## Biology (B.S.) – Pre-Optometry 2022-2023 Academic Catalog, Bachelor of Science – Biology, Pre-Optometry

Academic Core for B.S.

46 Hours

CHRISTIAN STUE		
CSBS 1311	Engaging the Old Testament	
CSBS 1312	Engaging the New Testament	
ENGLISH		
ENGL 1321	Rhetoric & Composition I	
ENGL 1322	Rhetoric & Composition II	
INGL	Literature	
A grade of a "C"	or higher is required in ENGL 1321 and ENGL 1322.	
EXERCISE & SPO	RT SCIENCE	
EXAC	Activity Course	
EXAC	Activity Course	
FINE ARTS - SEL	ECT ONE	
ARTS 1350	Art Appreciation	
COMM 2335	Film Appreciation	
FINA 2330	Exploring the Fine Arts	
MUSI 1340	Music Appreciation	
THEA 2350	Introduction to the Theatre	
ARTS 2354	JRES – SELECT ONE World Art	
EXSS 2353	Lifespan Nutrition	
HIST 1311	History of World Civilizations to 1500	
HIST 1311	History of World Civilizations since 1500	
MUSI 2358	World Music	
PHIL 2315	Introduction to Philosophy	
LAB SCIENCE		
CHEM 1410	General Chemistry I	
PHYS 2411	, General Physics I	
PUBLIC SPEAKIN	G	
COMM 1320	Public Speaking	
MATHEMATICS		
MATH 2303	Statistics	
RESEARCH MET	HODS OR INTERNSHIP	
BIOL 2170	Research Methods	
BIOL 2170	Research Methods	
SOCIAL SCIENO PSYC 1301	CE General Psychology	
	R US GOVERNMENT – SELECT ONE	
HIST 2311 HIST 2312	American History to 1877 American History since 1877	
POLS 2312	State and Federal Government I	
POLS 2310 POLS 2311	State and Federal Government I	
UMHB 1101	Freshman Seminar	
0101101		
	credits	
CHAPEL-1 to 4 ( UMHB 1002	<b>credits</b> Chapel	

