B.S. in Software Engineering

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 126 credit hours is required.

Students should be aware that several courses in each academic year may have prerequisites and/or corequisites. Check the course description section of this catalog before registering for classes to ensure requisite sequencing. The B.S. degree requires that students have a minimum cumulative grade point average of 2.00 in all CEC, EE, SE, CS, and EGR courses that fulfill any degree requirement.

The Software Engineering degree includes a Space Option in which, AE 427 and AE 445 will be taken instead of SE 450 and SE 451, and EP 394 is taken as one of the technical electives.

Software engineering majors are required to have a grade of C or better in all prerequisite courses for courses with the CS, CEC, EE, EGR, ES, or SE prefixes.

Cyber-Security Focus

The degree features an optional focus on cyber-security. Students who select this focus will be prepared to support government and industry's need for people skilled in software development as well as in cyber-security.

For the cyber-security focus, the technical elective is replaced with CS 304 Introduction to Computer Forensics (3) and the two open electives are replaced with CI 450 Computer Forensics (3) and CS 303 Network Security (3).

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 126 credit hours. This will result in additional *time and cost* to the student.

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

Software Engineering Core (117 Credits)

The following course of study outlines the quickest and most cost-efficient route for students to earn their B.S. in Software Engineering. 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.

CEC 222 Digital Circuit Design Laboratory 1 CEC 320 Microprocessor Systems 3 CEC 322 Microprocessor Systems Laboratory 1 CEC 450 Real-Time Embedded Systems 3 CEC 470 Computer Architecture 3 CEC 470 Computer Architecture 3 COM 122 English Composition # 3 COM 219 Speech # 3 COM 221 Technical Report Writing (Must earn a C or better to pass COM 221) CS 118 Fundamentals of Computer Programming # 3 or EGR 115 Introduction to Computing for Engineers CS 125 Computer Science I 4 CS 315 Data Structures and Analysis of Algorithms 3 CS 317 Files and Database Systems 3 CS 332 Organization of Programming Languages 3 CS 415 Human-Computer Interfaces 3 CS 420 Operating Systems 3 CS 425 Net-Centric Computing 3 CS 425 Net-Centric Computing 3 CS 425 Engineering Economics # 3 EGR 101 Introduction to Engineering 2 General Education - lower-level or upper-level Humanities or Social Science # 3 General Education - lower-level Humanities 3 HU 330 Values and Ethics # 3 or HU 335 Technology and Modern Civilization 4 MA 242 Calculus and Analytical Geometry I # 4 MA 243 Calculus and Analytical Geometry II # 4 MA 244 Calculus and Analytical Geometry II # 4 MA 245 Calculus and Analytical Geometry II # 4 MA 246 Calculus and Analytical Geometry II # 4 MA 247 Calculus and Analytical Geometry II # 4 MA 248 Calculus and Analytical Geometry II # 4 MA 249 Calculus and Analytical Geometry II # 4 MA 240 Calculus and Analytical Geometry II # 4 MA 241 Calculus and Analytical Geometry II # 4 MA 242 Calculus and Analytical Geometry II # 4 MA 243 Calculus and Analytical Geometry II # 4 MA 244 Calculus and Analytical Geometry II # 4 MA 245 Calculus and Analytical Geometry II # 4 MA 246 Calculus and Analytical Geometry II # 4 MA 247 Calculus and Analytical Geometry II # 4 MA 248 Calculus and Analytical Geometry II # 4 MA 249 Calculus and Analytical Geometry II # 4 MA 240 Calculus and Analytical Geometry II # 4 MA 241 Calculus and Analytical Geometry II # 4 MA 242 Calculus and Analytical Geometry II # 4 MA 243 Calculus and Analytical Geometry II # 4 MA	CEC 220	Digital Circuit Design	3
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Total Credits 117	SE 451	**	3
	Total Credits		117

Technical Elective (3 Credits)

Technical Electives

Technical electives include EGR 200, EGR 201, SIS 365, and
any AE, CEC, CEXX (Coop/Internship), CS, EE, EP, ES, MA, ME,
PS, SE, or SYS course 300 level or above. Other courses may be
approved by the CESE Department Chair.

ROTC Exceptions must be approved by the CESE Department Chair.

Open Electives (6 Credits)

Open Electives	6
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Total Credits 126

- * Offered in Fall Only ** Offered in Spring Only
- # General Education Course

UNIV 101 is taken in excess of degree requirements or meets open elective credit.

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