B.S. IN COMPUTER SCIENCE

B.S. IN COMPUTER SCIENCE

College of the Sciences and Mathematics

Curriculum

Code	Title	Credits
catalog.wcupa.edu/	ATION REQUIREMENTS (http:// undergraduate/general-education-	
requirements/) Academic Foundati		
		4
First Year Experienc	•	
English Composition	*	6-7 3-4
Mathematics require MAT 151		3-4
	Introduction to Discrete Mathematics	2
Interdisciplinary requ		3
Diverse Communitie	es requirement	3
Ethics requirement	Dominum and CSC 201	3
•	Requirement CSC 301	
Distributed Discipl	inary Foundations	(0
Science requirement	C. 11	6-8
Choose from the BIO 110	<u> </u>	
CHE 103	General Biology I ¹	
& CRL 103	General Chemistry I and General Chemistry I Lab ¹	
ESS 101	Introduction to Geology ¹	
PHY 130	General Physics I ¹	
or PHY 170	-	
Behavioral & Social		6
	*	6
Humanities requiren Arts requirement	lent	3
ADDITIONAL BA	ACCALAUDEATE	5
	S (http://catalog.wcupa.edu/	
	eral-education-requirements/)	
University Requirer	-	
Writing Emphasis re		9
ENG 368	Business and Organizational Writing ¹	
or ENG 371	Technical Writing	
Speaking Emphasis	0	9
SPK 208	Public Speaking ¹	
or SPK 230	Business and Professional Speech	
	Communication	
Degree Requiremen	nts	
Capstone requirement	at	1-15
MAJOR REQUIR	EMENTS	
Mathematics ¹		
MAT 121	Introduction to Statistics I	3
MAT 151	Introduction to Discrete Mathematics	3
MAT 161	Calculus I	4
STA 200	Introduction to Statistics II	3
or MAT 162	Calculus II	
Communications ¹		
SPK 208	Public Speaking	3
or SPK 230	Business and Professional Speech Communication	
ENG 368	Business and Organizational Writing	3
or ENG 371	Technical Writing	
Computer Science		
CSC 141	Computer Science I	3

CSC 142	Computer Science II	3
CSC 220	Foundations of Computer Science	3
CSC 231	Computer Systems	3
CSC 240	Computer Science III	3
CSC 241	Data Structures & Algorithms	3
CSC 301	Computer Security & Ethics	3
CSC 345	Programming Language Concepts/ Paradigms	3
Complex Large-Sca	le Systems Courses ¹	
Select one of the foll		3
CSC 416	Design/Construction Compilers	
CSC 417	User Interfaces	
CSC 418	Modern Web Applications Using Server-Side Technologies	
CSC 466	Distributed and Parallel Computing	
CSC 467	Big Data Engineering	
CSC 468	Introduction to Cloud Computing	
CSC 476	Game Development	
CSC 496	Topics in Complex Large-Scale Systems	
Capstone Requirem	ent ¹	
CSC 402	Software Engineering ²	3
Computer Science 3	800-/400-Level Electives ¹	
	dits of 400-level courses is required. 3 it internship (CSC 400) can be used	18
Total Minimum Cro	edits Required	120

Accelerated B.S. in Computer Science to M.S. in Computer Science Program

Students may substitute up to 4 M.S. Computer Science electives for B.S. Computer Science electives, excluding the combinations noted.

Code	Title	Credits
Electives		
Select up to 4 gradua undergraduate electiv	te Computer Science electives to satisfy re requirements: ³	
CSC 525	Operating Systems	
CSC 535	Networks and Data Communication	
CSC 545	Database Systems Concepts	
CSC 555	Software Engineering	
CSC 565	Compiler Design	
CSC 575	Artificial Intelligence	
CSC 576	Data Science	
CSC 577	Natural Language Processing	
CSC 581	Topics in Computer Science	
CSC 582	Topics in Information Systems	
CSC 583	Topics in Computer Security	
CSC 584	Topics in Web Technology	
CSC 585	User Interfaces	
CSC 586	System Administration and Security	
CSC 587	Modern Web Applications Using Server-Side Technologies	
CSC 588	Wireless Programming and Security	
CSC 600	Advanced Seminar	
CSC 603	Advanced Seminar in Security	
CSC 604	Advanced Seminar Web Technology	
CSC 605	Internship in Computer Science	
CSC 610	Independent Research	

