## COMPUTER SCIENCE (ARTIFICIAL INTELLIGENCE) -BACHELOR OF SCIENCE

The Bachelor of Science in Computer Science is the traditional undergraduate degree in Computer Science. It is rigorously focused on educating the student in the fundamental disciplines of Computer Science. It prepares the student for any technological field in industry, and also provides the preparation for graduate studies in Computer Science. It is the main undergraduate degree in the Computer Science department, and should be the choice of a single-major Computer Science student. This degree is accredited by the ABET Computing Accreditation Commission (CAC) under the General and Computer Science Program Criteria (through 9/30/2022).

## **General Requirements Exception**

A grade of at least C- must be earned in each of the courses taken to satisfy the departmental and non-departmental requirements. No course may be counted as satisfying both a departmental and a non-departmental requirement. No course taken to satisfy either a departmental or a non-departmental requirement may be taken S/U.

## Requirements

Students who plan to seek employment at the bachelor level are advised to take one of the concentration area curricula in addition to the general and departmental requirements. An elective course cannot be used for more than two focuses. A course that is required for one concentration cannot be used as an elective course of another one.

Students must complete all University degree requirements, which include: General Education requirements, Viewing a Wider World requirements, and elective credits to total at least 120 credits with 48 credits in courses numbered 300 or above. Developmental coursework will not count towards the degree requirements and/or elective credits, but may be needed in order to take the necessary English and Mathematics coursework.

Prefix	Title	Credits
General Education Rec	juirement	
Area I: Communications	s <sup>1</sup>	
English Composition - L	evel 1 <sup>2</sup>	4
English Composition - L	evel 2	
ENGL 2210G	Professional and Technical Communication Honors	3
Oral Communication		
Choose one from the f	ollowing:	3
COMM 1115G	Introduction to Communication	
COMM 1130G	Public Speaking	
HNRS 2175G	Introduction to Communication Honors	
Area II: Mathematics		
MATH 1511G	Calculus and Analytic Geometry I <sup>3</sup>	4
Area III/IV: Laboratory S	Sciences and Social/Behavioral Sciences	11
Area III: Laboratory	Sciences	
Choose two differen	nt courses from the following:	
ASTR 1115G	Introduction to Astronomy Lecture & Laboratory	

