

**Bachelor of Science Degree in Hydrology and Atmospheric Sciences (HAS major, ATMO Track)**  
**Departmental Advisor Grid ☿ Catalog AY2025-2026**

FALL			COMMON FRESHMAN CORE			SPRING		
	<b>LANG Req</b>	4	2 <sup>nd</sup> Semester language Req.		<b>MATH 129</b>	3	Calculus II	
	<b>MATH122a&amp;MATH122b</b>	5	Functions for Calculus & First Semester Calculus		<b>CHEM152</b>	4	General Chemistry II	
	<b>CHEM151<sup>3</sup></b>	4	General Chemistry I ( <i>GE Core: Exploring Perspectives (EP) – Natural Scientist</i> )		<b>PHYS 141</b>	4	Introductory Mechanics	
	<b>ENGL 101</b>	3	First-Year Composition I		<b>ENGL 102</b>	3	First-Year Composition II	
					<b>GE Core<sup>3</sup></b>	1	<i>Entry Course: Intro to General Education (GE) Experience</i>	
					<b>HWRS 195a</b>	1	Careers in HAS	
TOTAL 16					TOTAL 16			
FALL			SOPHOMORE YEAR			SPRING		
	<b>MATH 223</b>	4	Vector Calculus		<b>CSC 110 or ISTA 130</b>	4 or 3	Introduction to Computer Programming I or Computational Thinking and Doing	
	<b>ATMO 436a</b>	3	Weather Fundamentals		<b>MATH 254</b>	3	Intro Ordinary Diff Equations	
	<b>GEOG 330</b>	3	Intro to Remote Sensing		<b>Tech Writing &amp; Comms Theme</b>	3	ENVS 408, ENVS 415, JOUR 455, JOUR 472, ENGL 313, ENGL 308	
	<b>GE Core<sup>3</sup></b>	3	<i>GE Core: Building Connections</i>		<b>GE Core<sup>3</sup></b>	3	<i>GE Core: Building Connections</i>	
	<b>PHYS 142</b>	3	IntroOptics-Thermodynamics		<b>GE Core<sup>3</sup></b>	3	<i>GE Core: EP- Social Scientist</i>	
TOTAL 16					TOTAL 15-16			
FALL			JUNIOR YEAR			SPRING		
	<b>ATMO 441a</b>	3	Dynamic Meteorology I		<b>Tech Elec</b>	3	<i>Elective:</i>	
	<b>HWRS 350</b>	4	<b>Principles of Hydrology</b>		<b>ATMO 441b</b>	3	Dynamic Meteorology II	
	<b>ATMO 180 or GEOS 342</b>	3	Severe Wx & Climate Change -or- History of Earth's Climate		<b>SIE 305</b>	3	Intro to ENGR Probability & Statistics	
	<b>GE Core<sup>3</sup></b>	3	<i>GE Core: EP - Humanist</i>		<b>GE Core<sup>3</sup></b>	3	<i>GE Core: Building Connections</i>	
	<b>Comp Elec Theme</b>	3	Choose from: HWRS 401, CSC 250, HWRS 428, RNR 403, RNR 417, BE 485		<b>HAS Elec<sup>2</sup></b>	3	<b>Elective</b>	
TOTAL 16					TOTAL 15			
FALL			SENIOR YEAR			SPRING		
	<b>ATMO 451a</b>	3	Physical Meteorology I		<b>HWRS 449</b>	3	Statistical Hydrology	
	<b>ATMO 474a</b>	3	Weather Analysis and Forecasting I		<b>HWRS 495a</b>	1	Current Topics in Hydrology and Atmospheric Sciences	
	<b>HAS Elec<sup>2</sup></b>	3	<b>Elective</b>		<b>ATMO 474b</b>	3	Weather Analysis and Forecasting II	
	<b>HWRS 443A</b>	3	Risk Assessment (or equiv.)		<b>Water, Policy, Law, or Economics Theme</b>	3	Choose from: GEOG 468; AREC 479; POL 481; RNR 485; PA 484; LAW 454; RNR 480	
	<b>GE Core<sup>3</sup></b>	3	<i>GE Core: EP - Artist</i>		<b>HAS Elec<sup>2</sup></b>	3	<b>Elective</b>	
					<b>GE Core<sup>3</sup></b>	1	<i>Exit Course: GE Portfolio Course</i>	
TOTAL 15					TOTAL 14			

<sup>100%</sup> Engagement course, notation on transcript

**Highlighted Classes** avail. at 500 level for students accepted to the Accelerated Master's Program (AMP) in ATMO. A max of 12 units may fulfill both undergraduate & AMP requirements

**Highlighted classes** indicate courses that are **possible** to transfer from other academic institutions. A maximum of 64 units may be transferred and applied to a UA BS degree. Check with your advisor to ensure classes will transfer and fulfill degree requirements.

<sup>1</sup> TECHNICAL ELECTIVE options. Complete 3 units of coursework. Tech elective courses may not be prerequisite to or equivalent to any required course. Students who wish to emphasize in Groundwater may apply course to undergraduate certificate. See advisor for approval before enrolling. **Tech Elective options include:**

- **Surface Water** – CE 427, RNR 417, CE 214, CE 323. (**CE 214** and 323 are exceptions to prerequisite/equivalent rule.)
- **Groundwater** – HWRS 482, HWRS 405, GEOS 302, GEOS 304, GEOS Elective, or HWRS 518 for advanced students who meet eligibility requirements.
- **Water Quality** – HWRS 480, CHEM 241a, MIC 205A & L after taking MIC 181R, WSM 468, CHEE 476, CHEE 370r
- **Water Resources** –POL 481, ENVS 444, ENVS 454, HWRS 520, for advanced students who meet eligibility requirements.
- **Atmospheric Science** – ATMO 469A, ATMO 469B, GEOS 412A, GEOS 479, GEOS 437, GEOS 478, GEOS 483, MATH 313, PHYS 241

Additional electives in these categories may be available **with advisor approval**.

