

B.S. in Aviation Maintenance (Part 65)

The Bachelor of Science in Aviation Maintenance is designed for students seeking to begin a career in aircraft maintenance. The program includes coursework in aviation mechanics, including electrical systems, airframe applications and the influence of organizational behavior, social responsibility and ethics. The curriculum reflects workforce demand for maintenance technicians in the aviation industry.

At the **Worldwide & Online Campus**, the Aviation Maintenance degree offers three specialization options designed to provide skills and knowledge applicable to different areas of the aviation industry. These options include study in management practices related to operational efficiency, as well as safety measures related to compliance and risk mitigation.

Specializations include Engineering, Management, and Safety. Engineering focuses on the technical skills required for aircraft maintenance. Management emphasizes practical applications of logistics, procurement, production, life cycle analysis, and project management. Safety covers the theories and concepts of human factors, mechanical and structural factors, system safety, and maintenance-related safety practices.

Program-Level Student Learning Outcomes

Students will:

- Apply the fundamentals of aviation maintenance, commonly accepted practices, and global regulations in the aviation maintenance industry.
- Apply maintenance operations management functions for all types of aerial vehicles.
- Explain the application of basic concepts of ground and flight safety in the aviation maintenance industry.
- Communicate technical and non-technical information and concepts in written, digital, and oral forms.
- Solve problems within professional and personal environments.
- Analyze historical events, cultural artifacts, and philosophical concepts.
- Conduct research using appropriately cited primary and secondary sources.
- Examine skills that promote professional and personal lifelong learning.
- Use digitally-enabled technology and analysis techniques to interpret data for the purpose of drawing valid conclusions and solving associated problems.
- Analyze scientific evidence related to the physical world and its interrelationship with human values and interests.

Worldwide Program Requirements

General Education Requirements	36-37
Core Requirements	51
Specialization	33
Total Credits	120-121

120 total credits for Management and Safety Specializations.
121 total credits for Engineering Specialization.

Program Details

The Bachelor of Science in Aviation Maintenance requires successful completion of a minimum of 120 credit hours for the Management and Safety specializations or 121 credit hours for the Engineering specialization. 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 one of three specializations: Engineering, Management, or Safety. Each specialization includes a distinct curriculum and suggested plan of study designed to prepare graduates for careers in their selected area of emphasis. Students pursuing the Engineering specialization should note that specific mathematics, physics, and communication courses are required as part of the curriculum and that the specialization requires a minimum of 121 credit hours for degree completion.

General Education Requirements

Communication	9
Any Communication above COMM 106 *	
Humanities - Lower or Upper Level	3
Social Sciences - Lower or Upper Level	6
Humanities/Social Sciences - Upper Level	3
Computer Science/Information Technology	3
Mathematics	6-7
Any College Algebra or Higher Math Series **	
Physical/Life Sciences ***	6
Total Credits	36-37

* Students pursuing the Engineering Specialization must take COMM 221 Technical Communication

** Students pursuing the Engineering Specialization must take MATH 142 Trigonometry and MATH 241 Calculus and Analytical Geometry I for a total of 7 credits

***Students pursuing the Engineering Specialization must take PHYS 150 Physics with Calculus I and PHYS 160 Physics with Calculus II

Core Requirements

Aviation Maintenance

AMNT 240	General Aeronautics and Applications	3
AMNT 260	Aircraft Electrical Systems Theory	3
AMNT 270	Airframe Structures and Applications	3
AMNT 271	Airframe Systems and Applications	3
AMNT 280	Reciprocating Engine Theory and Applications	3
AMNT 281	Turbine Engine Theory and Applications	3
Total Credits		18

Program Core

AMNT 265	Aeronautical Electronics for Aviation Maintenance Technicians	3
AMNT 272	Fundamentals of Aircraft Avionics	3
AMNT 290	Introduction to Aerospace Composites	3
AMNT 416	Aviation Maintenance Management: A Global Perspective	3
AMNT 424	Maintenance Repair and Overhaul in Aviation	3
AMNT 429	Advanced Technologies in Design and Production of Aircraft Structures and Systems	3