BIOL 2610G & BIOL 2610L	Principles of Biology: Biodiversity, Ecology, and Evolution	
& BIOL 2010L	and Principles of Biology: Biodiversity, Ecology,	
	and Evolution Laboratory	
BIOL 2110G	Principles of Biology: Cellular and Molecular	
& BIOL 2110L	Biology	
	and Principles of Biology: Cellular and	
	Molecular Biology Laboratory	
CHEM 1215G	General Chemistry I Lecture and Laboratory for STEM Majors	
CHEM 1225G	General Chemistry II Lecture and Laboratory for STEM Majors	
GEOG 1110G	Physical Geography	
GEOL 1110G	Physical Geology	
HNRS 2116G	Earth, Time and Life	
PHYS 1230G	Algebra-Based Physics I	
& PHYS 1230L	and Algebra-Based Physics I Lab	
PHYS 1240G	Algebra-Based Physics II	
& PHYS 1240L	and Algebra-Based Physics II Lab	
PHYS 1310G	Calculus -Based Physics I	
& PHYS 1310L	and Calculus -Based Physics I Lab	
PHYS 1320G & PHYS 1320L	Calculus -Based Physics II and Calculus -Based Physics II Lab	
	navioral Sciences (3 credits) <sup>2</sup>	
Area V: Humanities <sup>2</sup>		3
Area VI: Creative and F	ine Arts <sup>2</sup>	3
General Education Elec		0
MATH 1521G	Calculus and Analytic Geometry II <sup>3</sup>	4
or MATH 1521H	Calculus and Analytic Geometry II Honors	
Viewing a Wider Work		6
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Departmental/College	e Requirements	
Departmental/College		4
	Computer Science I	4
C S 172		
C S 172 C S 271	Computer Science I Object Oriented Programming Introduction to Data Structures	4
C S 172 C S 271 C S 272	Computer Science I Object Oriented Programming	4 4
C S 172 C S 271 C S 272 C S 273	Computer Science I Object Oriented Programming Introduction to Data Structures Machine Programming and Organization	4 4 4
C S 172 C S 271 C S 272 C S 273 C S 278	Computer Science I Object Oriented Programming Introduction to Data Structures Machine Programming and Organization Discrete Mathematics for Computer Science	4 4 4 4
C S 172 C S 271 C S 272 C S 273 C S 278 C S 278 C S 370	Computer Science I Object Oriented Programming Introduction to Data Structures Machine Programming and Organization Discrete Mathematics for Computer Science Compilers and Automata Theory	4 4 4 4 4
C S 172 C S 271 C S 272 C S 273 C S 278 C S 370 C S 371	Computer Science I Object Oriented Programming Introduction to Data Structures Machine Programming and Organization Discrete Mathematics for Computer Science Compilers and Automata Theory Software Development	4 4 4 4 4 4
C S 172 C S 271 C S 272 C S 273 C S 278 C S 370 C S 371 C S 372	Computer Science I Object Oriented Programming Introduction to Data Structures Machine Programming and Organization Discrete Mathematics for Computer Science Compilers and Automata Theory Software Development Data Structures and Algorithms	4 4 4 4 4 4 4
C S 172 C S 271 C S 272 C S 273 C S 278 C S 370 C S 371 C S 372	Computer Science I Object Oriented Programming Introduction to Data Structures Machine Programming and Organization Discrete Mathematics for Computer Science Compilers and Automata Theory Software Development Data Structures and Algorithms Computing Ethics and Social Implications of	4 4 4 4 4 4 4
C S 172 C S 271 C S 272 C S 273 C S 278 C S 370 C S 371 C S 372 C S 419	Computer Science I Object Oriented Programming Introduction to Data Structures Machine Programming and Organization Discrete Mathematics for Computer Science Compilers and Automata Theory Software Development Data Structures and Algorithms Computing Ethics and Social Implications of Computing	4 4 4 4 4 4 1
C S 172 C S 271 C S 272 C S 273 C S 278 C S 370 C S 371 C S 372 C S 419 C S 448	Computer Science I Object Oriented Programming Introduction to Data Structures Machine Programming and Organization Discrete Mathematics for Computer Science Compilers and Automata Theory Software Development Data Structures and Algorithms Computing Ethics and Social Implications of Computing Senior Project Senior Thesis Programming Language Structure I	4 4 4 4 4 4 1
C S 172 C S 271 C S 272 C S 273 C S 278 C S 370 C S 371 C S 372 C S 419 C S 448 or C S 449	Computer Science I Object Oriented Programming Introduction to Data Structures Machine Programming and Organization Discrete Mathematics for Computer Science Compilers and Automata Theory Software Development Data Structures and Algorithms Computing Ethics and Social Implications of Computing Senior Project Senior Thesis	4 4 4 4 4 4 1 4
