

Atmospheric & Earth Science, BS Earth System Science Concentration

2026 - 2027 Catalog

Charger Foundations

Area I: Freshman Composition

Course Number	Credits	Course Name	Semester Usually Offered
EH 101 & 102	6	College Writing I & II	Fall, Spring, Summer
EH 103	3	Accelerated College Writing	Fall, Spring
EH 105	3	Honors English Seminar	Fall

Area II: Humanities and Fine Arts

Course Number	Credits	Course Name	Semester Usually Offered
Varies	3	Fine Art	Fall, Spring, Summer
Varies	3	Literature	Fall, Spring, Summer
Varies	3	Non-Literature Humanity	Fall, Spring, Summer
Varies	3	Humanities/Fine Art/Literature	Fall, Spring, Summer

Area III: Mathematics and Sciences 12 credits

Mathematics 3-6 credits

Course Number	Credits	Course Name	Semester Usually Offered
MA 120 or MA 171 or MA 171S or MA 150 and 151	3-6	Math Professional Applications or Calculus I or Calculus I with Foundations A and B	Fall, Spring, Summer

Natural Sciences (Lab) 8 credits

Course Number	Credits	Course Name	Semester Usually Offered
PH 101/101L or PH 111/114	3/1	General Physics I + Lab or General Physics with Calculus I + Lab	Fall Fall, Spring, Summer
PH 102/102L or PH 112/115	3/1	General Physics I + Lab or General Physics with Calculus II + Lab	Spring Fall, Spring, Summer

Area IV: History and Social & Behavioral Sciences 12 credits

Course Number	Credits	Course Name	Semester Usually Offered
Varies	3	History	Fall, Spring, Summer
AES 105	3	World Geography	Fall, Spring
AES 110	3	Human Geography	Fall, Spring
Varies	3	History/Social & Behavioral Science	Fall, Spring, Summer

Area V: Pre-Professional

Additional Requirements 22 credits

Course Number	Credits	Course Name	Semester Usually Offered
FYE 101S or HON 101	1	Charger Success - Science or Introduction to Honors Research	Fall
CS 104	3	Intro to CS Using Python	Fall, Spring, Summer
BYS 120/122 or CH 101/105 or CH 121/125	3/1	Organismal Biology + Lab or Intro to Chemistry + Lab or General Chemistry I + Lab	Fall, Spring, Summer
MA 172 or MA 281	4 3	Calculus II or Elements of Statistical Analysis	FA/SP/SU FA/SP
MA 201	4	Calculus III	Fall, Spring, Summer
Varies	3	Statistics	Fall, Spring

Major Requirements

Atmospheric & Earth Science Core 17 credits

Course Number	Credits	Course Name	Semester Usually Offered
AES 103/103L	4	Environmental Earth Science + Lab	Fall, Spring, Summer
AES 104/104L	4	Weather & Climate Change + Lab	Fall, Spring, Summer
AES 209	2	Data Analysis Tools	Fall, Spring
AES 301*	3	Intro to Earth & Atmospheric Physics	Fall, Spring

AES 303 - AMS-NWS Guidelines for BS Degree in Meteorology	3	Classification & Physical Causes of Climate	Spring
AES 498	1	Research & Professional Development Capstone	Fall, Spring

Atmospheric Science/Meteorology Concentration 16 credits

Course Number	Credits	Course Name	Semester Usually Offered
AES 212/212L	4	Severe Weather Analysis	Spring
AES 321 or AES 370	3	Pollution Problems or Intro to Remote Sensing	Fall, Spring
AES 341 - AMS-NWS Guidelines for BS Degree in Meteorology	3	Thermodynamic Meteorology	Fall
AES 351 - AMS-NWS Guidelines for BS Degree in Meteorology	3	Dynamic Meteorology	Fall
AES 303	3	Classification & Physical Causes of Climate	Spring
AES 408 or AES 409	3	Python for GIS or Sci Programming for Earth/Atmos	Spring Fall

Atmospheric Science/Meteorology Concentration Electives

Choose 17 credits: 9 credits must be 400 level or above

AES 305, 352, 410, 454, 471, 472 count toward the National Weather Service GS-1340 Federal Civil Service Requirements.

General Electives

Elective courses can be taken from any department and do not have to be taken in your major or minor. Only 4 HPE credits can apply.

