

# Chemistry (B.S.) – Biochemistry & Molecular Biology Emphasis

2025-2025 Academic Catalog, Bachelor of Science – Chemistry, Biochemistry and Molecular Biology Emphasis

## Academic Core for B.S.

**47 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

A grade of a "C" or higher is required in ENGL 1321 and ENGL 1322.

### EXERCISE & SPORT SCIENCE – SELECT TWO DIFFERENT COURSES **2**

EXAC	Activity Course	1
EXAC	Activity Course	1

### FINE ARTS – SELECT ONE **3**

ARTS 1350	Art Appreciation	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
HUMA 2355	Foundations of the Humanities	3
MUSI 2358	World Music	3
PHIL 2315	Introduction to Philosophy	3

### LAB SCIENCE **8**

PHYS 2411	General Physics I	4
PHYS 2412	General Physics II	4

### PUBLIC SPEAKING **3**

COMM 1320	Public Speaking	3
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### MATHEMATICS **4**

MATH 1430	Calculus I	4
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### RESEARCH METHODS OR INTERNSHIP **2**

CHEM 2181	Introduction to Chemical Research-Capstone I	1
CHEM 4181	Chemical Research-Capstone II	1

### SOCIAL SCIENCE – SELECT ONE **3**

BECO 2311	Principles of Macroeconomics	3
PSYC 1301	General Psychology	3
PSYC 2399	Child and Adolescent Development	3
SOCI 1311	Introduction to Sociology	3
SOCW 2311	Introduction to Social Work	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
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### CHAPEL – 1 to 4 credits

UMHB 1002	Chapel	
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### Fine Arts Experience – 2 to 8 credits

UMHB 1005	Fine Arts Experience	
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## Chemistry

**57 Hours**

### B.S. CHEMISTRY MAJOR REQUIRED COURSES – BIOCHEMISTRY **35**

CHEM 1410	General Chemistry I	4
CHEM 1420	General Chemistry II	4
CHEM 2181	Introduction to Chemical Research-Capstone I	-
CHEM 3400	Quantitative Analysis	4
CHEM 3410	Organic Chemistry I	4
CHEM 3420	Organic Chemistry II	4
CHEM 3440	Physical Chemistry I	4
CHEM 4090	Senior Evaluation	0
CHEM 4181	Chemical Research-Capstone II	-
CHEM 4183	Seminar - Capstone III	1
CHEM 4345	Advanced Biochemistry	3
CHEM 4430	Biochemistry	4
CHEM	Chemistry Upper Level Electives	3-4

The hrs. for CHEM2181 and CHEM4181 are already accounted for in the Academic Core

### REQUIRED COURSES FOR BIOCHEM & MOL BIO EMPHASIS **22**

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 2380	Microbiology	3
BIOL 2180	Microbiology Lab	1
BIOL 3310	Genetics	3
BIOL 3340	Immunology	3
BIOL 4305	Cell Biology	3
BIOL 4105	Cell Biology Lab	1

A grade of "C" or higher is required in all Chemistry courses counting toward the major

## Electives

**16 Hours**

### ELECTIVES **16**

You need 16 additional hours to reach your minimum 120 required hrs.

### Total Hours

Academic Core for B.S.	47
B.S. Chemistry Major Required Courses	35
Required Courses for Biochemistry & Molecular Biology Emphasis	22
Electives	16
<b>Total hours required for graduation</b>	<b>120</b>

### 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

# Chemistry (B.S.) – Biochemistry & Molecular Biology Emphasis

2025-2026 Academic Catalog, Bachelor of Science – Chemistry, Biochemistry & Molecular Biology Emphasis – DEGREE SEQUENCE

## **FRESHMAN FALL** **15 Hours**

BIOL 1350	Biology for Science Majors I	3
BIOL 1150	Biology for Science Majors I Lab	1
CHEM 1410	General Chemistry I	4
ENGL 1321	Rhetoric & Composition I	3
	Elective (MATH 1306 recommended)	3
UMHB 1101	First Year Seminar	1
UMHB 1002	Chapel	0
UMHB 1005	Fine Arts Experience	0

## **FRESHMAN SPRING** **15 Hours**

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

## **SOPHOMORE FALL** **16 Hours**

BIOL 2380	Microbiology	3
BIOL 2180	Microbiology Lab	1
CHEM 3410	Organic Chemistry I	4
EXAC	Activity Course	1
CSBS 1311	Engaging the Old Testament	3
PHYS 2411	General Physics I	4
UMHB 1002	Chapel	0
UMHB 1005	Fine Arts Experience	0

## **SOPHOMORE SPRING** **16 Hours**

CHEM 2181	Introduction to Chemical Research-Capstone I	1
CHEM 3420	Organic Chemistry II	4
CSBS 1312	Engaging the New Testament	3
MATH 1430	Calculus I	4
PHYS 2412	General Physics II	4
UMHB 1002	Chapel	0
UMHB 1005	Fine Arts Experience	0

## **JUNIOR FALL** **17 Hours**

BIOL 3310	Genetics	3
CHEM 4430	Biochemistry	4
CHEM 3440	Physical Chemistry I	4
ENGL	Literature	3
	Social Science	3
UMHB 1005	Fine Arts Experience	0

## **JUNIOR SPRING** **15 Hours**

BIOL 3340	Immunology	3
CHEM 4345	Advanced Biochemistry	3
CHEM 4181	Chemical Research-Capstone II	1
	US History or US Government	3
COMM 1320	Public Speaking	3
UMHB 1005	Fine Arts Experience	0

## **SENIOR FALL** **15 Hours**

BIOL 4305	Cell Biology	3
BIOL 4105	Cell Biology Lab	1
CHEM 3400	Quantitative Analysis	4
CHEM 4183	Seminar-Capstone III	1
	Fine Arts	3
CHEM	Chemistry Upper Level Elective	3
UMHB 1005	Fine Arts Experience	0

## **SENIOR SPRING** **13 Hours**

CHEM 4090	Senior Evaluation	0
	World Cultures	3
	Elective	3
	Elective	3
	Elective	4
UMHB 1005	Fine Arts Experience	0

**Total Credit Hours: 120**