

Biology (B.S.) – Pre-Optometry

2025-2026 Academic Catalog, Bachelor of Science – Biology, Pre-Optometry

Academic Core for B.S.

46 Hours

CHRISTIAN STUDIES		6
CSBS 1311	Engaging the Old Testament	3
CSBS 1312	Engaging the New Testament	3
ENGLISH		9
ENGL 1321	Rhetoric & Composition I	3
ENGL 1322	Rhetoric & Composition II	3
ENGL	Literature	3
<i>A grade of a "C" or higher is required in ENGL 1321 and ENGL 1322.</i>		
EXERCISE & SPORT SCIENCE – SELECT TWO DIFFERENT COURSES		2
EXAC	Activity Course	1
EXAC	Activity Course	1
FINE ARTS – SELECT ONE		3
ARTS 1310	Drawing I	3
ARTS 1320	Design	3
ARTS 1350	Art Appreciation	3
ARTS 2360	Ceramics I	3
COMM 2335	Film Appreciation	3
FINA 2330	Exploring the Fine Arts	3
MUSI 1340	Music Appreciation	3
THEA 2350	Theatre Appreciation	3
WORLD CULTURES – SELECT ONE		3
ARTS 2354	World Art	3
EXSS 2353	Lifespan Nutrition	3
GLBL 2310	Cultural Immersion	3
HIST 1311	History of World Civilizations to 1500	3
HIST 1312	History of World Civilizations since 1500	3
HIST 2350	An Introduction to the Politics and Culture of Ancient Greece and Rome	3
HUMA 2355	Foundations of the Humanities	3
MUSI 2358	World Music	3
PHIL 2315	Introduction to Philosophy	3
LAB SCIENCE		8
CHEM 1410	General Chemistry I	4
PHYS 2411	General Physics I	4
PUBLIC SPEAKING		3
COMM 1320	Public Speaking	3
MATHEMATICS		3
MATH 2303	Statistics	3
RESEARCH METHODS OR INTERNSHIP		2
BIOL 2170	Research Methods	1
BIOL 2171	Research Methods	1
SOCIAL SCIENCE		3
PSYC 1301	General Psychology	3
US HISTORY OR US GOVERNMENT – SELECT ONE		3
HIST 2311	American History to 1877	3
HIST 2312	American History since 1877	3
POLS 2305	United States Government	3
POLS 2306	Texas State and Local Government	3
FRESHMAN SEMINAR		1
UMHB 1101	Freshman Seminar	1
CHAPEL – 1 to 4 credits		
UMHB 1002	Chapel	
Fine Arts Experience – 2 to 8 credits		
UMHB 1005	Fine Arts Experience	

Biology – Pre-Optometry

B.S. BIOLOGY MAJOR REQUIRED COURSES – PRE-OPTOMETRY 34-35

BIOL 1350	Biology for Science Majors I	3
BIOL 1150	Biology for Science Majors I Lab	1
BIOL 1360	Biology for Science Majors II	3
BIOL 1160	Biology for Science Majors II Lab	1
BIOL 3310	Genetics	3
BIOL 3110	Genetics Lab	1
BIOL 4090	Senior Evaluation	0
BIOL 4194	Capstone Writing	1
BIOL 4195	Capstone Seminar	1

Integrative Biology - Select one: 3-4

BIOL 4370	Applied Ecology	
BIOL 4170	Applied Ecology Lab	
	or	
BIOL 3340	Immunology	
	or	
BIOL 4355	Adaptation & Phylogeny	
BIOL 4155	Adaptation and Phylogeny Lab	

Physiology Electives

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

BIOL	Biology Electives	1
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No grade lower than a "C" will count toward fulfillment of Biology major requirements

REQUIRED COURSES FOR PRE-OPTOMETRY 26

CHEM 1420	General Chemistry II	4
CHEM 3410	Organic Chemistry I	4
CHEM 4430	Biochemistry	4
MATH 1306	College Algebra	3
MATH 1320	Pre Calculus	3
MATH 1430	Calculus	4
PHYS 2412	General Physics II	4

Electives

UPPER LEVEL ELECTIVES

As needed to reach your minimum 36 UL required hrs.