Graduation Requirements

- Minimum of 120 credits required for graduation
 - At least 36 credits must be completed at the 300 level or higher
 - All prerequisite courses must be completed with a grade of C- or higher
 - The UAH Catalog is the final authority for all degree requirements
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Charger Foundations Choices

Freshman Composition	Choose 1	College Writing I & II (EH 101 + 102) Accelerated College Writing (EH 103; equivalent to EH 101 & EH 102) Honors English Seminar (EH 105; equivalent to EH 101 & EH 102)
Fine Arts	Choose 1	Ancient & Medieval Art (ARH 100) Renaissance to Modern Art (ARH 101) World Art (ARH 103) Drawing: Foundations (ARS 160) Intro to Film Studies (FMA 1230) Intro to Music Literature (MU 100) Theatre Appreciation (TH 122)
Literature	Choose 1 or 2	Readings in Literature & Culture I (EH 207) Readings in Literature & Culture II (EH 208) Literature without Borders (EH 241) Mythology (EH 242) Protest Literature (EH 243) Heroes &/or Monsters (EH 244) Love &/or Romance (EH 245) Speculative Realities (EH 246)
Humanities (Non-Literature)	Choose 1 or 2	Ancient & Medieval Art (ARH 100) Renaissance to Modern Art (ARH 101)

		<p>World Art (ARH 103) Drawing: Foundations (ARS 160) Intro to Film Studies (FMA 123) Intro to Music Literature (MU 100) Theatre Appreciation (TH 122) Ancient & Medieval Worlds (AMS 229) Public Speaking (CM 113) Intro to Philosophy (PHL 101) Intro to Ethics (PHL 102) Intro to Logic (PHL 103) Tech, Science, & Human Values (PHL 150) Intro to Women's Studies (WGS 200) Foreign Language (WLC 101) International Cinema (WLC 204)</p>
Mathematics	Choose 1	<p>Math Professional Applications (MA 120) or Calculus I with Foundations A & B (MA 150 & MA 151) or Calculus I (MA 171 or MA 171S)</p>
Natural Sciences (Lab) Sequence	Choose 1 Sequence	<p>General Physics I + Lab (PH 101/101L) and General Physics II + Lab (PH 102/102L) General Physics with Calculus I + Lab (PH 111/114) and General Physics with Calculus II + Lab (PH 112/115)</p>
History	Choose 1 or 2	<p>World History to 1500 (HY 103) World History since 1500 (HY 104) United States to 1877 (HY 221) United States since 1877 (HY 222)</p>
Social & Behavioral Sciences	Choose 2 or 3	<p>World Geography (AES 105) Human Geography (AES 110) Global Systems & Cultures (GS 200) Macroeconomics (ECN 142) Microeconomics (ECN 143) Intro to American Government (PSC 101) Intro to Comparative Politics (PSC 102) Intro to International Relations (PSC 260) General Psychology I (PY 101) Life-Span Development (PY 201) Intro to Sociology (SOC 100) Intro to Criminology (SOC 103) Intro Justice & Equity Studies (JES 200)</p>

Students must take one literature and one history course.
 Students must also take either a second literature or history course to complete a sequence.

Statistics Choices

Statistics	Choose 1	Elements of Statistical Analysis (MA 281) Intro Probability & Statistics (MA 385) Psychological Statistics (PY 300) Statistics for Social Sciences (SOC 303)
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Atmospheric Science/Meteorology Concentration Elective Choices

Concentration Electives	Choose 17 credits (9 at 400 or higher level)	AES 305 Hydrology AES 313 Geographic Information Systems AES 321 Pollution Problems AES 352 Synoptic Meteorology AES 370 Intro to Remote Sensing AES 402 Natural Disasters AES 407 Env Threats, Pub Policy, & Decision Making AES 408 Python for GIS AES 409 Scientific Programming for Earth & Atmos AES 410 Operational Weather Forecasting AES 414 Geospatial Applications AES 415 Advanced Topics in GIS AES 420 Intro Atmospheric Chemistry & Air Pollution AES 441 Atmospheric Thermo & Cloud Physics AES 451 Atmospheric Fluid Dynamics I AES 454 Forecasting Mesoscale Proc AES 461 Atmospheric Radiation I AES 471 Radar Meteorology AES 472 Satellite Meteorology AES 490 Special Topics in Earth &
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