C S 172 C S 271 C S 272 C S 273 C S 278 C S 370 C S 371 C S 371 C S 372 C S 419 C S 448 or C S 449 C S 471 C S 474 C S 482	<ul> <li>Computer Science I</li> <li>Object Oriented Programming</li> <li>Introduction to Data Structures</li> <li>Machine Programming and Organization</li> <li>Discrete Mathematics for Computer Science</li> <li>Compilers and Automata Theory</li> <li>Software Development</li> <li>Data Structures and Algorithms</li> <li>Computing Ethics and Social Implications of Computing</li> <li>Senior Project</li> <li>Senior Thesis</li> <li>Programming Language Structure I</li> <li>Operating Systems I</li> <li>Database Management Systems I</li> </ul>	4 4 4 4 4 4 1 1 4 3
C S 172 C S 271 C S 272 C S 273 C S 278 C S 370 C S 371 C S 372 C S 419 C S 448 or C S 449 C S 471 C S 474	Computer Science I Object Oriented Programming Introduction to Data Structures Machine Programming and Organization Discrete Mathematics for Computer Science Compilers and Automata Theory Software Development Data Structures and Algorithms Computing Ethics and Social Implications of Computing Senior Project Senior Thesis Programming Language Structure I Operating Systems I Database Management Systems I	4 4 4 4 4 1 1 4 3 3 3
C S 172 C S 271 C S 272 C S 273 C S 278 C S 370 C S 371 C S 371 C S 372 C S 419 C S 448 or C S 449 C S 471 C S 474 C S 482	Computer Science I Object Oriented Programming Introduction to Data Structures Machine Programming and Organization Discrete Mathematics for Computer Science Compilers and Automata Theory Software Development Data Structures and Algorithms Computing Ethics and Social Implications of Computing Senior Project Senior Thesis Programming Language Structure I Operating Systems I Database Management Systems I Introduction to Cryptography	4 4 4 4 4 1 1 4 3 3 3 3 3
C S 172 C S 271 C S 272 C S 273 C S 278 C S 370 C S 371 C S 372 C S 419 C S 419 C S 448 or C S 449 C S 471 C S 474 C S 472 Select 6 credits from C S 380 C S 381	Computer Science I         Object Oriented Programming         Introduction to Data Structures         Machine Programming and Organization         Discrete Mathematics for Computer Science         Compilers and Automata Theory         Software Development         Data Structures and Algorithms         Computing Ethics and Social Implications of Computing         Senior Project         Senior Thesis         Programming Language Structure I         Operating Systems I         Database Management Systems I         Introduction to Cryptography         Principles of Virtual Reality	4 4 4 4 4 1 1 4 3 3 3 3 3
C S 172 C S 271 C S 272 C S 273 C S 278 C S 370 C S 371 C S 372 C S 419 C S 419 C S 448 or C S 449 C S 471 C S 474 C S 474 C S 482 Select 6 credits from C S 380	Computer Science I Object Oriented Programming Introduction to Data Structures Machine Programming and Organization Discrete Mathematics for Computer Science Compilers and Automata Theory Software Development Data Structures and Algorithms Computing Ethics and Social Implications of Computing Senior Project Senior Thesis Programming Language Structure I Operating Systems I Database Management Systems I Introduction to Cryptography	4 4 4 4 4 1 1 4 3 3 3 3 3
C S 172 C S 271 C S 272 C S 273 C S 278 C S 370 C S 371 C S 371 C S 372 C S 419 C S 419 C S 419 C S 474 C S 424 Select 6 credits from C S 380 C S 381 C S 382 C S 383	Computer Science I Object Oriented Programming Object Oriented Programming Introduction to Data Structures Machine Programming and Organization Discrete Mathematics for Computer Science Compilers and Automata Theory Software Development Data Structures and Algorithms Computing Ethics and Social Implications of Computing Senior Project Senior Thesis Programming Language Structure I Operating Systems I Database Management Systems I Introduction to Cryptography Principles of Virtual Reality Modern Web Technologies Introduction to Deep Learning	4 4 4 4 4 1 1 4 3 3 3 3 3
C S 172 C S 271 C S 272 C S 273 C S 278 C S 370 C S 371 C S 372 C S 419 C S 419 C S 419 C S 474 C S 474 C S 482 Select 6 credits from C S 380 C S 381 C S 382 C S 383 C S 384	Computer Science I Object Oriented Programming Discrete Mathematics for Computer Science Compilers and Automata Theory Software Development Data Structures and Algorithms Computing Ethics and Social Implications of Computing Senior Project Senior Thesis Programming Language Structure I Operating Systems I Database Management Systems I Introduction to Cryptography Principles of Virtual Reality Modern Web Technologies Introduction to Deep Learning Graph Data Mining	4 4 4 4 4 1 1 4 3 3 3 3 3
C S 172 C S 271 C S 272 C S 273 C S 278 C S 370 C S 371 C S 372 C S 419 C S 419 C S 448 or C S 449 C S 471 C S 474 C S 474 C S 482 Select 6 credits from C S 380 C S 381 C S 382 C S 383 C S 384 C S 384 C S 473	Computer Science I Object Oriented Programming Discrete Mathematics for Computer Science Compilers and Automata Theory Software Development Data Structures and Algorithms Computing Ethics and Social Implications of Computing Senior Project Senior Thesis Programming Language Structure I Operating Systems I Database Management Systems I Introduction to Cryptography Principles of Virtual Reality Modern Web Technologies Introduction to Deep Learning Graph Data Mining Architectural Concepts I	4 4 4 4 4 1 1 4 3 3 3 3 3
