research in aviation, aerospace, engineering and related fields leading to associate's, baccalaureate's, master's and doctoral degrees.

Program Alignment to University Mission

Select all that apply.

- ¹Preparing students for productive careers
- ³Technologically enriched environment
- ⁴Emphasize learning through collaboration and teamwork
- ⁵Concern for ethical and responsible behavior
- ⁶Cultivate analytical abilities
- ⁸Develop the professional skills needed for participation in a global community
- ⁹Facilitating the highest standards of academic achievement
- ¹⁰Facilitating knowledge discovery
- ¹¹Providing an interpersonal environment that supports the unique needs of each individual

Standing Requirements

Program Outcomes

BS Human Factors Psychology Outcome Set

Outcome

Outcome	Mapping
DB_BSHFP_PO_01 Biological Bases of Human Behavior. Students will be able to describe the basic characteristics, including operational capabilities and limitations, of human anatomy and physiology and of human sensation and perception with particular emphasis on vision, audition and vestibular systems.	No Mapping
DB_BSHFP_PO_02 Cognitive Processes of Performance. Students will be able to describe the basic characteristics, including operational capabilities and limitations, of human memory and cognition.	No Mapping
DB_BSHFP_PO_03 Ergonomics and Bioengineering. Students will be able to demonstrate an understanding of basic ergonomic and bioengineering factors and relate them to human-machine system design and performance.	No Mapping
DB_BSHFP_PO_04 Evaluate Research. Students will be able to demonstrate the ability to critically evaluate and apply scientific research.	No Mapping
DB_BSHFP_PO_05 Statistics. Students will be able to apply and interpret basic statistical analyses for the behavioral sciences.	No Mapping

<p>DB_BSHFP_PO_06 Experimental Design. Students will be able to demonstrate knowledge of and the ability to apply basic experimental designs for the behavioral sciences.</p>	<p>No Mapping</p>
<p>DB_BSHFP_PO_07 Human Centered Design Principles. Students will be able to describe and apply the basic concepts, principles, and goals of human factors psychology including the human, machine and environmental factors that may influence human-machine system performance in a variety of domains.</p>	<p>No Mapping</p>
<p>DB_BSHFP_PO_08 Human centered design methods. Students will be able to demonstrate knowledge of and the skill to apply basic human-machine system analysis and design methodologies to problems in a variety of domains.</p>	<p>No Mapping</p>
<p>DB_BSHFP_PO_09 Human Factors and Ergonomics (HF/E) Professional Skills. Students will be able to demonstrate the ability to function as part of a multi-student team and complete team HF/E projects. Students shall demonstrate effective oral and written communication skills in the context of HF/E projects.</p>	<p>No Mapping</p>

FL - Embry-Riddle General Education Competency Set (Copy 1)

General Education Competencies

Competency	Mapping
<p>Critical Thinking (DB, PC, WW) The student will apply knowledge at the synthesis level to define and solve problems within professional and personal environments.</p>	<p>Embry-Riddle General Education Competency Set: Critical Thinking (DB, PC, WW)</p>

Quantitative Reasoning (DB, PC, WW)
The student will demonstrate the use of digitally-enabled technology (including concepts, techniques and tools of computing), mathematics proficiency & analysis techniques to interpret data for the purpose of drawing valid conclusions and solving associated problems.

Embry-Riddle General Education Competency Set:
Quantitative Reasoning (DB, PC, WW)

Information Literacy (DB, PC, WW)
The student will conduct meaningful research, including gathering information from primary and secondary sources and incorporating and documenting source material in his or her writing.

Embry-Riddle General Education Competency Set:
Information Literacy (DB, PC, WW)

Communication (DB, PC, WW)
The student will communicate concepts in written, digital and oral forms to present technical and non-technical information.

Embry-Riddle General Education Competency Set:
Communication (DB, PC, WW)

Scientific Literacy (DB, PC, WW)
The student will be able to analyze scientific evidence as it relates to the physical world and its interrelationship with human values and interests.

Embry-Riddle General Education Competency Set:
Scientific Literacy (DB, PC, WW)

Cultural Literacy (DB, PC, WW)
The student will be able to analyze historical events, cultural artifacts, and philosophical concepts.

Embry-Riddle General Education Competency Set:
Cultural Literacy (DB, PC, WW)

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2017-2018 Assessment Cycle

Assessment Plan

Measures

BS Human Factors Psychology Outcome Set

Outcome

Outcome: DB_BSHFP_PO_02

Cognitive Processes of Performance. Students will be able to describe the basic characteristics, including operational capabilities and limitations, of human memory and cognition.

▼ Measure: HF300 Exam Items (non-culminating course)

Course level Direct - Exam

Details/Description:	Assessment of student knowledge of human memory and cognition via HF300 Exam items concerning cognitive characteristics.
Criterion for Success:	Mean score on these items will be 70% or better.
Timeframe of Data Collection:	Each semester the course is taught; each section of the course.
Key/Responsible Personnel:	Course instructors will provide exam questions and item analysis.