Note: Students may NOT use the following combinations:
Operating Systems: CSC 525 and CSC 331
Networking: CSC 535 and CSC 335
Database: CSC 545 and CSC 321
Software Engineering: CSC 555 and CSC 402
Compilers: CSC 565 and CSC 416
Artificial Intelligence: CSC 575 and CSC 481
User Interfaces: CSC 585 and CSC 417
Server-Side Technologies: CSC 587 and CSC 418
Internship: CSC 605 and CSC 400

 ¹ A grade of C- or better is required in these courses.
 ² This course fulfills the Capstone requirement.
 ³ Additional CSC 500-600 level courses will be considered under advisement.

Sample Course Plan

To track their individual degree progress, students are advised to access their Degree Progress Report (DPR) via myWCU regularly. For more information, visit wcupa.edu/DegreeProgressReport (http://wcupa.edu/ degreeprogressreport/).

The following is a sample suggested course sequence for this program; course offerings and availability are not guaranteed. Students should consult their academic advisor with any questions.

B.S. in Computer Science

Course Year One Fall	Title	Credits
CSC 141	Computer Science I	3
MAT 131	Precalculus	3
WRT 120 or WRT 123	Effective Writing I ¹ or Effective Writing with Supplemental Writing Workshop	3-4
Science Gen	Ed	
Complete one	e of the following:	
BIO 110 or CHE 103 and CRL 103 or ESS 101 or PHY 130 or PHY 140	General Biology I or General Chemistry I <i>and</i> General Chemistry I Lab or Introduction to Geology or General Physics I or General Physics II	3-4
FYE 100X	First Year Experience	4
	Credits	16-18
Spring		
CSC 142	Computer Science II	3
MAT 151	Introduction to Discrete Mathematics	3
WRT 2XX	200-Level WRT Course	3
	Social Science Gen Ed	3
Humanities (3
	Credits	15
Year Two Fall		
CSC 231	Computer Systems	3
CSC 240	Computer Science III	3

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MAT 161	Calculus I	4
SPK 208 or	Public Speaking or Business and Professional Speech	3
SPK 230	Communication	
Arts Gen Ed		3
-	Credits	16
Spring		
CSC 220	Foundations of Computer Science	3
CSC 241	Data Structures & Algorithms	3
MAT 121	Introduction to Statistics I	3
	munities Gen Ed	3
Writing Emp	bhasis Gen Ed	3
	Credits	15
Year Three Fall		
CSC 301	Computer Security & Ethics	3
CSC 345	Programming Language Concepts/ Paradigms	3
MAT 162	Calculus II	3-4
or STA 200	or Introduction to Statistics II	
Speaking Em	phasis Gen Ed	3
Behavioral &	Social Science Gen Ed	3-4
	Credits	15-17
Spring		
CSC 402	Software Engineering	3
Science Gen		3-4
	of the following that has not yet been	
BIO 110 or CHE 103 and CRL 103 or ESS 101 or PHY 130 or	General Biology I or General Chemistry I <i>and</i> General Chemistry I Lab or Introduction to Geology or General Physics I or General Physics II	3-4
PHY 140		2
CSC XXX	Computer Science Elective	3
Humanities (3
Speaking Em	phasis Gen Ed	3
Year Four	Credits	18-20
Fall		2
eng 368 or Eng 371	Business and Organizational Writing or Technical Writing	3
CSC XXX	Complex Large-Scale Elective	3
CSC XXX	Computer Science Elective	3
CSC XXX	Computer Science Elective	3
Interdisciplin	•	3
	Credits	15
Spring		15
CSC XXX	Computer Science Elective	3
CSC XXX	Computer Science Elective	3
CSC XXX	Computer Science Elective	3
	bhasis Gen Ed	3
winning reimp		3

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Free Elective	3
Credits	15
Total Credits	125-131

¹ Students who place out of WRT 120 or WRT 123 will have one additional free elective.

