

BS MAJOR IN COMPUTER SCIENCE

Requirements for a Bachelor of Science in Computer Science Degree

Code	Title	Hours
General Education Component (https://catalog.una.edu/undergraduate/academic-procedures-requirements/general-education-component)		
Area I. Written Composition		6
EN 111 & EN 112	First-Year Composition I and First Year Composition II	
Area II. Humanities and Fine Arts		12
COM 201	Fundamentals of Speech	
Select three semester hours from the following:		
AR 170	Art Appreciation	
AR 281	Art History Survey I	
AR 282	Art History Survey II	
COM 133	Cinema Appreciation	
EN 255	Creative Writing Appreciation	
MU 222	Music Appreciation	
MU 244	Survey of Music Literature	
TH 210	Theatre Appreciation	
Select three to six semester hours from the following:		
EN 211	Survey of British Literature	
EN 212	Survey of British Literature	
EN 221	American Literature through Whitman	
EN 222	American Literature from Whitman to the Present	
EN 231	Literature of the World I	
EN 232	Literature of the World II	
EN 233		
EN 234		
Select zero to three semester hours from the following:		
FL 100	Introduction to Language	
FR 101	Introductory French	
FR 102	Introductory French	
FR 201	Intermediate French	
FR 202	Intermediate French	
GR 101	Introductory German	
GR 102	Introductory German	
GR 201	Intermediate German	
GR 202	Intermediate German	
PHL 201	Introduction to Philosophy	
PHL 205	Ethics	
PHL 250	Business Ethics	
RE 111	World Religions	
RE 221	Old Testament Introduction	
RE 231	New Testament Introductions	
SP 101	Introductory Spanish	
SP 102	Introductory Spanish	
SP 201	Intermediate Spanish	
SP 202	Intermediate Spanish	
Area III. Natural Sciences and Mathematics		11
Select one from the following:		
MA 112	Pre-Calculus Algebra	
MA 113	Pre-Calculus Trigonometry	
MA 115	Pre-Calculus Algebra and Trigonometry	
MA 125	Calculus I	
MA 126	Calculus II	
MA 227	Calculus III	
MA 237	Linear Algebra	
MA 238	Applied Differential Equations I	
Select at least eight semester hours in a two-course sequence from the following:		
BI 111 & BI 112	Principles of Biology and Principles of Biology	
CH 111 & 111L	General Chemistry and General Chemistry Laboratory	
CH 112 & 112L	General Chemistry and General Chemistry Laboratory	
ES 131 & ES 132	Earth Science/Physical Geology and Historical Geology	
or ES 133	Earth Science/Earth Systems	
GE 111 & GE 112	Physical Geography: Weather and Climate and Physical Geography-Landforms	
PH 251 & PH 252	Technical Physics I and Technical Physics II	
Area IV. History, Social and Behavioral Sciences		12
Select one from the following:		
HI 101 & HI 102	Survey of World Civilization to 1500 and Survey of World Civilization since 1500	
HI 201 & HI 202	United States History to 1877 and United States History since 1877	
Select two from the following:		
EC 251	Principles of Macroeconomics	
EC 252	Principles of Microeconomics	
ED 299	Human Growth and Development	
GE 102	Global Environments and Societies	
GE 260	People, Place, and Culture	
PS 241	United States Government and Politics	
PY 201	General Psychology	
SO 221	Introductory Sociology	
SO 222	Current Social Problems	
Area V. Prescribed Supporting Courses:		
MA 125	Calculus I	
MA 126	Calculus II	
MA 345	Applied Statistics I	
MA 431	Advanced Linear Algebra I	
or MA 237	Linear Algebra	
Select one from the following:		
MA 227	Calculus III	
Additional BS in Computer Science Area III Science		
Major Core Requirements		
CS 155	Computer Science I	3
CS 245	Introduction to Discrete Structures	3

CS 255	Computer Science II	3
CS 310	Computer Organization and Assembly Language Programming	3
CS 311	computer Architecture	3
CS 355	Data Structures and Algorithms	3
CS 410W	Programming Languages	3
CS 420	Operating Systems	3
CS 455	Software Engineering	3

CS Programming Language Electives

Select one from the following:		3
CS 315	Graphical User Interface Programming	
CS 325	Programming for the Web	
CS 335	New Developments in Programming	
CS 390	Software Development in Ada	
CIS 315	Advanced Object-Oriented Programming	

Advanced CS Electives

Select three from the following:		9
CS 360	Computer Networking	
CS 421	Automata Theory and Compiler Construction	
CS 430	Design and Analysis of Algorithms	
CS 447	Theory and Applications of Database Systems ¹	
CIS 445	Advanced Database Management Systems ¹	
CS 470	Artificial Intelligence	

CS General Electives

Select one from the list below in addition to the electives selected above:		3
CS 249	Introduction to Information Security	
CIS 315	Advanced Object-Oriented Programming	
CS 315	Graphical User Interface Programming	
CS 360	Computer Networking	
CS 421	Automata Theory and Compiler Construction	
CS 430	Design and Analysis of Algorithms	
CIS 445	Advanced Database Management Systems ¹	
CS 447	Theory and Applications of Database Systems ¹	
CIS 486	Projects in Information Systems	
CIS 489	Capstone HCI/UX Project	
CS 470	Artificial Intelligence	
CS 325	Programming for the Web	
CS 335	New Developments in Programming	
CS 390	Software Development in Ada	
CS 480	CS Internship	
CS 490	Senior Seminar	

Minor

No minor is required for Computer Science majors

General Electives

General Elective hours, if required, to bring total to 120

Total Hours	83
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¹ NOTE: Only Theory and Applications of Database Systems (CS 447) or Advanced Database Management Systems (CIS 445), but not both, may count for credit toward CS major requirements.