

COLLEGE OF SCIENCE

Atmospheric & Earth Science, BS

Earth System Science Concentration

2022-2023 Catalog | catalog.uah.edu

ompleted	Course Number	Credits	Course Name	Prerequisites, Corequisites and/or Prerequisites with Concurrency	Semester Usually Offered
		-		Foundations	
			Area I: Freshman Composition 6	credits - see attached for more options	
	EH 101	3	College Writing I	<u>Placement</u>	FA/SP/SU
	EH 102	3	College Writing II	EH 101 or EH 101S	FA/SP/SU
	EH 103	3	Accelerated College Writing	Placement	SP
	EH 105	3	Honors English Seminar	Honors	FA
	En Too	U		and Fine Arts 12 credits	173
		3	Fine Art	See attached for choices	
		3	Literature		
				Completion of Area I	
		3	Non-Literature Humanity	See attached for choices	
	*	3	Humanities/Fine Arts/Literature	See attached for choices	
			Area III: Mathematics	and Sciences 11-12 credits	
			Mathema	tics 3-4 credits	
	MA 120	3-4	Math Professional Applications	Placement or MA 107, 112	FA/SP/SU
	(or MA 171/171S)	3-4	(or Calculus A)	(or MA 113 or 115)	FA/5F/5U
			Natural Scien	ces (Lab) 8 credits	
_	PH 101/101L		General Physics I + Lab		
	(or PH 111/115)	4	(or General Physics w/ Calculus I +	(or MA 171)	FA/SP/SU
	PH 102/102L		General Physics II + Lab	PH 101	
	(or PH 112/116)	4	(or General Physics w/ Calculus II +	(or MA 172, PH 111/114)	FA/SP/SU
	(0111112/110)				
-		2		& Behavioral Sciences 12 credits	
		3	History	See attached for choices	
	AES 105	3	World Geography	Strongly Recommended, see attached for all choices	FA/SP
	AES 110	3	Human Geography	Strongly Recommended, see attached for all choices	FA/SP
		3	History/Social & Behavioral Science	See attached for choices	
			Area V: Pr	e-Professional	
				ience Majors (ESS) 14-15 credits	
	FYE 101S	1	Charger Success - Science	REQUIRED	FA
	TILIUIS	3	3	See attached for choices	IA
			Intro to Computer Programming		
		4	Biology or Chemistry	See attached for choices	
	MA 281	3	Math Professional Applications	MA 113, 115, or <u>Placement</u>	FA/SP
	(or MA 172)	(4)	(or Calculus B)	(or MA 171)	(FA/SP/SU)
		3	Applied Statistics course	See attached for choices	
			Atmospheric & Eartl	h Science Core 17 credits	
	AES 103/103L	4	Environmental Earth Science + Lab		FA/SP
	AES 104/ 104L	4	Weather & Climate Change + Lab		FA/SP
	AES 209	2	Data Analysis Tools	AES 103, 104, and CS 102+ w/conc	FA/SP
			•		
	AES 301	3	Intro to Earth & Atmos Physics	AES 103, 104, PH 101 or 111, MA 120 or 171	FA/SP
	AES 303	3	Class/Physical Causes Climate	AES 103, 104, PH 101 or 111, MA 120 or 171	SP
	AES 498	1	Research & Prof Dev Capstone	Junior or Senior Standing (61+ credit hours)	FA/SP
			Earth System Science	e Concentration 15 credits	
	AES 305	4	Hydrology	AES 103, 104, MA 120 oR 171, and PH 101 or 111	SP
_	AES 312	2	Principles of Ecology	BYS 120	F. /05
	(or AES 321)	3	(or Pollution Problems)	(AES 103, 104, CH 101 or 121, MA 120+, PH 101 or 111)	FA/SP
	AES 313	3	Geographic Information Systems	AES 103 and CS 102/103/104	FA/SP
	AES 370	3	Introduction to Remote Sensing	AES 103, 104, CS 102/103/104, MA 120+, PH 101 or 111	FA/SP
		3			
	AES 408	3	Python for GIS (or Sci Programming for Earth/Atmos)	AES 313 (AES 201 CS 102/102/104 MA 172 PH 112/115)	SP (EA)
	(or AES 409)	Earth Sur			(FA)
		-		s Choose 17-18 credits: 6 credits must be 400+ level	
				nly one of these courses to count as a concentration elective.	
	12, AES 321, AES 40	8, AES 40	9 - Each of these courses can be used t	to satisfy a concentration requirement or an elective requirem	ent, but not both.
				al Electives	
	E	ective co	urses can be taken from any departme	nt and do not have to be taken in your major or minor.	
			Total = 120+ c	redits to graduate	



