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

FALL		Соммо	N FRESH	MAN CORE		Spring
LANG Req	4	2 nd Semester language Req.		MATH 129	3	Calculus II
MATH122a&	F	Functions for Calculus & First				
MATH122b	Э	Semester Calculus		CHEM152	4	General Chemistry II
		General Chemistry I (GE				
CHEM151 ³	4	Core: Exploring Perspectives		PHYS 141	4	Introductory Mechanics
		(EP) – Natural Scientist)				
ENGL 101	3	First-Year Composition I		ENGL 102	3	First-Year Composition II
				GE Core ³	1	Entry Course: Intro to General
					-	Education (GE) Experience
				HWRS 195a	1	Careers in HAS
		TOTAL 16				TOTAL 16
FALL SOPHOMORE YEAR					SPRING	
				CSC 110 or ISTA	4	Introduction to Computer
MATH 223	4	Vector Calculus		130	or	Programming I or Computational
	2	Marthan Friday antala			3	Ininking and Doing
ATMU 436a	3	weather Fundamentals		MAIN 254 Technical Writing	3	Intro Ordinary DIT Equations
GEOG 330	2	Intro to Domoto Consing			2	ENVS 408, ENVS 415, JOUR 455,
GEOG 330	5	Intro to Remote Sensing		Theme	5	JOUR 472, ENGL 313, ENGL 308
		GE Core: Building		meme		
GE Core ³	3	Connections		GE Core ³	3	GE Core: Building Connections
PHYS 142	3	IntroOptics-Thermodynamics		GE Core ³	3	GE Core: EP- Social Scientist
			L			
		TOTAL 16				TOTAL 15-16
FALL		TOTAL 16	UNIOR Y	EAR		TOTAL 15-16 Spring
FALL ATMO 441a	3	TOTAL 16 J Dynamic Meteorology I	UNIOR Y	EAR Tech Elec	3	TOTAL 15-16 Spring Elective:
Fall ATMO 441a HWRS 350	3 4	TOTAL 16 J Dynamic Meteorology I Principles of Hydrology	UNIOR Y	ÉAR Tech Elec ATMO 441b	3 3	TOTAL 15-16 SPRING Elective: Dynamic Meteorology II
FALL ATMO 441a HWRS 350 GEOG 230 or	3 4 3	TOTAL 16 J Dynamic Meteorology I Principles of Hydrology Our Changing Climate or The	UNIOR Y	EAR Tech Elec ATMO 441b	3 3	TOTAL 15-16 SPRING Elective: Dynamic Meteorology II Intro to ENGR Probability &
FALL ATMO 441a HWRS 350 GEOG 230 or GEOS 342	3 4 3	TOTAL 16 J Dynamic Meteorology I Principles of Hydrology Our Changing Climate or The History of Earth's Climate	UNIOR Y	Tech Elec ATMO 441b SIE 305	3 3 3	TOTAL 15-16 SPRING Elective: Dynamic Meteorology II Intro to ENGR Probability & Statistics
FALL ATMO 441a HWRS 350 GEOG 230 or GEOS 342 GE Core ³	3 4 3 3	TOTAL 16 J Dynamic Meteorology I Principles of Hydrology Our Changing Climate or The History of Earth's Climate GE Core: EP - Humanist		^{TEAR} Tech Elec ATMO 441b SIE 305 <mark>GE Core</mark> ³	3 3 3 3	TOTAL 15-16 SPRING Elective: Dynamic Meteorology II Intro to ENGR Probability & Statistics GE Core: Building Connections
FALL ATMO 441a HWRS 350 GEOG 230 or GEOS 342 GE Core ³ Comp Elec	3 4 3 3	TOTAL 16 J Dynamic Meteorology I Principles of Hydrology Our Changing Climate or The History of Earth's Climate <i>GE Core: EP - Humanist</i> <i>Choose from:</i> HWRS 401, PROFESSION		Tech Elec ATMO 441b SIE 305 GE Core ³	3 3 3 3	TOTAL 15-16 SPRING Elective: Dynamic Meteorology II Intro to ENGR Probability & Statistics GE Core: Building Connections