C S 172 C S 271 C S 272 C S 273 C S 278 C S 370 C S 371 C S 372 C S 419 C S 419 C S 448 or C S 449 C S 471 C S 474 C S 474 C S 482 Select 6 credits from C S 380 C S 381 C S 381 C S 382 C S 383 C S 384 C S 384 C S 473 C S 475	Computer Science I Object Oriented Programming Object Oriented Programming Introduction to Data Structures Machine Programming and Organization Discrete Mathematics for Computer Science Compilers and Automata Theory Software Development Data Structures and Algorithms Computing Ethics and Social Implications of Computing Senior Project Senior Thesis Programming Language Structure I Operating Systems I Database Management Systems I Introduction to Cryptography Principles of Virtual Reality Modern Web Technologies Introduction to Deep Learning Graph Data Mining Architectural Concepts I Artificial Intelligence I	4 4 4 4 4 1 1 4 3 3 3 3 3
C S 172 C S 271 C S 272 C S 273 C S 278 C S 370 C S 371 C S 372 C S 419 C S 419 C S 419 C S 419 C S 448 or C S 449 C S 471 C S 474 C S 482 Select 6 credits from C S 380 C S 381 C S 382 C S 383 C S 384 C S 384 C S 475 C S 476	Computer Science I Object Oriented Programming Object Oriented Programming Introduction to Data Structures Machine Programming and Organization Discrete Mathematics for Computer Science Compilers and Automata Theory Software Development Data Structures and Algorithms Computing Ethics and Social Implications of Computing Senior Project Senior Thesis Programming Language Structure I Operating Systems I Database Management Systems I Database Management Systems I Introduction to Cryptography Principles of Virtual Reality Modern Web Technologies Introduction to Deep Learning Graph Data Mining Architectural Concepts I Artificial Intelligence I Computer Graphics I	4 4 4 4 4 1 1 4 3 3 3 3 3
C S 172 C S 271 C S 272 C S 273 C S 278 C S 370 C S 370 C S 371 C S 372 C S 419 C S 419 C S 419 C S 419 C S 474 C S 482 Select 6 credits from C S 380 C S 381 C S 381 C S 382 C S 383 C S 383 C S 384 C S 475 C S 476 C S 477	Computer Science IObject Oriented ProgrammingIntroduction to Data StructuresMachine Programming and OrganizationDiscrete Mathematics for Computer ScienceCompilers and Automata TheorySoftware DevelopmentData Structures and AlgorithmsComputing Ethics and Social Implications of ComputingSenior ProjectSenior ThesisProgramming Language Structure IOperating Systems IDatabase Management Systems IIntroduction to CryptographyPrinciples of Virtual RealityModern Web TechnologiesIntroduction to Deep LearningGraph Data MiningArtificial Intelligence IComputer Graphics IDigital Game Design	4 4 4 4 4 1 1 4 3 3 3 3 3
C S 172 C S 271 C S 272 C S 273 C S 278 C S 370 C S 370 C S 371 C S 372 C S 419 C S 420 C S 410 C S 420 C S 380 C S 381 C S 381 C S 382 C S 383 C S 383 C S 384 C S 475 C S 476 C S 477 C S 478 C S 478	Computer Science I Object Oriented Programming Object Oriented Programming Introduction to Data Structures Machine Programming and Organization Discrete Mathematics for Computer Science Compilers and Automata Theory Software Development Data Structures and Algorithms Computing Ethics and Social Implications of Computing Senior Project Senior Thesis Programming Language Structure I Operating Systems I Database Management Systems I Database Management Systems I Introduction to Cryptography Principles of Virtual Reality Modern Web Technologies Introduction to Deep Learning Graph Data Mining Architectural Concepts I Artificial Intelligence I Computer Graphics I Digital Game Design Computer Security	4 4 4 4 4 1 1 4 3 3 3 3 3
C S 172 C S 271 C S 272 C S 273 C S 278 C S 370 C S 370 C S 371 C S 372 C S 419 C S 419 C S 419 C S 419 C S 474 C S 482 Select 6 credits from C S 380 C S 381 C S 381 C S 382 C S 383 C S 383 C S 384 C S 475 C S 476 C S 477	Computer Science IObject Oriented ProgrammingIntroduction to Data StructuresMachine Programming and OrganizationDiscrete Mathematics for Computer ScienceCompilers and Automata TheorySoftware DevelopmentData Structures and AlgorithmsComputing Ethics and Social Implications of ComputingSenior ProjectSenior ThesisProgramming Language Structure IOperating Systems IDatabase Management Systems IIntroduction to CryptographyPrinciples of Virtual RealityModern Web TechnologiesIntroduction to Deep LearningGraph Data MiningArtificial Intelligence IComputer Graphics IDigital Game Design	4 4 4 4 4 1 1 4 3 3 3 3 3