Accelerated B.S. in Computer Science to M.S. in Computer Science

compute	I Science	
Course	Title	Credits
Year One		
Fall		
CSC 141	Computer Science I	3
MAT 131	Precalculus	3
WRT 120	Effective Writing I ¹	3-4
or WRT 123	or Effective Writing with Supplemental Writing Workshop	
FYE 100X	First Year Experience	4
Behavioral &	Social Science Gen Ed	3
	Credits	16-17
Spring		
CSC 142	Computer Science II	3
MAT 161	Calculus I	4
WRT 2XX	200-Level WRT Course	3
Behavioral &	Social Science Gen Ed	3
Humanities (Gen Ed	3
	Credits	16
Year Two		
Fall		
CSC 231	Computer Systems	3
CSC 240	Computer Science III	3
MAT 151	Introduction to Discrete Mathematics	3
SPK 208	Public Speaking	3
or SPK 230	or Business and Professional Speech Communication	
Humanities (Gen Ed	3
	Credits	15
Spring		10
CSC 220	Foundations of Computer Science	3
CSC 241	Data Structures & Algorithms	3
MAT 121	Introduction to Statistics I	3
	munities Gen Ed	3
	bhasis Gen Ed	3
winning Ding	Credits	15
Year Three	cicuits	15
Fall		
CSC 301	Computer Security & Ethics	3
CSC 402	Software Engineering	3
MAT 162	Calculus II	3-4
or STA 200	or Introduction to Statistics II	
Science Gen	Ed	3-4
Select one of	the following:	
	0	

