

B.S. in Applied Meteorology

The Bachelor of Science in Applied Meteorology is housed in the Department of Applied Aviation Sciences in the College of Aviation. The program includes theoretical instruction and applied experience in weather forecasting and observation. Students complete a capstone research project with a faculty member. The program follows guidelines established by the American Meteorological Society (AMS), the National Weather Service and the U.S. Air Force.

At the **Prescott Campus**, the Applied Meteorology program includes a meteorology lab and computer-equipped classrooms for the study of atmospheric phenomena, including severe thunderstorms, tornadoes and climate change. Students may complete certifications in Emergency Response Meteorology or Airline Dispatching and may pursue minors in fields such as Applied Mathematics, Computer Science and Flight.

The B.S. in Meteorology (<https://catalog.erau.edu/programs/undergraduate/bachelors/meteorology/>) degree is offered at the **Daytona Beach Campus**.

Program-Level Student Learning Outcomes

Students will:

- Prepare for careers in operational weather forecasting, consulting, and research agencies.
- Analyze data from modern weather sensing equipment through computer visualization and programming.
- Effectively communicate meteorological information pertinent to their employer.
- Apply meteorology theory in various contexts.
- Interpret various meteorological information and data sets to generate forecast products.

Prescott Program Requirements

General Education Requirements	38
Core Requirements	46
Program Support Courses	20
Electives	16
Total Credits	120

Program Details

The Bachelor of Science in Applied Meteorology program requires successful completion of a minimum of 120 credit hours. The program may be completed in eight semesters, or four years, assuming appropriate background and full-time enrollment. 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 necessary to earn this degree are listed below.

Students should be aware that many courses have prerequisites and/or corequisites and should plan to begin the required calculus sequence as soon as they are eligible. In addition, all meteorology (WEAX) courses, except WEAX 201, WEAX 203L, and WEAX 301, are typically offered once per year, although select courses may be available during summer terms. Students are responsible for ensuring that all prerequisite and degree requirements are met prior to enrollment in advanced coursework.

General Education Requirements

Communication	9
COMM 122 English Composition	
COMM 219 Speech	
COMM 221 Technical Communication	

Humanities - Lower Level	3
Social Sciences - Lower Level	3
Humanities/Social Sciences - Lower or Upper Level	3
Humanities/Social Sciences - Upper Level	3
Computer Science/Information Technology	3
CPSC 118 Fundamentals of Computer Programming	
Mathematics	8
MATH 241 Calculus and Analytical Geometry I	
MATH 242 Calculus and Analytical Geometry II	
Physical/Life Sciences	6
PHYS 226 Physics I	
PHYS 227 Physics II	
Total Credits	38

Core Requirements

WEAX 201 Introduction to Meteorology	3
WEAX 203L Survey of Meteorology Laboratory	1
WEAX 261 Applied Climatology	3
WEAX 270 Weather Information Systems	3
WEAX 301 Aviation Weather	3
WEAX 353 Thermodynamics of the Atmosphere	3
WEAX 354 Dynamics of the Atmosphere	3
WEAX 363 Thunderstorms	3
WEAX 365 Satellite and Radar Weather Interpretation	3
WEAX 390 Atmospheric Physics	3
WEAX 420 Advanced Atmospheric Thermodynamics	3
WEAX 427 Forecasting Techniques	3
WEAX 490 Advanced Dynamic Meteorology I	3
WEAX 491 Advanced Dynamic Meteorology II	3
WEAX 492 Advanced Synoptic Meteorology	3
WEAX 493 Senior Thesis	3
Total Credits	46

Program Support Courses

CHEM 110 General Chemistry I	3
CHEM 110L General Chemistry I Laboratory	1
GEOS 210 Introduction to Geographic Information Systems	3
MATH 243 Calculus and Analytical Geometry III	4
MATH 345 Differential Equations and Matrix Methods	4
PHYS 226L Physics I Laboratory	1
STAT 222 Business Statistics	3
UNIV 101 College Success	1
Total Credits	20

Electives

Choose One of the Following Specified Electives:	3
GEOS 310 Advanced Geographic Information Systems	
MATH 441 Mathematical Methods for Engineering and Physics I	
WEAX 312 Mountain Meteorology	
WEAX 322 Space Weather	
Open Electives	13
Total Credits	16

Suggested Plan of Study

Year One

Requirements	Credits
UNIV 101 - College Success	1
COMM 122 - English Composition	3
PHYS 226 - Physics I	3
PHYS 226L - Physics I Laboratory	1
MATH 241 - Calculus and Analytical Geometry I	4
WEAX 201 - Introduction to Meteorology	3
WEAX 203L - Survey of Meteorology Laboratory	1
Semester Hours	16

Requirements	Credits
GEOS 210 - Introduction to Geographic Information Systems	3
PHYS 227 - Physics II	3
MATH 242 - Calculus and Analytical Geometry II	4
WEAX 353 - Thermodynamics of the Atmosphere	3
WEAX 301 - Aviation Weather	3
Semester Hours	16

Total Credits

Total Hours for All Requirements: 32

Year Two

Requirements	Credits
WEAX 261 - Applied Climatology	3
WEAX 354 - Dynamics of the Atmosphere	3
WEAX 365 - Satellite and Radar Weather Interpretation	3
MATH 243 - Calculus and Analytical Geometry III	4
COMM 219 - Speech	3
Semester Hours	16

Requirements	Credits
WEAX 270 - Weather Information Systems	3
WEAX 363 - Thunderstorms	3
CHEM 110 - General Chemistry I	3
CHEM 110L - General Chemistry I Laboratory	1
MATH 441 - Mathematical Methods for Engineering and Physics I, GEOS 310 - Advanced Geographic Information Systems, WEAX 312 - Mountain Meteorology, or WEAX 322 - Space Weather	3
Social Sciences - Lower Level	3
Semester Hours	16

Total Credits

Total Hours for All Requirements: 32

Year Three

Requirements	Credits
WEAX 420 - Advanced Atmospheric Thermodynamics	3
MATH 345 - Differential Equations and Matrix Methods	4
COMM 221 - Technical Communication	3
CPSC 118 - Fundamentals of Computer Programming	3
Humanities - Lower Level	3
Semester Hours	16

Requirements	Credits
WEAX 390 - Atmospheric Physics	3
WEAX 492 - Advanced Synoptic Meteorology	3
Humanities/Social Sciences - Lower or Upper Level	3
Humanities/Social Sciences - Upper Level	3
Open Elective - Lower or Upper Level	3
Semester Hours	15

Total Credits

Total Hours for All Requirements: 31

Year Four

Requirements	Credits
WEAX 427 - Forecasting Techniques	3
WEAX 490 - Advanced Dynamic Meteorology I	3
STAT 222 - Business Statistics or PSYC 226 - Statistical Analysis for the Social Sciences	3
Open Elective - Lower or Upper Level	4
Semester Hours	13

Requirements	Credits
WEAX 491 - Advanced Dynamic Meteorology II	3
WEAX 493 - Senior Thesis or 458 - All Hazards Support, Modeling and Mapping	3
Open Elective - Lower or Upper Level	3
Open Elective - Lower or Upper Level	3
Semester Hours	12

Total Credits

Total Hours for All Requirements: 25