▼ Measure: PSY 315 End of course percentage

Course level Direct - Student Artifact

Details/Description:	As the entire PSY315 course is fundamental to outcome DB_BSHFP_PO_02, assessment of student knowledge of cognitive processes including memory and information processing will be captured using the PSY315 (Cognitive Psychology)
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Criterion for Success:	overall course grade. Mean percentage at the end of course will be 70% or higher.
Timeframe of Data Collection:	Data will be collected each semester the course is taught and every course section.
Key/Responsible Personnel:	Course instructors will provide exams and final course percentage grades and artifacts (exams).

▼ **Measure:** Student Reactions/Evaluations (PSY315)
Course level Indirect - Survey

Details/Description:	Average responses on student evaluations of their learning in the course. I feel knowledgeable about cognitive psychology principles OR I achieved the course learning outcomes.
Criterion for Success:	80% of the class should be satisfied with their level of mastery of course content.
Timeframe of Data Collection:	Each semester course is offered.
Key/Responsible Personnel:	Course instructor will provide student evaluation results.

Supporting Attachments:

[EOC Survey Question for DB_BS_HFP_PO_02 \(Adobe Acrobat Document\)](#)

Outcome: DB_BSHFP_PO_05

Statistics. Students will be able to apply and interpret basic statistical analyses for the behavioral sciences.

▼ **Measure:** PSY312 Research Analysis (Statistics) -- End of course percentage
Course level Direct - Other

Details/Description: As the entire PSY312 Research Analysis course is fundamental to outcome DB_BSHFP_PO_05 (Statistics), assessment of student knowledge of basic statistical analyses for the behavioral sciences will be captured using the PSY312 overall grade.

Criterion for Success: Mean percentage at the end of course should be 70% or higher.

Timeframe of Data Collection: Each semester the course is taught.

Key/Responsible Personnel: Course instructors will provide exam grades, final course percentages, and exam artifacts.

▼ **Measure:** PSY322 Project (Experiment)
Course level Direct - Student Artifact

Details/Description: Students engage in a group project in PSY322 that requires them to collect and analyze human performance data. The project scores provide data on student knowledge and skills of statistics for the behavioral sciences.

Criterion for Success: Mean scores on the projects will be 80% or higher.

Timeframe of Data Collection: Data will be collected each semester the course is taught; each course section.

Key/Responsible Personnel: Course instructor will provide project scores along with samples of scored materials.

▼ **Measure:** Student Rating of their knowledge of statistics and SPSS -- PSY322
Program level Indirect - Survey

Details/Description: The course instructor will ask the students to rate their knowledge of statistics.

I felt knowledgeable about basic statistical procedures when analyzing the data in my project. I felt comfortable about using basic statistical functions in SPSS.

(Likert scale 1 = strongly disagree; 7 = strongly agree)


Criterion for Success: 80% of the students will respond a 3 or higher.

Timeframe of Data Collection: Each semester course is offered.

Collection:

Key/Responsible Personnel: Course instructor will provide student evaluation results.

Supporting Attachments:

 EOC Survey Question for DB_BS_HFP_PO_05 (Adobe Acrobat Document)

Outcome: DB_BSHFP_PO_07

Human Centered Design Principles. Students will be able to describe and apply the basic concepts, principles, and goals of human factors psychology including the human, machine and environmental factors that may influence human-machine system performance in a variety of domains.

▼ Measure: HF306 Exams

Course level Direct - Exam

Details/Description: Assessment of student knowledge of human centered design principles, goals, and concepts will be demonstrated by mean score on the HF306 Exams.

Criterion for Success: Mean scores will be 70% or higher.

Timeframe of Data Collection: The exam scores will be collected each semester the course is taught; each section of the course.

Key/Responsible Personnel: Course instructor will provide exam grades and exam artifacts.

▼ **Measure:** HF310 HCI Project
Course level Direct - Student Artifact

Details/Description:	Assessment of student knowledge of human centered design principles will be demonstrated by mean score on the HF310 human computer interaction project.
Criterion for Success:	Mean project score will be 70% or higher.
Timeframe of Data Collection:	The project scores will be collected each semester the course is taught; each section of the course.
Key/Responsible Personnel:	Course instructor will provide project grades and examples of student projects.

▼ **Measure:** HF312 Ergonomics Evaluation and Design Project
Course level Direct - Student Artifact

Details/Description:	Assessment of student knowledge of human centered design principles will be demonstrated by mean score on the HF312 ergonomics evaluation and design project.
Criterion for Success:	Mean project score should be 70% or higher.
Timeframe of Data Collection:	The project scores will be collected each semester the course is taught; each section of the course.
Key/Responsible Personnel:	Course instructor will provide project grades.

▼ **Measure:** Student Rating of their knowledge of human centered design -- HF306
Course level Indirect - Survey

Details/Description:	The course instructor will ask the students to rate their knowledge of human centered design.
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- 1) I feel knowledgeable about basic principles of human performance.
- 2) I can apply basic principles of human performance to system design.


(Likert scale 1 = strongly disagree; 7 = strongly agree)

Criterion for Success: 80% of the students will respond a 3 or higher.

Timeframe of Data Collection: Each semester course is offered.

Key/Responsible Personnel: HF306 Course instructor will provide student evaluation results.

Supporting Attachments:

 Indirect Assessment Survey (Adobe Acrobat Document)

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