BIO 110 or CHE 103 and CRL 103 or ESS 101 or PHY 130 or	General Biology I or General Chemistry I <i>and</i> General Chemistry I Lab or Introduction to Geology or General Physics I or Physics I	3-4
PHY 170		
Speaking Em	phasis Gen Ed	3
C	Credits	18-21
Spring	Programmerican I and marked	2
CSC 345	Programming Language Concepts/ Paradigms	3
CSC XXX	Computer Science Graduate Elective	3
Science Gen I	Ed	3-4
Select one of completed:	of the following that has not yet been	
BIO 110 or CHE 103 and CRL 103 or ESS 101 or PHY 130 or	General Biology I or General Chemistry I <i>and</i> General Chemistry I Lab or Introduction to Geology or General Physics I or Physics I	3-4
PHY 170		
Arts Gen Ed		3
THEO OOH Du		5
	phasis Gen Ed	3
	phasis Gen Ed Credits	
Speaking Em Year Four		3
Speaking Em Year Four Fall	Credits	3 18-20
Speaking Em Year Four Fall ENG 368 or		3
Speaking Em Year Four Fall ENG 368 or ENG 371	Credits Business and Organizational Writing or Technical Writing	3 18-20 3
Speaking Em Year Four Fall ENG 368 or ENG 371 CSC XXX	Credits Business and Organizational Writing or Technical Writing Complex Large-Scale Elective	3 18-20 3 3
Speaking Em Year Four Fall ENG 368 or ENG 371 CSC XXX CSC XXX	Credits Business and Organizational Writing or Technical Writing Complex Large-Scale Elective Computer Science Elective	3 18-20 3 3 3 3
Speaking Em Year Four Fall ENG 368 or ENG 371 CSC XXX CSC XXX CSC XXX	Credits Business and Organizational Writing or Technical Writing Complex Large-Scale Elective Computer Science Elective Computer Science Graduate Elective	3 18-20 3 3 3 3 3
Speaking Em Year Four Fall ENG 368 or ENG 371 CSC XXX CSC XXX	Credits Business and Organizational Writing or Technical Writing Complex Large-Scale Elective Computer Science Elective Computer Science Graduate Elective ary Gen Ed	3 18-20 3 3 3 3 3 3 3
Speaking Em Year Four Fall ENG 368 or ENG 371 CSC XXX CSC XXX CSC XXX Interdiscipling	Credits Business and Organizational Writing or Technical Writing Complex Large-Scale Elective Computer Science Elective Computer Science Graduate Elective	3 18-20 3 3 3 3 3
Speaking Em Year Four Fall ENG 368 or ENG 371 CSC XXX CSC XXX CSC XXX Interdisciplina Spring	Credits Business and Organizational Writing or Technical Writing Complex Large-Scale Elective Computer Science Elective Computer Science Graduate Elective ary Gen Ed Credits	3 18-20 3 3 3 3 3 3 15
Speaking Em Year Four Fall ENG 368 or ENG 371 CSC XXX CSC XXX CSC XXX Interdisciplina Spring CSC XXX	Credits Business and Organizational Writing or Technical Writing Complex Large-Scale Elective Computer Science Elective Computer Science Graduate Elective ary Gen Ed Credits Computer Science Elective	3 18-20 3 3 3 3 3 3 15 3
Speaking Em Year Four Fall ENG 368 or ENG 371 CSC XXX CSC XXX CSC XXX Interdisciplina Spring	Credits Business and Organizational Writing or Technical Writing Complex Large-Scale Elective Computer Science Elective Computer Science Graduate Elective ary Gen Ed Credits Computer Science Elective Computer Science Graduate Elective	3 18-20 3 3 3 3 3 3 15 3 3 3 3 3
Speaking Em Year Four Fall ENG 368 or ENG 371 CSC XXX CSC XXX CSC XXX Interdisciplina Spring CSC XXX CSC XXX CSC XXX	Credits Business and Organizational Writing or Technical Writing Complex Large-Scale Elective Computer Science Elective Computer Science Graduate Elective ary Gen Ed Credits Computer Science Elective Computer Science Graduate Elective Computer Science Graduate Elective Computer Science Graduate Elective	3 18-20 3 3 3 3 3 3 15 3
Speaking Em Year Four Fall ENG 368 or ENG 371 CSC XXX CSC XXX CSC XXX Interdisciplina Spring CSC XXX CSC XXX	Credits Business and Organizational Writing or Technical Writing Complex Large-Scale Elective Computer Science Elective Computer Science Graduate Elective ary Gen Ed Credits Computer Science Elective Computer Science Graduate Elective Computer Science Graduate Elective Computer Science Graduate Elective	3 18-20 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
Speaking Em Year Four Fall ENG 368 or ENG 371 CSC XXX CSC XXX CSC XXX Interdisciplina Spring CSC XXX CSC XXX CSC XXX CSC XXX Writing Emp	Credits Business and Organizational Writing or Technical Writing Complex Large-Scale Elective Computer Science Elective Computer Science Graduate Elective ary Gen Ed Credits Computer Science Elective Computer Science Graduate Elective Computer Science Graduate Elective Computer Science Graduate Elective	3 18-20 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
Speaking Em Year Four Fall ENG 368 or ENG 371 CSC XXX CSC XXX CSC XXX Interdisciplina Spring CSC XXX CSC XXX CSC XXX CSC XXX Writing Emp	Credits Business and Organizational Writing or Technical Writing Complex Large-Scale Elective Computer Science Elective Computer Science Graduate Elective ary Gen Ed Credits Computer Science Elective Computer Science Graduate Elective Computer Science Graduate Elective hasis Gen Ed	3 18-20 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
Speaking Em Year Four Fall ENG 368 or ENG 371 CSC XXX CSC XXX CSC XXX Interdisciplina Spring CSC XXX CSC XXX CSC XXX CSC XXX Writing Emp Free Elective	Credits Business and Organizational Writing or Technical Writing Complex Large-Scale Elective Computer Science Elective Computer Science Graduate Elective ary Gen Ed Credits Computer Science Elective Computer Science Graduate Elective Computer Science Graduate Elective hasis Gen Ed	3 18-20 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
Speaking Em Year Four Fall ENG 368 or ENG 371 CSC XXX CSC XXX CSC XXX Interdisciplina Spring CSC XXX CSC XXX CSC XXX Vriting Emp Free Elective Summer CSC XXX	Credits Business and Organizational Writing or Technical Writing Complex Large-Scale Elective Computer Science Elective Computer Science Graduate Elective ary Gen Ed Credits Computer Science Graduate Elective Computer Science Graduate Credits	3 18-20 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 5
Speaking Em Year Four Fall ENG 368 or ENG 371 CSC XXX CSC XXX CSC XXX Interdisciplina Spring CSC XXX CSC XXX CSC XXX Writing Emp Free Elective Summer CSC XXX Year Five Fall	Credits Business and Organizational Writing or Technical Writing Complex Large-Scale Elective Computer Science Elective Computer Science Graduate Elective ary Gen Ed Credits Computer Science Graduate Elective Computer Science Graduate Elective hasis Gen Ed Credits Computer Science Graduate Elective hasis Gen Ed Credits Computer Science Graduate Elective	3 18-20 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
Speaking Em Year Four Fall ENG 368 or ENG 371 CSC XXX CSC XXX CSC XXX Interdisciplina Spring CSC XXX CSC XXX CSC XXX Writing Emp Free Elective Summer CSC XXX Year Five Fall CSC 520	Credits Business and Organizational Writing or Technical Writing Complex Large-Scale Elective Computer Science Elective Computer Science Graduate Elective ary Gen Ed Credits Computer Science Graduate Elective Computer Science Graduate Elective hasis Gen Ed Credits Computer Science Graduate Elective hasis Gen Ed Credits Foundations of Computer Science	3 18-20 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
Speaking Em Year Four Fall ENG 368 or ENG 371 CSC XXX CSC XXX CSC XXX Interdisciplina Spring CSC XXX CSC XXX CSC XXX Writing Emp Free Elective Summer CSC XXX Year Five Fall	Credits Business and Organizational Writing or Technical Writing Complex Large-Scale Elective Computer Science Elective Computer Science Graduate Elective ary Gen Ed Credits Computer Science Graduate Elective Computer Science Graduate Elective hasis Gen Ed Credits Computer Science Graduate Elective hasis Gen Ed Credits Computer Science Graduate Elective	3 18-20 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3

