

Bachelor of Science Degree in Hydrology and Atmospheric Sciences (**HAS major, EHY Track**)
Departmental Advisor Grid ☞ Catalog **AY2024-2025**

FALL		COMMON FRESHMAN CORE		SPRING			
	LANG Req	4	2 nd Semester Language Req		MATH 129	3	Calculus II
	MATH122A	5	Functions for Calculus		CHEM152	4	General Chemistry II
	MATH 122B		1 st Semester Calculus				
	CHEM151³	4	General Chemistry I (<i>GE Core: Exploring Perspectives (EP) – Natural Scientist</i>)		GEOS 251	4	Physical Geology
	ENGL 101	3	First-Year Composition I		ENGL 102	3	First-Year Composition II
					HWRS 195a	1	Careers in HAS
					GE Core³	1	<i>Entry Course: Intro to General Education (GE) Experience</i>
TOTAL 16				TOTAL 16			

FALL		SOPHOMORE YEAR		SPRING			
	MATH 223	4	Vector Calculus		C E 218	3	Mechanics of Fluids
	HWRS 350	3	Principles of Hydrology		MATH 254	3	Intro Ordinary Diff Equations
	PHYS 141	4	Introduction to Mechanics		GEOS 304	4	Structural Geol. [OR GEOS302]
	GE Core³	3	<i>GE Core: Building Connections</i>		GE Core³	3	<i>GE Core: Building Connections</i>
	GE Core³	3	<i>GE Core: EP- Social Scientist</i>		PHYS 143	2	Intro Optics-Thermodynamics
TOTAL 17				TOTAL 15			

FALL		JUNIOR YEAR		SPRING			
	HWRS 431	4	Hydrogeology		Tech Elec¹	3	<i>Elective:</i>
	ATMO 436A	3	Fundamentals of the Atmospheric Sciences		SIE 305	3	Intro to Engr Probability & Statistics
	CE 427²	3	Comp App Hydraulics [OR other HAS Elective]		Tech Writing & Communication Theme	3	<i>Choose from: ENVS 408, ENVS 415, JOUR 455, JOUR 472, ENGL 313, ENGL 308</i>
	GE Core³	3	<i>GE Core: EP - Humanist</i>		CE 423	3	Hydrology
	Comp Elec Theme	3	Choose from: HWRS 401, CSC 250, HWRS 428, RNR 403, RNR 417, BE 485		HWRS 413A	3	Field Hydrology/Hydrological Tools & Measurements Course
TOTAL 16				TOTAL 15			

FALL		SENIOR YEAR		SPRING			
	HWRS 443A	3	Risk Assess for Env. Sys		GE Core³	3	<i>GE Core: Building Connections</i>
	HWRS 417A	3	Fundamentals of Water Qual.		HWRS 449	3	Statistical Hydrology
	HWRS 498²	2	Senior Capstone (OR other HAS Elective)		HAS Elec²	3	<i>Elective</i>
	GE Core³	3	<i>GE Core: EP - Artist</i>		HWRS 498²	2	Senior Capstone 2nd semester
	HWRS 405	3	Vadose Zone Hydrology		Water Policy, Law, or Econ Elective Theme	3	<i>Choose from: GEOG 468; AREC 479; POL 481; RNR 485; PA 484; LAW 454</i>
					GE Core³	1	<i>Exit Course: GE Portfolio Course</i>
TOTAL 14				TOTAL 15			

100% Engagement course, notation on transcript

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

Highlighted classes indicate courses that may soon also be fulfilled with another course option(s) of similar nature.

¹ 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/CE476a
- **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**.

² 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.

³ 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.