ELECTIVES

As needed to reach your minimum 120 required hrs.

Total Hours

Academic Core for B.S.	46
B.S. Biology Major Required Courses	34-35
Required Courses for Pre-Optometry	26
Upper Level Electives	
Total hours required for graduation	120

Additional Graduation Requirements

Minimum Upper Level hours	36
Minimum hours taken at UMHB	30
Minimum Upper Level hours taken at UMHB	24
Minimum cumulative GPA	2.0

Biology (B.S.) – Pre-Optometry

2025-2026 Academic Catalog, Bachelor of Science – Biology (B.S.) – Pre-Optometry – DEGREE SEQUENCE

FRESHMAN FALL 15 Hours

BIOL 1350/1150	Biology for Science Majors I	4
CHEM 1410	General Chemistry I	4
MATH 1306	College Algebra	3
ENGL 1321	Rhetoric & Composition I	3
UMHB 1101	Freshman Seminar	1
UMHB 1002	Chapel	0
UMHB 1005	Fine Arts Experience	0

FRESHMAN SPRING 15 Hours

BIOL 1360/1160	Biology for Science Majors II	4
CHEM 1420	General Chemistry II	4
MATH 1320	Pre Calculus	3
ENGL 1322	Rhetoric & Composition II	3
EXAC	Activity Course	1
UMHB 1002	Chapel	0
UMHB 1005	Fine Arts Experience	0

SOPHOMORE FALL 13 Hours

BIOL 2170/2171	Research Methods	2
CHEM 3410	Organic Chemistry I	4
BIOL 2380/2180	Microbiology with Lab	4
PSYC 1301	General Psychology	3
UMHB 1002	Chapel	0
UMHB 1005	Fine Arts Experience	0

SOPHOMORE SPRING 16 Hours

COMM 1320	Public Speaking	3
BIOL 3310/3110	Genetics	4
MATH 2303	Statistics	3
BIOL	Biology Electives	2
	Upper Level Electives	4
UMHB 1002	Chapel	0
UMHB 1005	Fine Arts Experience	0

JUNIOR FALL 16 Hours

BIOL 2340/2140	Human Anatomy & Physiology I with Lab	4
CHEM 4430	Biochemistry	4
PHYS 2411	General Physics I	4
ENGL	Literature	3
EXAC	Activity Course	1
UMHB 1005	Fine Arts Experience	0

JUNIOR SPRING 16 Hours

BIOL 2341/2141	Human Anatomy & Physiology II with Lab	4
PHYS 2412	General Physics II	4
MATH 1430	Calculus I	4
	Upper Level Electives	4
UMHB 1005	Fine Arts Experience	0

SENIOR FALL 15 Hours

	Integrative Biology	4
BIOL 4194	Capstone Writing	1
BIOL 3375/3175	Human Physiology with Lab	4
CSBS 1311	Engaging the Old Testament	3
	World Cultures	3

SENIOR SPRING 16 Hours

BIOL 4090	Senior Evaluation	0
BIOL 4195	Capstone Seminar	1
	Upper Level Electives	3
	Upper Level Electives	3
CSBS 1312	Engaging the New Testament	3
	Fine Arts	3
	US History or Government	3
UMHB 1005	Fine Arts Experience	0

- All courses in BOLD are offered only in the fall or spring semester as indicated.

- Precalculus is a corequisite for PHYS 2411/2412. You must have an ACT math score of at least 24 or a New SAT math score of at least 570 to be able to take this as your first math class at UMHB. Otherwise, you must take MATH 1306 (College Algebra) first. Enrolling in College Algebra requires ACT Math ≥ 22 , New SAT Math ≥ 530 , or Math Review.

Total Minimum Credit Hours: 120