B.S. IN COMPUTER SCIENCE

	Total Credits	149-155
	Credits	9
CSC 600	Advanced Seminar	3
CSC 560	Analysis of Algorithms	3
CSC 540	Programming Languages	3
Spring		

¹ Students who place out of WRT 120 or WRT 123 will have one additional free elective.

B.S in Computer Science with Certificate in Computer Security

•	Security	
Course 7	Title	Credits
Year One		
Fall		
CSC 141 0	Computer Science I	3
	Precalculus	3
WRT 120 I	Effective Writing I ¹	3-4
or WRT 123	or Effective Writing with Supplemental	
	Writing Workshop	4
	First Year Experience Social Science Gen Ed	4
	Credits	16-17
Spring		-
	Computer Science II	3
	Calculus I	4
	200-Level WRT Course	3
	Social Science Gen Ed	3
Humanities Ge		3
	Credits	16
Year Two Fall		
CSC 231 0	Computer Systems	3
	Computer Science III	3
MAT 151 I	Introduction to Discrete Mathematics	3
SPK 208	Public Speaking	3
or	or Business and Professional Speech	
SPK 230	Communication	
Humanities Ge		3
	Credits	15
Spring		
	Foundations of Computer Science	3
CSC 241	Data Structures & Algorithms	3
	Introduction to Statistics I	3
Diverse Comm	unities Gen Ed	3
Writing Emph		3
	Credits	15
Year Three Fall		
CSC 301 0	Computer Security & Ethics	3
	Data Communications and Networking I	3
	Calculus II	3-4
or STA 200	or Introduction to Statistics II	
0 · 0 D	d	3-4
Science Gen E	u	5 1

BIO 110 or CHE 103 and CRL 103 or ESS 101 or PHY 130 or PHY 170	General Biology I or General Chemistry I <i>and</i> General Chemistry I Lab or Introduction to Geology or General Physics I or Physics I	3-4
	phasis Gen Ed	3
opeaking Din	Credits	18-21
Spring	create	10 21
CSC 302	Computer Security	3
CSC 402	Software Engineering	3
Science Gen		3-4
	of the following that has not yet been	0 1
completed:	of the following that has not yet been	
BIO 110 or CHE 103 <i>and</i> CRL 103 or ESS 101 or PHY 130 or PHY 170	General Biology I or General Chemistry I <i>and</i> General Chemistry I Lab or Introduction to Geology or General Physics I or Physics I	3-4
Arts Gen Ed		3
Speaking Em	phasis Gen Ed	3
	Credits	18-20
Year Four Fall		
CSC 345	Programming Language Concepts/ Paradigms	3
CSC 472	Software Security	3
ENG 368 or ENG 371	Business and Organizational Writing or Technical Writing	3
CSC XXX	Complex Large-Scale Elective	3
Interdisciplin		3
1	Credits	15
Spring		
CSC 468	Introduction to Cloud Computing	3
CSC 471	Modern Malware Analysis	3
CSC XXX	Computer Science Elective	3
*		3
Free Elective		3
	Credits	15
	Total Credits	128-134

¹ Students who place out of WRT 120 or WRT 123 will have one additional free elective.