AMNT 491	Operational Applications in Aviation Maintenance	3
ASCI 202	Introduction to Aeronautical Science	3
ASCI 404	Applications in Aviation and Aerospace Law	3
MGMT 201	Principles of Management	3
STAT 211	Statistics with Aviation Applications	3
Total Credits		33

Specializations

Engineering

CESC 220	Digital Circuit Design	3
CESC 220L	Digital Circuit Design Laboratory	1
CHEM 110	General Chemistry I	3
ENGR 101W	Introduction to Engineering	3
ENGR 115	Introduction to Computing for Engineers	3
ESCI 201	Statics	3
ESCI 202	Solid Mechanics	3
ESCI 204	Dynamics	3
ETEC 310	Material Science for Engineering Technology	3
ETEC 315	Circuits for Engineering Technology	3
ETEC 315L	Circuits Laboratory for Engineering Technology	1
MATH 242	Calculus and Analytical Geometry II	4
Total Credits		33

Management

AMNT 322	Aircraft Inspection and Scheduled Maintenance Programs	3
MGMT 324	Aviation Labor Relations	3
MGMT 326	Concepts and Practices of Project Management	3
SCLM 411	Logistics Management for Aviation/Aerospace	3
UNSY 322	Operational and Business Aspects of Uncrewed Aircraft Systems	3
Management - Upper Level (MGMT)		3
Electives ^		15
Total Credits		33

^ Choose other electives from the following subject areas: Aviation Maintenance, Aeronautical Science, Management, Leadership, Safety, Computer Science, and Engineering Technology. Effective January 1, 2025, at least 3 credit hours must be Upper Level.

Safety

AVSF 320	Human Factors in Aviation Safety	3
AVSF 335	Mechanical and Structural Factors in Aviation Safety	3
AVSF 409	Aviation Safety	3
SFTY 341	Occupational Safety and Health Program Management	3
SFTY 426	System Safety Management	3
Safety - Upper Level (SFTY)		3
Electives ^^		15
Total Credits		33

^^Choose other electives from the following subject areas: Aviation Maintenance, Aeronautical Science, Management, Leadership, Safety, Computer Science, and Engineering Technology. Effective January 1, 2025, at least 3 credit hours must be Upper Level.

Suggested Plan of Study

Engineering Specialization

Year One

Requirements	Credits
Communication above COMM 106	3
MATH 142 - Trigonometry	3
Semester Hours	6

Requirements	Credits
MATH 241 - Calculus and Analytical Geometry I	4
Any Communications above COMM 106	3
Semester Hours	7

Requirements	Credits
Humanities - Lower or Upper Level	3
PHYS 150 - Physics with Calculus I	3
Semester Hours	6

Requirements	Credits
Social Sciences - Lower or Upper Level	3
Computer Science/Information Technology	3
Semester Hours	6

Requirements	Credits
COMM 221 - Technical Communication	3
ASCI 202 - Introduction to Aeronautical Science	3
Semester Hours	6

Total Credits

Total Hours for All Requirements: 31

Year Two

Requirements	Credits
AMNT 265 - Aeronautical Electronics for Aviation Maintenance Technicians	3
Social Sciences - Lower or Upper Level	3
Semester Hours	6

Requirements	Credits
AMNT 240 - General Aeronautics and Applications	3
AMNT 260 - Aircraft Electrical Systems Theory	3
Semester Hours	6

Requirements	Credits
AMNT 270 - Airframe Structures and Applications	3
AMNT 271 - Airframe Systems and Applications	3
Semester Hours	6

Requirements	Credits
AMNT 280 - Reciprocating Engine Theory and Applications	3
AMNT 281 - Turbine Engine Theory and Applications	3
Semester Hours	6

Requirements	Credits
MATH 242 - Calculus and Analytical Geometry II	4
MGMT 201 - Principles of Management	3
Semester Hours	7