C S 488

**Total Credits** 

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C S 481 C S 484	Visual Programming	
C S 484	Computer Networks I Human-Centered Computing	
C S 485	Bioinformatics	
C S 480	Applied Machine Learning I	
C S 487	Introduction to Data Mining	
C S 489	Bioinformatics Programming	
C S 491	Parallel Programming	
C S 496	Cloud and Edge Computing	
	equirements (in addition to Gen.Ed/VWW)	
MATH 2415	Introduction to Linear Algebra	3
or MATH 4230	Applied Linear Algebra	0
Select one from the fo		3
MATH 3110	Introduction to Modern Algebra	
MATH 3120	Introduction to Analysis	
MATH 3140	Introduction to Numerical Methods	
MATH 3160	Introduction to Ordinary Differential Equations	
MATH 4320	Logic and Set Theory	
MATH 4330	Elementary Number Theory	
Select one from the fo		3
A ST 311	Statistical Applications	
STAT 3110	Statistics for Engineers and Scientists	
STAT 4210	Probability: Theory and Applications	
Lab Science Courses		
Select one from the fo	ollowing: <sup>5</sup>	4
BIOL 2610G	Principles of Biology: Biodiversity, Ecology, and	
& BIOL 2610L	Evolution and Principles of Biology: Biodiversity, Ecology, and Evolution Laboratory	
BIOL 2110G & BIOL 2110L	Principles of Biology: Cellular and Molecular Biology and Principles of Biology: Cellular and Molecular Biology Laboratory	
CHEM 1215G	General Chemistry I Lecture and Laboratory for STEM Majors	
CHEM 1225G	General Chemistry II Lecture and Laboratory for STEM Majors	
PHYS 1230G & PHYS 1230L	Algebra-Based Physics I and Algebra-Based Physics I Lab	
PHYS 1240G & PHYS 1240L	Algebra-Based Physics II and Algebra-Based Physics II Lab	
PHYS 2110 & 2110L	Mechanics and Experimental Mechanics	
PHYS 2140 & 2140L	Electricity and Magnetism and Electricity & Magnetism Laboratory	
PHYS 1310G & PHYS 1310L	Calculus -Based Physics I and Calculus -Based Physics I Lab	
PHYS 1320G & PHYS 1320L	Calculus -Based Physics II and Calculus -Based Physics II Lab	
s 11		
Second Language Re		
Electives, to bring the	quirements: (not required) e total credits to 120 <sup>7</sup> ints for the concentration in Artificial Intelligence are	14
Electives, to bring the The specific requireme as follows:	<b>total credits to 120</b> <sup>7</sup> Ints for the concentration in Artificial Intelligence are	14
Electives, to bring the The specific requireme as follows: Select 3-4 credits t	total credits to 120 <sup>7</sup> ints for the concentration in Artificial Intelligence are from the following:	14
Electives, to bring the The specific requireme as follows: Select 3-4 credits 1 C S 343	total credits to 120 <sup>7</sup> ents for the concentration in Artificial Intelligence are from the following: Algorithm Design & Implementation	14
Electives, to bring the The specific requirement as follows: Select 3-4 credits for C S 343 C S 372	total credits to 120 <sup>7</sup> ints for the concentration in Artificial Intelligence are from the following: Algorithm Design & Implementation Data Structures and Algorithms	14
Electives, to bring the The specific requireme as follows: Select 3-4 credits 1 C S 343	total credits to 120 <sup>7</sup> ints for the concentration in Artificial Intelligence are from the following: Algorithm Design & Implementation Data Structures and Algorithms	14