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		Charger Foundations Choices			
I. Freshman Composition	Choose 1	se 1 College Writing I & II (EH 101 + 102) Intensive Writing & Studio & Freshman Comp II (EH 101S + 101L & EH 102) Honors English Seminar (EH 105; equivalent to EH 101 & EH 102) Accelerated College Writing (EH 103: equivalent to EH 101 & EH 102)			
II. Fine Arts	Ancient to Medieval Art (ARH 100) Renaissance to Modern Art (ARH 101) World Art (ARH 103)				
II. Humanities (Literature)	Choose 1	Readings Literature/Culture I (EH 207) Readings Literature/Culture II (EH 208) Honors Literature/Culture I (EH 209) Honors Literature/Culture II (EH 210) 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)		
II. Humanities (Non-Literature)	Choose 1	Ancient to Medieval Art (ARH 100) Renaissance to Modern Art (ARH 101) World Art (ARH 103) Introduction to Drawing (ARS 160) Ancient & Medieval Worlds (AMS 229) Public Speaking (CM 113) Intro to Film Studies (FMA 123) Intro to Music Literature (MU 100) Intro to Philosophy (PHL 101)	Intro to Philosophy (PHL 101) Intro to Ethics (PHL 102) Intro to Logic (PHL 103) Science, Tech & Human Values (PHL 150) Theatre Appreciation (TH 122) Intro to Women's Studies (WGS 200) Foreign Language (WLC 101) International Cinema (WLC 204)		
III. Mathematics	Choose 1	Math Professional Applications (MA 120) Calculus A (MA 171 or MA 171S)			
III. Natural Sciences (Lab) Sequence	Choose 1 Physics w/ Calculus I (PH 111/114) and Physics w/ Calculus II (PH 112/115) sequence General Physics I (PH 101/101L) and General Physics II (PH 102/102L)				
IV. History	Choose 1	World History I (HY 103) World History II (HY 104)	United States to 1877 (HY 221) United States Since 1877 (HY 222)		
IV. Social & Behavioral Sciences	Choose 2	World Geography (AES 105) Human Geography (AES 110) Global systems & Cultures (GS 200) Macroeconomics (ECN 142) Microeconomics (ECN 143) American Gov't (PSC 101) Politics & Foreign Govt (PSC 102)	International Relations (PSC 260) General Psychology (PY 101) Life Span Development (PY 201) Intro to Sociology (SOC 100) Analysis of Social Problems (SOC 102) Intro to Criminology (SOC 103)		
C to a la		Students must take one literature and one h			
Stude Area II Sequence	1	ke <u>either</u> a second literature <u>or</u> history/social & behav rature AND History or Social & Behavioral Science	ioral science course to complete a sequence.		
OR					
Area IV Sequence Take either 2 nd History OR 3 rd Social & Behavioral Science AND Fine Arts or Non-Literature Humanities or Literature Humanities					
		Area V. Choices			
Biology or Chemistry	Choose 1	Organismal Biology + Lab (BYS 120/121) Intro to Chemistry + Lab (CH 101/105) General Chemistry I + Lab (CH 121/125)			
Computer Programming	Choose 1	Intro to Computers & Programming (CS 100) Intro to C Programming (CS 102) Intro to Programming Using JAVA (CS 103) Intro to CS Using Python (CS 104)			
Applied Statistics Choos		Elements of Statistics Analysis (MA 281) Probability & Statistics (MA 385) Intro to Social Science Statistics (PSC 300) Psychological Statistics (PY 300) Statistics for Social Sciences (SOC 303)			
		Major Choices			
Concentration Electives	Choose 17 Credits (9 @ 400+)	AES 305 Hydrology* AES 313 Geographic Information Systems AES 312 Pollution Problems AES 352 Synoptic Meteorology* AES 370 Intro to Remote Sensing AES 402 Natural Disasters AES 408 Python for GIS AES 409 Scientific Programming for Earth & Atmos AES 410 Operational Weather Forecasting* AES 410 Operational Weather Forecasting* AES 414 Geospatial Applications AES 420 Intro Atmospheric Chemistry & Air Pollution	AES 441 Atmospheric Thermodynamics & 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 & Atmos AES 495 Directed Study AES 497 Undergrad Internship AES 499 Undergrad Research		

*MA 281can be used to satisfy the Area V Mathematics requirement <u>or</u> the Applied Statistics requirement, but not both. **Strongly recommended.**