FALL ATMO 441a HWRS 350 GEOG 230 or GEOS 342 GE Core ³ Comp Elec Theme	3 4 3 3 3	TOTAL 16 J Dynamic Meteorology I Principles of Hydrology Our Changing Climate or The History of Earth's Climate <i>GE Core: EP - Humanist</i> <i>Choose from:</i> HWRS 401, CSC 250, HWRS 428, RNR 402, PNP 4112, PE 405		^{'EAR} Tech Elec ATMO 441b SIE 305 <mark>GE Core</mark> ³ HAS Elec ²	3 3 3 3 3	TOTAL 15-16 SPRING Elective: Dynamic Meteorology II Intro to ENGR Probability & Statistics GE Core: Building Connections Elective
FALL ATMO 441a HWRS 350 GEOG 230 or GEOS 342 GE Core ³ Comp Elec Theme	3 4 3 3 3	TOTAL 16 J Dynamic Meteorology I Principles of Hydrology Our Changing Climate or The History of Earth's Climate <i>GE Core: EP - Humanist</i> <i>Choose from:</i> HWRS 401, CSC 250, HWRS 428, RNR 403, RNR 417, BE 485 TOTAL 16		^{TEAR} Tech Elec ATMO 441b SIE 305 GE Core ³ HAS Elec ²	3 3 3 3 3	TOTAL 15-16 SPRING Elective: Dynamic Meteorology II Intro to ENGR Probability & Statistics GE Core: Building Connections Elective TOTAL 15
FALL ATMO 441a HWRS 350 GEOG 230 or GEOS 342 GE Core ³ Comp Elec Theme	3 4 3 3 3	TOTAL 16 J Dynamic Meteorology I Principles of Hydrology Our Changing Climate or The History of Earth's Climate <i>GE Core: EP - Humanist</i> <i>Choose from:</i> HWRS 401, CSC 250, HWRS 428, RNR 403, RNR 417, BE 485 TOTAL 16		Tech Elec ATMO 441b SIE 305 GE Core ³ HAS Elec ²	3 3 3 3 3	TOTAL 15-16 SPRING Elective: Dynamic Meteorology II Intro to ENGR Probability & Statistics GE Core: Building Connections Elective TOTAL 15 SPRING
FALL ATMO 441a HWRS 350 GEOG 230 or GEOS 342 GE Core ³ Comp Elec Theme FALL ATMO 451a	3 4 3 3 3	TOTAL 16 J Dynamic Meteorology I Principles of Hydrology Our Changing Climate or The History of Earth's Climate <i>GE Core: EP - Humanist</i> <i>Choose from:</i> HWRS 401, CSC 250, HWRS 428, RNR 403, RNR 417, BE 485 TOTAL 16 S Physical Meteorology I	SENIOR Y	Tech Elec ATMO 441b SIE 305 GE Core ³ HAS Elec ²	3 3 3 3 3	TOTAL 15-16 SPRING Elective: Dynamic Meteorology II Intro to ENGR Probability & Statistics GE Core: Building Connections Elective TOTAL 15 SPRING Statistical Hydrology
FALL ATMO 441a HWRS 350 GEOG 230 or GEOS 342 GE Core ³ Comp Elec Theme FALL ATMO 451a	3 4 3 3 3 3	TOTAL 16 J Dynamic Meteorology I Principles of Hydrology Our Changing Climate or The History of Earth's Climate <i>GE Core: EP - Humanist</i> <i>Choose from:</i> HWRS 401, CSC 250, HWRS 428, RNR 403, RNR 417, BE 485 TOTAL 16 S Physical Meteorology I Woather Analysis and	SENIOR Y	Tech Elec ATMO 441b SIE 305 GE Core ³ HAS Elec ² Tear HWRS 449	3 3 3 3 3 3	TOTAL 15-16 SPRING Elective: Dynamic Meteorology II Intro to ENGR Probability & Statistics GE Core: Building Connections Elective TOTAL 15 SPRING Statistical Hydrology Current Tonics in Hydrology and
FALL ATMO 441a HWRS 350 GEOG 230 or GEOS 342 GE Core ³ Comp Elec Theme FALL ATMO 451a ATMO 474a	3 4 3 3 3 3 3 3 3	TOTAL 16 J Dynamic Meteorology I Principles of Hydrology Our Changing Climate or The History of Earth's Climate <i>GE Core: EP - Humanist</i> <i>Choose from:</i> HWRS 401, CSC 250, HWRS 428, RNR 403, RNR 417, BE 485 TOTAL 16 S Physical Meteorology I Weather Analysis and Forecasting I	Senior Y	Tech Elec ATMO 441b SIE 305 GE Core ³ HAS Elec ² TEAR HWRS 449 HWRS 495a	3 3 3 3 3 3 3 3 1	TOTAL 15-16 SPRING Elective: Dynamic Meteorology II Intro to ENGR Probability & Statistics GE Core: Building Connections Elective TOTAL 15 SPRING Statistical Hydrology Current Topics in Hydrology and Atmospheric Sciences
