

COLLEGE OF SCIENCE

## **Physics**, **BS**

## Applied & Theoretical Physics Concentration 2022-2023 Catalog | catalog.uah.edu

Completed	Course Number	Credits	Course Name	Prerequisites, Corequisites and/or Prerequisites with Concurrency	Semester Usuall Offered
			Charger Foundat		
			Area I: Freshman Composition 3-6 credits		
	EH 101	3	College Writing I	Placement	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
		2	Area II: Humanities and Fine		1
		3	Fine Art	See attached for choices	
		3	Literature	Completion of Area I; See attached for choices	
		3	Non-Literature Humanity	See attached for choices	
		3	Humanities/Fine Arts/Literature Area III: Mathematics and Scie	See attached for choices	
			Mathematics 4 cr		
	MA 171 or MA 171S	4	Calculus A	Placement or MA 113 or MA 115	FA/SP/SU
			Natural Sciences (Lab		17031730
	CH 121/125	3/1	General Chemistry I + Lab	Placement or CH 101	FA
	CH 123/126	3/1	General Chemistry II + Lab	CH 121	SP
Area IV: History and Social & Behavioral Sciences 12 credits					
		3	History	See attached for choices	
		3	Social & Behavioral Science	See attached for choices	
		3	Social & Behavioral Science	See attached for choices	
		3	History/Social & Behavioral Science	See attached for choices	
			Area V: Pre-Profes		1
			For Physics Majors 1		
	FYE 101S	1	Charger Success - Science	REQUIRED	FA
		3	Intro to Computer Programming	See attached for choices	
	MA 172	4	Calculus B	MA 171	FA/SP/SU
	MA 201	4	Calculus C	MA 172	FA/SP/SU
	MA 238	3	Appl Differential Equations	MA 172, 201	
	MA 244	3	Intro to Linear Algebra	MA 120 or 172	
			Major Requirem	ents	
			Physics Core 28 c	redits	
	PH 110	3	Frontiers in Science	PH majors and minors only	FA
	PH 111/114	3/1	General Physics w/ Calculus I + Lab	MA 171	FA/SP/SU
	PH 112/115	3/1	General Physics w/ Calculus II + Lab	PH 111/114, MA 172	FA/SP/SU
	PH 113/116	3/1	General Physics w/ Calculus III + Lab	PH 112/115, MA 201	FA/SP/SU
	PH 251	1	Special Relativity	PH 112, MA 172, prereq w/ conc: PH 113	SP
	PH 301	3	Intermediate Mechanics	PH 111 and (PH 305 or MA 238)	SP
	PH 305	3	Math Methods in Physics	PH 112	SP
	PH 351	3	Introduction to Modern Physics	PH 113 and (MA 238 or 244), prereq w/ conc: PH 251	FA
	PH 499	3	Physics Practicum	Graduating senior	FA
			Applied & Theoretical Concentration Elec	tive Requirements 19 credits	
	PH 310	2	Intermediate Lab I	PH 113 or 116	FA
	PH 311	2	Intermediate Lab II	PH 251, 310	SP
	PH 421	3	Thermal & Statistical Physics	PH 351, PH 301 w/ conc.	SP
	PH 431	3	Interm Electricity & Magnetism I	PH 305 and MA 201, MA 238 w/ conc.	
	PH 432	3	Interm Electricity & Magnetism II	PH 431	SP
	PH 451	3	Intro Quantum Mechanics I	PH 305, 351, and (MA 244 or 238)	FA
	PH 452	3	Intro Quantum Mechanics II	PH 451	SP
			General Electiv		
	E	ective cour	ses can be taken from any department and do		
			Total = 120+ credits to		
			36 of the 120 credits must be taken	at 300-level or higher.	



## **Physics**, **BS** Applied & Theoretical Physics Concentration 2022-2023 Catalog | catalog.uah.edu

		Charger Foundations Choices				
I. Freshman Composition	Choose 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	Choose 1	Ancient to Medieval Art (ARH 100) Renaissance to Modern Art (ARH 101) World Art (ARH 103) Introduction to Drawing (ARS 160) Intro to Film Studies (FMA 123) Intro to Music Literature (MU 100) Theatre Appreciation (TH 122)				
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 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	$\rightarrow$	Calculus A (MA 171 or MA 171S)				
III. Natural Sciences (Lab) Sequence	$\rightarrow$	General Physics w/ Calculus I (PH 111/114) General Physics w/ Calculus II (PH 112/115)				
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)			
	Students	Students must take one literature and one h must also take either a second literature or history o				
Area II Sequence Take a 2 <sup>nd</sup> Literature <u>AND</u> History or Social & Behavioral Science						
<u>OR</u>						
Area IV Sequence	Area IV Sequence Take a 2 <sup>nd</sup> History AND Fine Arts or Non-Literature Humanities or Literature Humanities					
		Area V. Choices				
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)				