1		nis
	rea I transfer credits may sometimes complete the	
	Education (https://catalogs.nmsu.edu/nmsu/ge	
education-viewi	ng-wider-world/) section of the catalog for a full l	ist of
2	alculus and Analytic Geometry I and MATH 15210	G
	nalytic Geometry II are required for the degree	
	ay need to take any prerequisites needed to enter	
4	r MATH 1521G first. g a Wider World (https://catalogs.nmsu.edu/nmsi	1/
-	on-viewing-wider-world/#viewingawiderworldtext	
section of the c	atalog for a full list of courses.	
	tisfy only one requirement.	
, Must be taken t	or 3 credits to count as a course. nay vary based on prerequisites, dual credit, AP c	radit
	and/or minor coursework. The amount indicated	
-	is list is the amount needed to bring the total to 1	
credits and may	appear in variable form based on the degree. Ho	wever
-	nd up needing to complete more or less on a case	-
case basis and their advisor.	students should discuss elective requirements w	ith
their auvisor.		
tsannu2 A	ed Plan of Study for Student	c
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	umes student placement in MATH 1511G and contents and order of this roadmap may vary	
	al student placement in mathematics and english	n. It
is only a suggeste	ed plan of study for students and is not intended a	as a
contract. Course a	availability may vary from fall to spring semester	
contract. Course a	· · · · · · · · · · · · · · · · · · ·	
contract. Course a	availability may vary from fall to spring semester	
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contract. Course a may be subject to Freshman C S 172 C S 271	availability may vary from fall to spring semester modification or change. Computer Science I Object Oriented Programming	and Credits 4 4
contract. Course a may be subject to Freshman C S 172 C S 271 C S 273	availability may vary from fall to spring semester modification or change. Computer Science I Object Oriented Programming Machine Programming and Organization	and Credits 4 4 4
contract. Course a may be subject to Freshman C S 172 C S 271 C S 273 ENGL 1110G	availability may vary from fall to spring semester modification or change. Computer Science I Object Oriented Programming Machine Programming and Organization Composition I	Credits 4 4 4 4
contract. Course a may be subject to Freshman C S 172 C S 271 C S 273 ENGL 1110G MATH 1511G	availability may vary from fall to spring semester modification or change. Computer Science I Object Oriented Programming Machine Programming and Organization Composition I Calculus and Analytic Geometry I <sup>1</sup>	and Credits 4 4 4 4 4 4
contract. Course a may be subject to Freshman C S 172 C S 271 C S 273	availability may vary from fall to spring semester modification or change. Computer Science I Object Oriented Programming Machine Programming and Organization Composition I	Credits 4 4 4 4
contract. Course a may be subject to Freshman C S 172 C S 271 C S 273 ENGL 1110G MATH 1511G MATH 1521G or MATH 1521H	availability may vary from fall to spring semester modification or change. Computer Science I Object Oriented Programming Machine Programming and Organization Composition I Calculus and Analytic Geometry I <sup>1</sup> Calculus and Analytic Geometry II or Calculus and Analytic Geometry II	and Credits 4 4 4 4 4 4
contract. Course a may be subject to Freshman C S 172 C S 271 C S 273 ENGL 1110G MATH 1511G MATH 1521G or MATH 1521H Area IV: Social/ Beh	availability may vary from fall to spring semester modification or change. Computer Science I Object Oriented Programming Machine Programming and Organization Composition I Calculus and Analytic Geometry I <sup>1</sup> Calculus and Analytic Geometry II or Calculus and Analytic Geometry II or Calculus and Analytic Geometry II Honors avioral Sciences Course <sup>2</sup>	Credits 4 4 4 4 4 4 4 4
contract. Course a may be subject to Freshman C S 172 C S 271 C S 273 ENGL 1110G MATH 1511G MATH 1521G or MATH 1521H Area IV: Social/ Beh	availability may vary from fall to spring semester modification or change. Computer Science I Object Oriented Programming Machine Programming and Organization Composition I Calculus and Analytic Geometry I <sup>1</sup> Calculus and Analytic Geometry II or Calculus and Analytic Geometry II or Calculus and Analytic Geometry II Honors avioral Sciences Course <sup>2</sup>	Credits 4 4 4 4 4 4 3
contract. Course a may be subject to Freshman C S 172 C S 271 C S 273 ENGL 1110G MATH 1511G MATH 1521G or MATH 1521H Area IV: Social/ Beh. Area V: Humanities I	availability may vary from fall to spring semester modification or change. Computer Science I Object Oriented Programming Machine Programming and Organization Composition I Calculus and Analytic Geometry I <sup>1</sup> Calculus and Analytic Geometry II or Calculus and Analytic Geometry II or Calculus and Analytic Geometry II Honors avioral Sciences Course <sup>2</sup> Course <sup>2</sup>	and Credits 4 4 4 4 4 4 3 3 3
contract. Course a may be subject to Freshman C S 172 C S 271 C S 273 ENGL 1110G MATH 1511G MATH 1521G or MATH 1521H Area IV: Social/ Beh Area V: Humanities ( Sophomore C S 272	availability may vary from fall to spring semester modification or change. Computer Science I Object Oriented Programming Machine Programming and Organization Composition I Calculus and Analytic Geometry I <sup>1</sup> Calculus and Analytic Geometry II or Calculus and Analytic Geometry II Calculus and Analytic Geometry II or Calculus and Analytic Geometry II or Calculus and Analytic Geometry II Calculus and Analytic Geometry II or Calculus and Analytic Geometr	and Credits 4 4 4 4 4 4 3 3 3
contract. Course a may be subject to Freshman C S 172 C S 271 C S 273 ENGL 1110G MATH 1511G MATH 1521G or MATH 1521H Area IV: Social/ Beh- Area V: Humanities ( Sophomore C S 272 C S 278	availability may vary from fall to spring semester modification or change. Computer Science I Object Oriented Programming Machine Programming and Organization Composition I Calculus and Analytic Geometry I <sup>1</sup> Calculus and Analytic Geometry II or Calculus and Analytic Geometry II or Calculus and Analytic Geometry II Calculus and Analytic Geometry II Calculus and Analytic Geometry II Calculus and Analytic Geometry II Calculus and Analytic Geometry II or Calculus and Analytic Geometry II Calculus and Analytic Geometry II Calculus and Analytic Geometry II Calculus and Analytic Geometry II Calculus and Analytic Geometry II or Calculus and Analytic Geometry II Calculus and Analytic Geometry II I Honors Course <sup>2</sup> Credits	and Credits 4 4 4 4 4 4 3 3 3 30 30 4 4