Total Credits

Total Hours for All Requirements: 31

Year Three

Requirements	Credits
STAT 211 - Statistics with Aviation Applications	3
ASCI 404 - Applications in Aviation and Aerospace Law	3
Semester Hours	6

Requirements	Credits
AMNT 272 - Fundamentals of Aircraft Avionics	3
Humanities/Social Sciences - Upper Level	3
Semester Hours	6

Requirements	Credits
AMNT 290 - Introduction to Aerospace Composites	3
AMNT 429 - Advanced Technologies in Design and Production of Aircraft Structures and Systems	3
Semester Hours	6

Requirements	Credits
AMNT 424 - Maintenance Repair and Overhaul in Aviation	3
AMNT 416 - Aviation Maintenance Management: A Global Perspective	3
Semester Hours	6

Requirements	Credits
PHYS 160 - Physics with Calculus II	3
ENGR 101W - Introduction to Engineering	3
Semester Hours	6

Total Credits

Total Hours for All Requirements: 30

Year Four

Requirements	Credits
AMNT 491 - Operational Applications in Aviation Maintenance	3

CHEM 110 - General Chemistry I	3
Semester Hours	6

Requirements	Credits
ENGR 115 - Introduction to Computing for Engineers	3
CESC 220 - Digital Circuit Design	3
CESC 220L - Digital Circuit Design Laboratory	1
Semester Hours	7

Requirements	Credits
ESCI 201 - Statics	3
ETEC 315 - Circuits for Engineering Technology	3
ETEC 315L - Circuits Laboratory for Engineering Technology	1
Semester Hours	7

Requirements	Credits
ESCI 202 - Solid Mechanics	3
ESCI 204 - Dynamics	3
Semester Hours	6

Requirements	Credits
ETEC 310 - Material Science for Engineering Technology	3
Semester Hours	3

Total Credits

Total Hours for All Requirements: 29

Management Specialization

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
Humanities - Lower or Upper Level	3
Physical Science/Physics	3
Semester Hours	6

Requirements	Credits
Social Sciences - Lower or Upper Level	3
Computer Science/Information Technology	3
Semester Hours	6

Requirements	Credits
Communication above COMM 106	3
ASCI 202 - Introduction to Aeronautical Science	3
Semester Hours	6

Total Credits

Total Hours for All Requirements: 30

Year Two

Requirements	Credits
AMNT 265 - Aeronautical Electronics for Aviation Maintenance Technicians	3
Social Sciences - Lower or Upper Level	3
Semester Hours	6

Requirements	Credits
AMNT 240 - General Aeronautics and Applications	3
AMNT 260 - Aircraft Electrical Systems Theory	3
Semester Hours	6

Requirements	Credits
AMNT 270 - Airframe Structures and Applications	3
AMNT 271 - Airframe Systems and Applications	3
Semester Hours	6

Requirements	Credits
AMNT 280 - Reciprocating Engine Theory and Applications	3
AMNT 281 - Turbine Engine Theory and Applications	3
Semester Hours	6

Requirements	Credits
Physical Science/Physics	3
MGMT 201 - Principles of Management	3
Semester Hours	6

Total Credits

Total Hours for All Requirements: 30

Year Three

Requirements	Credits
STAT 211 - Statistics with Aviation Applications	3
ASCI 404 - Applications in Aviation and Aerospace Law	3
Semester Hours	6

Requirements	Credits
AMNT 272 - Fundamentals of Aircraft Avionics	3
Humanities/Social Sciences - Upper Level	3
Semester Hours	6

Requirements	Credits
AMNT 290 - Introduction to Aerospace Composites	3
AMNT 429 - Advanced Technologies in Design and Production of Aircraft Structures and Systems	3
Semester Hours	6

Requirements	Credits
AMNT 424 - Maintenance Repair and Overhaul in Aviation	3
AMNT 416 - Aviation Maintenance Management: A Global Perspective	3
Semester Hours	6