UMHB 1005

Fine Arts Experience

## **Biology** – Pre-Optometry

B.S. BIOLOGY I	MAJOR REQUIRED COURSES – PRE-OPTOMETRY	36
BIOL 1090	Freshman Evaluation (Freshman Only)	0
BIOL 1350	Biomolecules, Genes, and Cells	3
BIOL 1150	Biomolecules, Genes, and Cells Lab	1
BIOL 1360	Organisms, Populations, and Ecosystems	3
BIOL 1160	Organisms, Populations, and Ecosystems Lab	1
BIOL 3310	Genetics	3
BIOL 3110	Genetics Lab	1
BIOL 4090	Senior Evaluation	0
BIOL 4194	Capstone Writing	1
BIOL 4295	Capstone Seminar	2
BIOL 4370	Applied Ecology	3
BIOL 4170	Applied Ecology Lab	1
Dhunialan - Flank	h	
Physiology Elect		2
BIOL 2380	Microbiology	3
BIOL 2180	Microbiology Lab	1
BIOL 2340	Human Anatomy & Physiology I	3
BIOL 2140	Human Anatomy & Physiology I Lab	1
BIOL 2341	Human Anatomy & Physiology II	3
BIOL 2141	Human Anatomy & Physiology II Lab	1
BIOL 3375	Human Physiology	3
BIOL 3175	Human Physiology Lab	1
Biology Electives	5	
BIOL	Biology Electives	1
No grado lower the	an a "C" will count toward fulfillment of Biology major require	omonto
No gruue lower th	an a 'C' will count towara juljiliment oj Biology major requir	ements
REQUIRED COUF	ISES FOR PRE-OPTOMETRY	<b>28</b> 4
	SES FOR PRE-OPTOMETRY General Chemistry II	28
REQUIRED COUR CHEM 1420	<b>SES FOR PRE-OPTOMETRY</b> General Chemistry II Organic Chemistry I	<b>28</b> 4
REQUIRED COUF CHEM 1420 CHEM 3410 CHEM 4430	SES FOR PRE-OPTOMETRY General Chemistry II Organic Chemistry I Biochemistry	<b>28</b> 4 4
<b>REQUIRED COUF</b> CHEM 1420 CHEM 3410 CHEM 4430 MATH 1306	<b>SES FOR PRE-OPTOMETRY</b> General Chemistry II Organic Chemistry I	<b>28</b> 4 4 3
REQUIRED COUF CHEM 1420 CHEM 3410 CHEM 4430	SES FOR PRE-OPTOMETRY General Chemistry II Organic Chemistry I Biochemistry College Algebra	<b>28</b> 4 4 4
REQUIRED COUF           CHEM 1420           CHEM 3410           CHEM 4430           MATH 1306           MATH 1320	SES FOR PRE-OPTOMETRY General Chemistry I Organic Chemistry I Biochemistry College Algebra Pre Calculus Calculus	<b>28</b> 4 4 3 3
REQUIRED COUF           CHEM 1420           CHEM 3410           CHEM 4430           MATH 1306           MATH 1320           MATH 1330	SES FOR PRE-OPTOMETRY General Chemistry II Organic Chemistry I Biochemistry College Algebra Pre Calculus	<b>28</b> 4 4 3 3 3 3
REQUIRED COUF           CHEM 1420           CHEM 3410           CHEM 4430           MATH 1306           MATH 1320           MATH 1330           PHYS 2412	SES FOR PRE-OPTOMETRY General Chemistry II Organic Chemistry I Biochemistry College Algebra Pre Calculus Calculus General Physics II	<b>28</b> 4 4 4 3 3 3 4
REQUIRED COUE CHEM 1420 CHEM 3410 CHEM 4430 MATH 1306 MATH 1320 MATH 1330 PHYS 2412 WRIT 3344	SES FOR PRE-OPTOMETRY General Chemistry I Organic Chemistry I Biochemistry College Algebra Pre Calculus Calculus General Physics II Scientific Writing	<b>28</b> 4 4 3 3 4 3 3 4 3
REQUIRED COUF           CHEM 1420           CHEM 3410           CHEM 4430           MATH 1306           MATH 1320           MATH 1330           PHYS 2412	SES FOR PRE-OPTOMETRY General Chemistry I Organic Chemistry I Biochemistry College Algebra Pre Calculus Calculus General Physics II Scientific Writing	<b>28</b> 4 4 4 3 3 3 4
REQUIRED COUE CHEM 1420 CHEM 3410 CHEM 4430 MATH 1306 MATH 1320 MATH 1330 PHYS 2412 WRIT 3344	SES FOR PRE-OPTOMETRY General Chemistry I Organic Chemistry I Biochemistry College Algebra Pre Calculus Calculus General Physics II Scientific Writing	<b>28</b> 4 4 3 3 4 3 3 4 3
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REQUIRED COUR           CHEM 1420           CHEM 3410           CHEM 4430           MATH 1306           MATH 1320           MATH 1330           PHYS 2412           WRIT 3344           .           Upper Level Elect           Total Hours           Academic Core f	SES FOR PRE-OPTOMETRY General Chemistry I Organic Chemistry I Biochemistry College Algebra Pre Calculus Calculus General Physics II Scientific Writing	28 4 4 3 3 4 3 4 3 10
REQUIRED COUR           CHEM 1420           CHEM 3410           CHEM 4430           MATH 1306           MATH 1320           MATH 1330           PHYS 2412           WRIT 3344           .           Upper Level Elect           Total Hours           Academic Core f           B.S. Biology Maje	SES FOR PRE-OPTOMETRY General Chemistry I Dirganic Chemistry I Biochemistry College Algebra Pre Calculus Calculus General Physics II Scientific Writing trives	28 4 4 3 3 4 3 4 3 10
REQUIRED COUR           CHEM 1420           CHEM 4430           MATH 1306           MATH 1320           MATH 1330           PHYS 2412           WRIT 3344           .           Upper Level Elect           Total Hours           Academic Core f           B.S. Biology Maje	SES FOR PRE-OPTOMETRY General Chemistry I Organic Chemistry I Biochemistry College Algebra Pre Calculus Calculus General Physics II Scientific Writing trives for B.S. or Required Courses as for Pre-Optometry	<b>28</b> 4 4 3 3 4 3 4 3 <b>10</b> 46 36
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REQUIRED COUR CHEM 1420 CHEM 3410 CHEM 4430 MATH 1306 MATH 1320 MATH 1330 PHYS 2412 WRIT 3344 Upper Level Elect Total Hours Academic Core f B.S. Biology Majo Required Course Upper Level Elect Total hours required Additional Gradu Minimum Upper Minimum Upper Minimum hours	SES FOR PRE-OPTOMETRY General Chemistry II Organic Chemistry I Biochemistry College Algebra Pre Calculus Calculus General Physics II Scientific Writing Cor B.S. or Required Courses es for Pre-Optometry ctives ured for graduation uation Requirements r Level hours taken at UMHB r Level hours taken at UMHB	28 4 4 3 3 4 3 4 3 10 10 46 36 28 10 120 36 30