<sup>2</sup> HAS MAJOR ELECTIVES (Advanced Courses in HAS) – Complete 3 courses: (1) HWRS 482; (2) GEOS 450; (3) **HWRS 498**; (4) CE 427; [5] RNR 403, 417, or 420; (6) ATMO 451B; (7) ATMO 455; (8) ATMO 421 or GEOG 430. Consult [Catalog](#) and [Schedule of Classes](#) for semester of offering! The instructor must approve the Senior Capstone topic ≥ semester prior to enrollment; Honors students may complete an approved Senior Honors Thesis in lieu of the Senior Capstone course.

<sup>3</sup> General Education Core must meet University requirements. At least 12 units of Exploring Perspectives and 9 units of Building Connections are required. Exploring Perspectives must include 1 Natural Scientist focus, 1 Social Scientist focus, 1 Humanist focus, and 1 Artist focus class. Transfer Students may not need the entry/exit 1-unit courses.

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FALL			COMMON FRESHMAN CORE			SPRING		
	<b>LANG Req</b>	4	2 <sup>nd</sup> Semester Language Req		<b>MATH 129</b>	3	Calculus II	
	<b>MATH122A</b>	5	Functions for Calculus		<b>CHEM152</b>	4	General Chemistry II	
	<b>MATH 122B</b>		1 <sup>st</sup> Semester Calculus					
	<b>CHEM151<sup>3</sup></b>	4	General Chemistry I ( <i>GE Core: Exploring Perspectives (EP) – Natural Scientist</i> )		<b>GEOS 251</b>	4	Physical Geology	
	<b>ENGL 101</b>	3	First-Year Composition I		<b>ENGL 102</b>	3	First-Year Composition II	
					<b>HWRS 195a</b>	1	Careers in HAS	
					<b>GE Core<sup>3</sup></b>	1	<i>Entry Course: Intro to General Education (GE) Experience</i>	
TOTAL 16				TOTAL 16				

SOPHOMORE YEAR				SPRING			
	<b>MATH 223</b>	4	Vector Calculus		<b>Water Quality Theme</b>	3	<i>Choose from: HWRS 417a (preferred), CHEE 476, ENVS 462, WSM 468</i>
	<b>HWRS 350</b>	4	<b>Principles of Hydrology</b>		<b>MATH 254</b>	3	Intro Ordinary Diff Equations
	<b>PHYS 141</b>	4	Introduction to Mechanics		<b>CE 218</b>	3	Mechanics of Fluids
	<b>GE Core<sup>3</sup></b>	3	<i>GE Core: EP- Social Scientist</i>		<b>Tech Writing &amp; Comms Theme</b>	3	ENVS 408, ENVS 415, JOUR 455, JOUR 472, ENGL 313, ENGL 308
					<b>PHYS 143</b>	2	Intro Optics-Thermodynamics
TOTAL 15				TOTAL 14			

FALL			JUNIOR YEAR			SPRING		
	<b>HWRS 431</b>	4	Hydrogeology		<b>SIE 305</b>	3	Intro to ENGR Probability & Statistics	
	<b>Tech Elec<sup>1</sup></b>	3	<i>Elective:</i>		<b>GEOS 304</b>	4	Structural Geology [OR GEOS 302]	
	<b>CE 427<sup>2</sup></b>	3	Comp App Hydraulics [ <b>OR other HAS Elective</b> ]		<b>GE Core<sup>3</sup></b>	3	<i>GE Core: Building Connections</i>	
	<b>GE Core<sup>3</sup></b>	3	<i>GE Core: EP - Humanist</i>		<b>CE 423</b>	3	Hydrology	
	<b>Comp Elec Theme</b>	3	<i>Choose from: HWRS 401, CSC 250, HWRS 428, RNR 403, RNR 417, BE 485</i>		<b>HWRS Elec.</b>	3	Choose from any Tech Elec., HAS Elec. or Computational Elec.	
TOTAL 16				TOTAL 16				

FALL			SENIOR YEAR			SPRING		
	<b>HWRS 443A</b>	3	Risk Assess for Env. Sys		<b>GE Core<sup>3</sup></b>	3	<i>GE Core: Building Connections</i>	
	<b>ATMO 436a</b>	3	Fund. of Atmos Sciences		<b>HWRS 449</b>	3	Statistical Hydrology	
	<b>HWRS 498<sup>2</sup></b>	2	<b>Senior Capstone (OR other HAS Elective)</b>		<b>HWRS 482<sup>2</sup></b>	3	Groundwater Modeling [ <b>OR other HAS Elective</b> ]	
	<b>GE Core<sup>3</sup></b>	3	<i>GE Core: EP - Artist</i>		<b>HWRS 498<sup>2</sup></b>	2	<b>Senior Capstone 2<sup>nd</sup> semester</b>	
	<b>Water Policy, Law, or Econ Elective Theme</b>	3	<i>Choose from: GEOG 468; AREC 479; POL 481; RNR 485; PA 484; LAW 454; RNR 480</i>		<b>Subsurface theme</b>	3	<i>Choose from: HWRS 518 when qualified or ENVS 470</i>	
	<b>GE Core<sup>3</sup></b>	3	<i>GE Core: Building Connections</i>		<b>GE Core<sup>3</sup></b>	1	<i>Exit Course: GE Portfolio Course</i>	
TOTAL 17				TOTAL 15				

**100% Engagement course, notation on transcript**

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