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FALL ATMO 441a HWRS 350 GEOG 230 or GEOS 342 GE Core ³ Comp Elec Theme FALL ATMO 451a ATMO 474a HAS Elec ²	3 4 3 3 3 3 3 3 3 3	TOTAL 16 Dynamic Meteorology I Principles of Hydrology Our Changing Climate or The History of Earth's Climate <i>GE Core: EP - Humanist</i> <i>Choose from:</i> HWRS 401, CSC 250, HWRS 428, RNR 403, RNR 417, BE 485 TOTAL 16 S Physical Meteorology I Weather Analysis and Forecasting I <i>Elective</i>		Tech Elec ATMO 441b SIE 305 GE Core ³ HAS Elec ² TEAR HWRS 449 HWRS 495a ATMO 474b	3 3 3 3 3 3 1 3 3	TOTAL 15-16 SPRING Elective: Dynamic Meteorology II Intro to ENGR Probability & Statistics GE Core: Building Connections Elective TOTAL 15 SPRING Statistical Hydrology Current Topics in Hydrology and Atmospheric Sciences Weather Analysis and Forecasting II
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FALL ATMO 441a HWRS 350 GEOG 230 or GEOS 342 GE Core ³ Comp Elec Theme FALL ATMO 451a ATMO 474a HAS Elec ² HWRS 443A	3 4 3 3 3 3 3 3 3 3 3 3 3	TOTAL 16 J Dynamic Meteorology I Principles of Hydrology Our Changing Climate or The History of Earth's Climate <i>GE Core: EP - Humanist</i> <i>Choose from:</i> HWRS 401, CSC 250, HWRS 428, RNR 403, RNR 417, BE 485 TOTAL 16 S Physical Meteorology I Weather Analysis and Forecasting I <i>Elective</i> Risk Assessment (or equiv.)		Tech Elec ATMO 441b SIE 305 GE Core ³ HAS Elec ² TEAR HWRS 449 HWRS 495a ATMO 474b Water, Policy, Law, or Economics	3 3 3 3 3 3 3 1 3 3 3	TOTAL 15-16 SPRING Elective: Dynamic Meteorology II Intro to ENGR Probability & Statistics GE Core: Building Connections Elective TOTAL 15 SPRING Statistical Hydrology Current Topics in Hydrology and Atmospheric Sciences Weather Analysis and Forecasting II Choose from: GEOG 468; AREC 479; POL 481; RNR 485; PA 484;
FALL ATMO 441a HWRS 350 GEOG 230 or GEOS 342 GE Core ³ Comp Elec Theme FALL ATMO 451a ATMO 474a HAS Elec ² HWRS 443A	3 4 3 3 3 3 3 3 3 3 3 3	TOTAL 16 J Dynamic Meteorology I Principles of Hydrology Our Changing Climate or The History of Earth's Climate <i>GE Core: EP - Humanist</i> <i>Choose from:</i> HWRS 401, CSC 250, HWRS 428, RNR 403, RNR 417, BE 485 TOTAL 16 S Physical Meteorology I Weather Analysis and Forecasting I <i>Elective</i> Risk Assessment (or equiv.)		Tech Elec ATMO 441b SIE 305 GE Core ³ HAS Elec ² TEAR HWRS 449 HWRS 495a ATMO 474b Water, Policy, Law, or Economics Theme	3 3 3 3 3 3 3 1 3 3 3	TOTAL 15-16 SPRING Elective: Dynamic Meteorology II Intro to ENGR Probability & Statistics GE Core: Building Connections Elective TOTAL 15 SPRING Statistical Hydrology Current Topics in Hydrology and Atmospheric Sciences Weather Analysis and Forecasting II Choose from: GEOG 468; AREC 479; POL 481; RNR 485; PA 484; LAW 454