contract. Course a may be subject to Freshman C S 172 C S 271 C S 273 ENGL 1110G MATH 1511G MATH 1521G or MATH 1521H Area IV: Social/ Beha Area V: Humanities D Sophomore C S 272 C S 278 C S 370	availability may vary from fall to spring semester modification or change. Computer Science I Object Oriented Programming Machine Programming and Organization Composition I Calculus and Analytic Geometry I <sup>1</sup> Calculus and Analytic Geometry II or Calculus and Analytic Geometry II or Calculus and Analytic Geometry II Calculus and Analytic Geometry II or Calculus and Analytic Geometry II Calculus and Analytic Geometry II or Calculus and Analytic Geometry II Calculus and Analytic Geometry II Calculus and Analytic Geometry II or Calculus and Analytic Geometry II Calculus and Analytic Geometry II Calculus and Analytic Geometry II or Calculus and Analytic Geometry II Calculus and Analytic Geometry II I Honors avioral Sciences Course <sup>2</sup> Course <sup>2</sup>	and Credits 4 4 4 4 4 4 4 3 3 3 30 4 4 4 4
contract. Course a may be subject to Freshman C S 172 C S 271 C S 273 ENGL 1110G MATH 1511G MATH 1521G or MATH 1521H Area IV: Social/ Beh Area V: Humanities Sophomore C S 272 C S 278 C S 370 C S 372	availability may vary from fall to spring semester modification or change. Computer Science I Object Oriented Programming Machine Programming and Organization Composition I Calculus and Analytic Geometry I <sup>1</sup> Calculus and Analytic Geometry II or Calculus and Analytic Geometry II or Calculus and Analytic Geometry II Honors avioral Sciences Course <sup>2</sup> Course <sup>2</sup> Credits Introduction to Data Structures Discrete Mathematics for Computer Science Compilers and Automata Theory Data Structures and Algorithms	and Credits 4 4 4 4 4 4 4 3 3 3 0 30 4 4 4 4 4 4
contract. Course a may be subject to Freshman C S 172 C S 271 C S 273 ENGL 1110G MATH 1511G MATH 1521G or MATH 1521H Area IV: Social/ Beh Area V: Humanities I Sophomore C S 272 C S 278 C S 370 C S 372 COMM 1115G	Availability may vary from fall to spring semester modification or change. Computer Science I Object Oriented Programming Machine Programming and Organization Composition I Calculus and Analytic Geometry I or Calculus and Analytic Geometry II or Calculus and Analytic Ge	and Credits 4 4 4 4 4 4 3 3 3 30 4 4 4 4 4 3 30 30
contract. Course a may be subject to Freshman C S 172 C S 271 C S 273 ENGL 1110G MATH 1511G MATH 1521G or MATH 1521H Area IV: Social/ Beh Area V: Humanities I Sophomore C S 272 C S 278 C S 370 C S 372 COMM 1115G	availability may vary from fall to spring semester modification or change. Computer Science I Object Oriented Programming Machine Programming and Organization Composition I Calculus and Analytic Geometry I <sup>1</sup> Calculus and Analytic Geometry II or Calculus and Analytic Geometry II or Calculus and Analytic Geometry II Honors avioral Sciences Course <sup>2</sup> Course <sup>2</sup> Credits Introduction to Data Structures Discrete Mathematics for Computer Science Compilers and Automata Theory Data Structures and Algorithms	and Credits 4 4 4 4 4 4 4 3 3 3 0 30 4 4 4 4 4 4
contract. Course a may be subject to Freshman C S 172 C S 271 C S 273 ENGL 1110G MATH 1511G MATH 1521G or MATH 1521H Area IV: Social/ Beh: Area V: Humanities I Sophomore C S 272 C S 278 C S 370 C S 372 COMM 1115G ENGL 2210G	Availability may vary from fall to spring semester modification or change. Computer Science I Object Oriented Programming Machine Programming and Organization Composition I Calculus and Analytic Geometry I or Calculus and Analytic Geometry II or Calculus and Analytic Ge	and Credits 4 4 4 4 4 4 3 3 3 30 4 4 4 4 4 3 30 30
Contract. Course a may be subject to Freshman C S 172 C S 271 C S 273 ENGL 1110G MATH 1511G MATH 1521G or MATH 1521H Area IV: Social/ Beh Area V: Humanities I Sophomore C S 272 C S 278 C S 370 C S 372 COMM 1115G ENGL 2210G MATH 2415 or MATH 4230	Availability may vary from fall to spring semester modification or change. Computer Science I Object Oriented Programming Machine Programming and Organization Composition I Calculus and Analytic Geometry I or Calculus and Analytic Geometry II or Calculus and Analytic Geometry II Discrete Mathematics for Computer Science Compilers and Automata Theory Data Structures and Algorithms Introduction to Communication Honors Introduction to Linear Algebra or Applied Linear Algebra	and Credits 4 4 4 4 4 3 3 30 4 4 4 4 4 4 3 3 3
Contract. Course a may be subject to Freshman C S 172 C S 271 C S 273 ENGL 1110G MATH 1511G MATH 1521G or MATH 1521H Area IV: Social/ Beh Area V: Humanities I Sophomore C S 272 C S 278 C S 370 C S 372 COMM 1115G ENGL 2210G MATH 2415 or MATH 4230	availability may vary from fall to spring semester modification or change. Computer Science I Object Oriented Programming Machine Programming and Organization Composition I Calculus and Analytic Geometry I <sup>1</sup> Calculus and Analytic Geometry II or Calculus and Analytic Geometry II Discrete Mathematics for Computer Science Compilers and Automata Theory Data Structures and Algorithms Introduction to Communication Professional and Technical Communication Honors Introduction to Linear Algebra or Applied Linear Algebra d Fine Arts <sup>2</sup>	and Credits 4 4 4 4 4 3 3 30 30 4 4 4 4 4 3 3 3 3 3
contract. Course a may be subject to Freshman C S 172 C S 271 C S 273 ENGL 1110G MATH 1511G MATH 1521G or MATH 1521H Area IV: Social/ Beh Area V: Humanities I Sophomore C S 272 C S 278 C S 370 C S 372 COMM 1115G ENGL 2210G MATH 2415 or MATH 4230 Area VI: Creative and	availability may vary from fall to spring semester modification or change. Computer Science I Object Oriented Programming Machine Programming and Organization Composition I Calculus and Analytic Geometry I <sup>1</sup> Calculus and Analytic Geometry II or Calculus and Analytic Geometry II Discrete Mathematics for Computer Science Compilers and Automata Theory Data Structures and Algorithms Introduction to Communication Professional and Technical Communication Honors Introduction to Linear Algebra or Applied Linear Algebra d Fine Arts <sup>2</sup>	and Credits 4 4 4 4 4 3 3 3 3 0 4 4 4 4 4 4 3 3 3 3
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Introduction to Data Mining

