

B.S. in Aerospace Physiology

The Bachelor of Science in Aerospace Physiology opens the door to careers in the aerospace industry, as well as in healthcare and research fields. This STEM-based course covers anatomy and physiology, molecular and cellular biology, neurophysiology, genetics, microbiology, chemistry, physics, computer programming, and advanced mathematics and statistics.

Combined with clinical rotations, research experience, and experiential learning, students will gain diverse exposure to a variety of career options and internship opportunities during their studies. Upon program completion, graduates will be prepared for entry into industry positions in aerospace medicine, healthcare, and research, as well as graduate studies in related disciplines.

Admission Requirements

To enter this program, students must have completed four years of high school science and mathematics, demonstrating a high level of competency.

Degree Requirements

The Aerospace Physiology program comprises of 120-121 credits, detailed on the Program Requirements tab.

Students will:

- Employ critical thinking skills and scientific best practices in research design and experimentation.
- Apply principles of biological sciences to aerospace physiology.
- Correlate fundamental scientific instrumentation with aerospace physiology.
- Complete projects arising from sound research practices.
- Analyze current research in aerospace physiology related to treatment interventions.

General Education Requirements

For a full description of Embry-Riddle General Education guidelines, please see the General Education section of this catalog. These minimum requirements are applicable to all degree programs

General Education List

Communication Theory and Skills (COM 122, COM 219, COM 221)	9
Humanities - Lower level	3
Social Sciences - Lower level	3
Humanities or Social Sciences - Lower or Upper level *	3
Humanities or Social Sciences - Upper level	3
Computer Science (CS 118 or CS 223 or EGR 115 or CYB 235)	3
Mathematics (MA 210 required)	6
Physical and Life Sciences (BIO 120, CHM 110 or PS 113)	6
Total Credits	36

Aerospace Physiology Core Requirements (63 hours)

BIO 110	Research Methods I	1
BIO 111	Research Symposium	1
BIO 120	Foundations of Biology I	3
BIO 120L	Foundations of Biology I Laboratory	1
BIO 121	Foundations of Biology II	3
BIO 121L	Foundations of Biology II Lab	1

BIO 215	Genetics	3
BIO 215L	Genetics Laboratory	1
BIO 305	Human Anatomy and Physiology I	3
BIO 305L	Human Anatomy & Physiology Laboratory	1
BIO 306	Human Anatomy and Physiology II	3
BIO 306L	Human Anatomy and Physiology II Laboratory	1
BIO 405	Molecular and Cell Biology	3
BIO 405L	Molecular and Cell Biology Laboratory	1
BIO 450	Exercise Physiology and Human Performance	3
CHM 110	General Chemistry I	3
CHM 110L	General Chemistry I Laboratory	1
CHM 111	General Chemistry II	3
CHM 111L	General Chemistry II Laboratory	1
CHM 210	Organic Chemistry I	3
CHM 210L	Organic Chemistry I Laboratory	1
CHM 211	Organic Chemistry II	3
or CHM 310	Biochemistry	
CHM 211L	Organic Chemistry II Laboratory	1
or CHM 310L	Biochemistry Laboratory	
HF 300	Human Factors I: Principles and Fundamentals	3
HF 440	Aerospace Physiology	3
or AS 357	Flight Physiology	
MA 222	Business Statistics	3
PS 113	Introductory Physics I	3
PS 113L	Introductory Physics I Laboratory	1
PS 117	Introductory Physics II	3
PS 117L	Introductory Physics II Lab	1
UNIV 101	College Success	1
Total Credits		63

Specified Electives (12-13 hours)

BIO 211	Research	1
BIO 216	Microbiology	3
BIO 216L	Microbiology Laboratory	1
BIO 299	Special Topics in Biology	1-6
BIO 311	Research	1
BIO 321	Behavioral Neuroscience I	3
BIO 322	Behavioral Neuroscience II	3
BIO 335	Cell Signaling and Disease	3
BIO 399	Special Topics in Biology	1-6
BIO 411	Research Symposium II	1
BIO 440	Clinical Rotation	3
BIO 444	Immunology	3
BIO 499	Special Topics in Biology	1-6
CHM 211	Organic Chemistry II	3
CHM 211L	Organic Chemistry II Laboratory	1
CHM 310	Biochemistry	3
CHM 310L	Biochemistry Laboratory	1
ES 315	Space Environment and Effects	3
HF 312	Ergonomics and Bioengineering	3
HF 321	Psychopharmacology	3
HF 326	Human Performance in Extreme Environments	3
HF 399	Special Topics in Human Factors	1-6
HF 499	Special Topics in Human Factors	1-6
ME 320	Fundamentals of Biomechanics	3
ME 442	Biofluid Mechanics	3
PSY 101	Introduction to Psychology *	3
PSY 310	Sensation and Perception	3