FALL ATMO 441a HWRS 350 GEOG 230 or GEOS 342 GE Core ³ Comp Elec Theme FALL ATMO 451a ATMO 474a HAS Elec ² HWRS 443A GE Core ³	3 4 3 3 3 3 3 3 3 3 3 3 3 3	TOTAL 16 J Dynamic Meteorology I Principles of Hydrology Our Changing Climate or The History of Earth's Climate <i>GE Core: EP - Humanist</i> <i>Choose from:</i> HWRS 401, CSC 250, HWRS 428, RNR 403, RNR 417, BE 485 TOTAL 16 S Physical Meteorology I Weather Analysis and Forecasting I <i>Elective</i> Risk Assessment (or equiv.) <i>GE Core: EP - Artist</i>		Tech Elec ATMO 441b SIE 305 GE Core ³ HAS Elec ² HWRS 449 HWRS 495a ATMO 474b Water, Policy, Law, or Economics Theme HAS Elec ²	3 3 3 3 3 3 3 1 3 3 3 3 3 3	TOTAL 15-16 SPRING Elective: Dynamic Meteorology II Intro to ENGR Probability & Statistics GE Core: Building Connections Elective TOTAL 15 SPRING Statistical Hydrology Current Topics in Hydrology and Atmospheric Sciences Weather Analysis and Forecasting II Choose from: GEOG 468; AREC 479; POL 481; RNR 485; PA 484; LAW 454 Elective
FALL ATMO 441a HWRS 350 GEOG 230 or GEOS 342 GE Core ³ Comp Elec Theme FALL ATMO 451a ATMO 474a HAS Elec ² HWRS 443A GE Core ³	3 4 3 3 3 3 3 3 3 3 3 3 3	TOTAL 16 J Dynamic Meteorology I Principles of Hydrology Our Changing Climate or The History of Earth's Climate <i>GE Core: EP - Humanist</i> <i>Choose from:</i> HWRS 401, CSC 250, HWRS 428, RNR 403, RNR 417, BE 485 TOTAL 16 S Physical Meteorology I Weather Analysis and Forecasting I <i>Elective</i> Risk Assessment (or equiv.) <i>GE Core: EP - Artist</i>		Tech Elec ATMO 441b SIE 305 GE Core ³ HAS Elec ² HWRS 449 HWRS 495a ATMO 474b Water, Policy, Law, or Economics Theme HAS Elec ² GE Core ³	3 3 3 3 3 3 3 1 3 3 3 1	TOTAL 15-16 SPRING Elective: Dynamic Meteorology II Intro to ENGR Probability & Statistics GE Core: Building Connections Elective TOTAL 15 SPRING Statistical Hydrology Current Topics in Hydrology and Atmospheric Sciences Weather Analysis and Forecasting II Choose from: GEOG 468; AREC 479; POL 481; RNR 485; PA 484; LAW 454 Elective Exit Course: GE Portfolio Course
FALL ATMO 441a HWRS 350 GEOG 230 or GEOS 342 GE Core ³ Comp Elec Theme FALL ATMO 451a ATMO 474a HAS Elec ² HWRS 443A GE Core ³	3 4 3 3 3 3 3 3 3 3 3 3	TOTAL 16 J Dynamic Meteorology I Principles of Hydrology Our Changing Climate or The History of Earth's Climate <i>GE Core: EP - Humanist</i> <i>Choose from:</i> HWRS 401, CSC 250, HWRS 428, RNR 403, RNR 417, BE 485 TOTAL 16 S Physical Meteorology I Weather Analysis and Forecasting I <i>Elective</i> Risk Assessment (or equiv.) <i>GE Core: EP - Artist</i>		Tech Elec ATMO 441b SIE 305 GE Core ³ HAS Elec ² TEAR HWRS 449 HWRS 495a ATMO 474b Water, Policy, Law, or Economics Theme HAS Elec ² GE Core ³	3 3 3 3 3 3 1 3 3 3 1 1 3 1	TOTAL 15-16 SPRING Elective: Dynamic Meteorology II Intro to ENGR Probability & Statistics GE Core: Building Connections Elective TOTAL 15 SPRING Statistical Hydrology Current Topics in Hydrology and Atmospheric Sciences Weather Analysis and Forecasting II Choose from: GEOG 468; AREC 479; POL 481; RNR 485; PA 484; LAW 454 Elective Exit Course: GE Portfolio Course

100% 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.

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

¹TECHNICAL 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 <u>Catalog</u> and <u>Schedule of Classes</u> 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 lie u 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.