Requirements	Credits
Aviation Maintenance Elective	3
Aviation Maintenance Elective	3
Semester Hours	6

Total Credits

Total Hours for All Requirements: 30

Year Four

Requirements	Credits
AMNT 491 - Operational Applications in Aviation Maintenance	3
Aviation Maintenance Elective	3
Semester Hours	6

Requirements	Credits
UNSY 322 - Operational and Business Aspects of Uncrewed Aircraft Systems	3
AMNT 322 - Aircraft Inspection and Scheduled Maintenance Programs	3
Semester Hours	6

Requirements	Credits
MGMT 324 - Aviation Labor Relations	3
SCLM 411 - Logistics Management for Aviation/Aerospace	3
Semester Hours	6

Requirements	Credits
MGMT 326 - Concepts and Practices of Project Management	3
Aviation Maintenance Elective	3
Semester Hours	6

Requirements	Credits
Aviation Maintenance Elective	3
Management - Upper Level (MGMT)	3
Semester Hours	6

Total Credits

Total Hours for All Requirements: 30

Safety Specialization

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
Humanities - Lower or Upper Level	3
Physical Science/Physics	3
Semester Hours	6

Requirements	Credits
Social Sciences - Lower or Upper Level	3
Computer Science/Information Technology	3
Semester Hours	6

Requirements	Credits
Communication above COMM 106	3
ASCI 202 - Introduction to Aeronautical Science	3
Semester Hours	6

Total Credits

Total Hours for All Requirements: 30

Year Two

Requirements	Credits
AMNT 265 - Aeronautical Electronics for Aviation Maintenance Technicians	3
Social Sciences - Lower or Upper Level	3
Semester Hours	6

Requirements	Credits
AMNT 240 - General Aeronautics and Applications	3
AMNT 260 - Aircraft Electrical Systems Theory	3
Semester Hours	6

Requirements	Credits
AMNT 270 - Airframe Structures and Applications	3
AMNT 271 - Airframe Systems and Applications	3
Semester Hours	6

Requirements	Credits
AMNT 280 - Reciprocating Engine Theory and Applications	3

AMNT 281 - Turbine Engine Theory and Applications	3
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Semester Hours	6
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Requirements	Credits
Physical Science/Physics	3
MGMT 201 - Principles of Management	3
Semester Hours	6

Total Credits

Total Hours for All Requirements: 30

Year Three

Requirements	Credits
STAT 211 - Statistics with Aviation Applications	3
ASCI 404 - Applications in Aviation and Aerospace Law	3
Semester Hours	6

Requirements	Credits
AMNT 272 - Fundamentals of Aircraft Avionics	3
Humanities/Social Sciences - Upper Level	3
Semester Hours	6

Requirements	Credits
AMNT 290 - Introduction to Aerospace Composites	3
AMNT 429 - Advanced Technologies in Design and Production of Aircraft Structures and Systems	3
Semester Hours	6

Requirements	Credits
AMNT 424 - Maintenance Repair and Overhaul in Aviation	3
AMNT 416 - Aviation Maintenance Management: A Global Perspective	3
Semester Hours	6

Requirements	Credits
Safety Elective - Upper Level	3
Aviation Maintenance Elective	3
Semester Hours	6

Total Credits

Total Hours for All Requirements: 30

Year Four

Requirements	Credits
Aviation Maintenance Elective	3
Aviation Maintenance Elective	3
Semester Hours	6

Requirements	Credits
AVSF 320 - Human Factors in Aviation Safety	3

AVSF 335 - Mechanical and Structural Factors in Aviation Safety	3
Semester Hours	6
Requirements	Credits
SFTY 341 - Occupational Safety and Health Program Management	3
AVSF 409 - Aviation Safety	3
Semester Hours	6
Requirements	Credits
SFTY 426 - System Safety Management	3
Aviation Maintenance Elective	3
Semester Hours	6
Requirements	Credits
AMNT 491 - Operational Applications in Aviation Maintenance	3
Aviation Maintenance Elective	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/>)