2 B.S. in Aerospace Physiology

PSY 320	Aviation Psychology	3
PSY 335	Physiological Psychology	3
SF 315	Environmental Compliance and Safety	3
SF 355	Industrial Hygiene and Toxicology	3
SP 220	Life Support Systems	3
Total		12-13

Open Electives

Open Electives - 100-400 Level	6
Open Electives - 300-400 Level	9
Total Credits	15

Total Degree Credits 120-121

* PSY 101 must be taken as a Specified Elective if not completed as a lower-level General Education Social Science requirement.

Students should be aware that several courses in each academic year may have prerequisites and/or co-requisites. Please check the course descriptions in this catalog before registering for classes to ensure requisite sequencing.

Suggested Plan of Study

Year One

Fall		Credits
COM 122	English Composition	3
UNIV 101	College Success	1
MA 140	College Algebra ¹	3
CHM 110	General Chemistry I	3
CHM 110L	General Chemistry I Laboratory	1
BIO 120	Foundations of Biology I	3
BIO 120L	Foundations of Biology I Laboratory	1
BIO 110	Research Methods I	1
	Credits Subtotal	16.0

Spring		Credits
	HU 14X Elective	3
PSY 101	Introduction to Psychology	3
CHM 111	General Chemistry II	3
CHM 111L	General Chemistry II Laboratory	1
BIO 121	Foundations of Biology II	3
BIO 121L	Foundations of Biology II Lab	1
BIO 111	Research Symposium	1
	Credits Subtotal	15.0
	Credits Total:	31.0

Year Two

Fall		Credits
COM 219	Speech	3
CHM 210	Organic Chemistry I	3
CHM 210L	Organic Chemistry I Laboratory	1
BIO 215	Genetics	3
BIO 215L	Genetics Laboratory	1
BIO 305	Human Anatomy and Physiology I	3
BIO 305L	Human Anatomy & Physiology Laboratory	1
	Credits Subtotal	15.0

Spring		Credits
COM 221	Technical Report Writing	3
MA 210	Introduction to Data Science	3
	Specified Elective	3
	Open Elective - Lower Level	3

BIO 306	Human Anatomy and Physiology II	3
BIO 306L	Human Anatomy and Physiology II Laboratory	1
	Credits Subtotal	16.0
	Credits Total:	31.0

Year Three

Fall		Credits
CS 118	Fundamentals of Computer Programming	3
or CS 223	Scientific Programming in C	
or EGR 115	Introduction to Computing for Engineers	
or CYB 235	Computer and Network Technologies	
PS 113	Introductory Physics I	3
PS 113L	Introductory Physics I Laboratory	1
CHM 310	Biochemistry ²	3
CHM 310L	Biochemistry Laboratory ²	1
	Specified Elective	3-4
	Credits Subtotal	14.0-15.0

Spring

HF 300	Human Factors I: Principles and Fundamentals	3
MA 222	Business Statistics	3
PS 117	Introductory Physics II	3
PS 117L	Introductory Physics II Lab	1
	Specified Elective	3
	Open Elective - Upper Level	3
	Credits Subtotal	16.0
	Credits Total:	30.0-31.0

Year Four

Fall		Credits
BIO 405	Molecular and Cell Biology	3
BIO 405L	Molecular and Cell Biology Laboratory	1
BIO 450	Exercise Physiology and Human Performance	3
	Humanities/Social Science - Lower Level	3
	Specified Elective	3
	Credits Subtotal	13.0

Spring

HF 440	Aerospace Physiology	3
or AS 357	Flight Physiology	
	Humanities/Social Science - Upper Level	3
	Open Elective - Lower Level	3
	Open Elective - Upper Level	3
	Open Elective - Upper Level	3
	Credits Subtotal	15.0
	Credits Total:	28.0

¹ MA 111, 120 or 140

² CHM 211 and CHM 211L OR CHM 310 and 310L required