

Computer Science (B.S.) – Data Analysis and Visualization

2025-2026 Academic Catalog, Bachelor of Science – Computer Science, Data Analysis and Visualization Specialization

Academic Core for B.S.

48 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 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

	Laboratory Science Courses	8
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PUBLIC SPEAKING 3

COMM 1320	Public Speaking	3
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MATHEMATICS 4

MATH 1430	Calculus I	4
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SOCIAL SCIENCE – SELECT ONE 3

BECO 2311	Principles of Macroeconomics	3
EDUC 2399	Child and Adolescent Development	3
PSYC 1301	General Psychology	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

RESEARCH METHODS OR INTERNSHIP

	Practical Experience – 300 Hrs. of Practical Work	-
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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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Computer Science

48 Hours

B.S. COMPUTER SCIENCE MAJOR REQUIRED COURSES 27

CISC 2315	Discrete Structures of Computer & Eng. Sciences	3
CISC 2330	Introduction to Object-Oriented Programming	3
CISC 3321	Object Oriented Development	3
CISC 3322	Web Development	3
CISC 3323	Algorithms & Data Structures	3
CISC 3325	Telecommunications & Networks	3
CISC 3341	Operating Systems	3
CISC 3360	Computer Organization & Architecture	3
CISC 4327	Database Theory and Application	3
	Practical Experience – 300 Hrs. of Practical Work	-

REQUIRED SUPPORT COURSES 12

CISC 1305	Introduction to Computing	3
CISC 4370	Computer Science & Engineering Ethics Seminar	3
MATH 2320	Linear Algebra	3
WRIT 3344	Scientific Writing	3

DATA ANALYSIS AND VIS. SPECIALIZATION – SELECT THREE 9

CISC 4324	Network Security	3
CISC 4325	Network Security II: Cryptography	3
CISC 4328	Computer Security	3
CISC 4310	Artificial Intelligence	3
CISC 4335	Big Data	3
CISC 4340	Data Analysis and Visualization	3
CISC 4347	Graphics Programming	3

Electives

27 Hours

ELECTIVES 27

You need 27 additional hours to reach your minimum 120 required hrs.

Total Hours

Academic Core for B.S.	45
B.S. Computer Science Major Required Courses	27
Required Support Courses	12
Data Analysis and Visualization Specialization	9
Electives	27
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

Computer Science (B.S.)

2025-2026 Academic Catalog, Bachelor of Science – Computer Science – DEGREE SEQUENCE

FRESHMAN FALL 16 Hours

CISC 1305	Introduction to Computing	3
ENGL 1321	Rhetoric & Composition I	3
CSBS 1311	Engaging the Old Testament	3
	Social Science	3
	Elective (MATH 1320 recommended)	3
UMHB 1101	Freshman Seminar	1
UMHB 1002	Chapel	0
UMHB 1005	Fine Arts Experience	0

FRESHMAN SPRING 16 Hours

ENGL 1322	Rhetoric and Composition II	3
MATH 1430	Calculus I	4
CISC 2330	Introduction to Object Oriented Programming	3
CISC 2315	Discrete Structures of Computer Science	3
COMM 1320	Public Speaking	3
UMHB 1002	Chapel	0
UMHB 1005	Fine Arts Experience	0

SOPHOMORE FALL 16 Hours

MATH 2330	Linear Algebra	3
CSBS 1312	Engaging the New Testament	3
ENGL	Literature	3
	Lab Science	4
	Elective	3
UMHB 1002	Chapel	0
UMHB 1005	Fine Arts Experience	0

SOPHOMORE SPRING 14 Hours

CISC 3325	Telecommunications and Networks	3
	Lab Science	4
	Elective	3
EXAC	Activity Course	1
	US History or US Government	3
UMHB 1002	Chapel	0
UMHB 1005	Fine Arts Experience	0

JUNIOR FALL 15 Hours

CISC 3321	Object Oriented Development	3
CISC 3322	Web Development	3
WRIT 3344	Scientific Writing	3
CISC 3341	Operating Systems	3
	Elective	3
UMHB 1005	Fine Arts Experience	0

JUNIOR SPRING 16 Hours

CISC 3360	Computer Organization and Architecture	3
CISC 3323	Algorithms & Data Structures	3
	Fine Arts	3
EXAC	Activity Course	1
	Elective	3
	World Cultures	3
UMHB 1005	Fine Arts Experience	0

SENIOR FALL 15 Hours

CISC 4327	Database Theory and Application	3
CISC 4370	Computer Science Ethics Seminar	3
CISC	Specialization Elective	3
	Elective	3
	Elective	3
UMHB 1005	Fine Arts Experience	0

SENIOR SPRING 12 Hours

CISC	Specialization Elective	3
CISC	Specialization Elective	3
	Elective	3
	Elective	3
UMHB 1005	Fine Arts Experience	0

Total Credit Hours: 120