

B.S. in Simulation Science, Games, and Animation

Degree Requirements

The Bachelor of Science degree can be earned in eight semesters assuming appropriate background and full-time enrollment. Successful completion of a minimum of 127 credit hours is required. Students entering this program should have demonstrated a competence in mathematics and science (preferably physics). They should be prepared to enter Calculus I, having demonstrated proficiency in algebra and trigonometry. The Simulation, Games and Animation program is designed to prepare students to work as part of a team on the development of simulation systems and games. Relevant concepts, methods, and techniques are integrated through the curriculum. The curriculum includes courses in general education, media arts, computer programming, mathematics, and software design.

Students should be aware that several courses in each academic year may have prerequisites and/or co-requisites.

Program Requirements

General Education

Embry-Riddle degree programs require students to complete a minimum of 36 hours of General Education coursework. For a full description of Embry-Riddle General Education guidelines, please see the General Education section of this catalog.

Students may choose other classes outside of their requirements, but doing so can result in the student having to complete *more* than the degree's 127 credit hours. This will result in additional **time and cost** to the student.

Communication Theory and Skills	9
Computer Science/Information Technology	3
Mathematics	6
Physical and Life Sciences (Natural Sciences)	6
Humanities and Social Sciences	12
3 hours of Lower-Level Humanities	
3 hours of Lower-Level Social Science	
3 hours of Lower-Level or Upper-Level Humanities or Social Science	
3 hours of Upper-Level Humanities or Social Science	
Total Credits	36

Simulation Science, Games, and Animation Core (124 Credits)

The following course of study outlines the quickest and most cost-efficient route for students to earn their B.S. in Simulation Science, Games, and Animation. Students are encouraged to follow the course of study to ensure they complete all program required courses and their prerequisites within four years.

Courses in the core with a # will satisfy your general education requirements.

COM 122	English Composition #	3
CS 118	Fundamentals of Computer Programming #	3
CS 125	Computer Science I	4
CS 225	Computer Science II *	4
CS 315	Data Structures and Analysis of Algorithms *	3

CS 455	Artificial Intelligence	3
DS 411	Data Visualization	3
General Education - Communications Elective #		6
General Education - Humanities Lower-Level Elective #		3
General Education - Humanities or Social Science Upper-Level Elective #		3
General Education - Natural Science Elective with Lab #		4
MA 225	Introduction to Discrete Structures #	3
MA 241	Calculus and Analytical Geometry I #	4
MA 314	Applied Linear Algebra & Statistics	3
PS 113	Introductory Physics I #	3
or PS 215	Physics I	
PSY 101	Introduction to Psychology (OR Social Science Lower-Level Elective) #	3
PSY 321	Psychology of Gaming (OR Humanities or Social Science Upper-Level Elective) #	3
SIM 115	Digital Illustration	3
SIM 150	Games Systems I Introduction	3
SIM 201	World Building I, Modeling	3
SIM 202	World Building II Materials	3
SIM 203	World Building III Mechanics	3
SIM 205	Game Design Workshop	3
SIM 215	Interactive Media I	3
SIM 251	Game Systems II Multi-player	3
SIM 304	World Building IV Motion	3
SIM 315	Interactive Media II	3
SIM 321	Simulation I Systems Modeling	3
SIM 331	Simulation II Procedural Modeling	3
SIM 335	Game Engine Architecture	3
SIM 350	Visualization and Virtual Reality Games III	3
SIM 401	Character Design & Production	3
SIM 403	Set & Environment Design	3
SIM 415	User Interface Design	3
SIM 421	Modeling & Simulation II	3
SIM 450	Game Systems 4: Mixed Reality	3
SIM 482	Capstone I and Lab	4
SIM 483	Capstone II and Lab	4
UNIV 101	College Success	1

Technical Elective 3 Credits

Choose One of the Following:

CS 213	Introduction to Computer Networks	3
CS 305	Database Systems and Data Mining	3
CS 317	Files and Database Systems	3
CS 415	Human-Computer Interfaces	3
SE 310	Analysis and Design of Software Systems	3
SE 420	Software Quality Assurance	3

Total Credits 127

* Offered in Fall Only

** Offered in Spring Only

General Education Courses

All Army ROTC students are required to complete SS 321 - U.S. Military History 1900-Present (3 credits) in order to commission.