120

Elective credits if needed for financial aid requirements <sup>3</sup>		
	Credits	31-34
Junior		
C S 371	Software Development	4
C S 471	Programming Language Structure I	3
C S 482	Database Management Systems I	3
Computer Science 400-level Elective <sup>4</sup>		
MATH elective (upper division) <sup>5</sup>		Э
Lab Science Elective <sup>6</sup>		4
Lab Science Elective <sup>6</sup>		4
Viewing a Wider World <sup>7</sup>		3
Viewing a Wider W	orld <sup>7</sup>	Э
Elective credits if r	needed for financial aid requirements <sup>3</sup>	Э
	Credits	33
Senior		
C S 448	Senior Project	4
or C S 449	or Senior Thesis	
C S 419	Computing Ethics and Social Implications of Computing	1
C S 474	Operating Systems I	3
Lab Science Elective <sup>6</sup>		
Computer Science 400-level Elective <sup>4</sup>		
Upper division electives to bring total upper division to 48 $^3$		4
Electives as needed to meet minimum credit requirements <sup>3</sup>		
	Credits	26
	Total Credits	120-123

<sup>1</sup> MATH 1511G Calculus and Analytic Geometry I is required for the degree but students may need to take any prerequisites needed to enter MATH 1511G first.

- <sup>2</sup> See the General Education (https://catalogs.nmsu.edu/nmsu/generaleducation-viewing-wider-world/) section of the catalog for a full list of courses
- <sup>3</sup> Students who plan to graduate with a concentration need to complete the specific requirements for the chosen concentration. *Elective credit may vary based on prerequisites, dual credit, AP credit, double majors, and/or minor coursework. The amount indicated in the requirements list is the amount needed to bring the total to 120 credits and may appear in variable form based on the degree. However students may end up needing to complete more or less on a case-by-case basis and students should discuss elective requirements with their advisor.*
- <sup>4</sup> See list of Computer Science electives (p. 1) in Degree Requirement Section.

## <sup>5</sup> Math Electives:

- MATH 3110 Introduction to Modern Algebra
- MATH 3120 Introduction to Analysis
- MATH 3140 Introduction to Numerical Methods
- MATH 3160 Introduction to Ordinary Differential Equations
- MATH 4320 Logic and Set Theory
- MATH 4330 Elementary Number Theory
- <sup>6</sup> See list of Lab Science (p. 1) courses in the Degree Requirement Section.
- <sup>7</sup> See the Viewing a Wider World (https://catalogs.nmsu.edu/nmsu/ general-education-viewing-wider-world/#viewingawiderworldtext) section of the catalog for a full list of courses

Students planning to undertake graduate work in computer science are encouraged to consult with their advisor regarding the possibility of

taking other computer science electives to satisfy their departmental requirements.