Sample Course Schedule : For Students Entering Fall 2023 - *No Waiver for CS 110, Calculus Ready*

Binghamton University Undergrad Computer Science Program

FRESHMAN (2 CS courses + CS 101)

Fall		Credits
CS 101	Professional Skills, Ethics, and CS Trends	1
CS 110	Programming Concepts & Applications[0]	4
MATH 224/225	Calculus I Topics	4
WRIT 111	Research & Writing (Rhetorically)	4
	Social Sciences / Humanities Elective[3]	4
	Total	17

Spring		Credits
CS 120	Programming and Hardware Fundamentals[1]	4
MATH 226/227	Calculus II Topics	4
	Science Sequence Course 1 (CHEM or BIOL or PHYS)[2]	4
	Social Sciences / Humanities Elective[3]	4
	Total	16

SOPHOMORE (3 CS courses)

Fall		Credits
CS 210	Programming with Objects and Data Structures[1]	4
MATH	Mathematics (e.g. 304 or 314/330 or 327)[4]	4
	Science Sequence Course 2 (CHEM or BIOL or PHYS)[2]	4
BIOL or CHEM	Science Sequence Lab, if necessary	2 or 0
	Free Elective[3]	2 or 4
	Total	16 or 18

Spring		Credits
CS 301	Ethical, Social, and Global Issues in Computing	4
CS 220	Architecture from a Programmer's Perspective	4
MATH	Mathematics (e.g. 304 or 314/330 or 327)[4]	4
	Additional Lab Science or MATH 323	4
	Total	16

JUNIOR (4 CS courses)

Fall		Credits
CS 310	Data Structures and Algorithms	4
CS 320	Advanced Computer Architecture	4
MATH	Mathematics (e.g. 304 or 314/330 or 327)[4]	4
	Social Sciences / Humanities Elective[3]	4
	Total	16

Spring		Credits
CS 350	Operating Systems	4
CS 375	Design and Analysis of Algorithms	4
	Social Sciences / Humanities Elective[3]	4
	Social Sciences / Humanities Elective[3]	4
	Total	16

SENIOR (7 CS courses)

Fall		Credits
CS 373	Automata Theory & Formal Languages	4
CS 4xx	Computer Science Elective[5]	3[6]
CS 4xx	Computer Science Elective[5]	3[6]
CS 4xx	Computer Science Elective[5]	3[6]
	Free Elective (e.g. Physical Activity / Wellness)[3]	4 or 2
	Total	17 or 15

Spring		Credits
CS 471	Programming Languages	4
CS 4xx	Computer Science Elective[5]	3[6]
CS 4xx	Computer Science Elective[5]	3[6]
	Liberal Arts and Sciences Free Elective[3] (e.g. Foreign Language if necessary)	4
	Total	14

This is a flexible sample schedule that may be altered considerably, as long as prerequisites are observed (see prerequisites flow chart in a separate document).

0   CS 110 counts as Free Elective credit

1   Students with considerable AP credits to satisfy General Education ("Gen Ed") courses, and with significant programming experience, may take CS 120 and 210 in the same semester, with advisor approval. This can shift other CS courses forward, and may facilitate a double degree.

2   The **Science Sequence** may be satisfied in **Chemistry** (CHEM 104 & 105 & 106 or 107 & 108): 10 or 8 Credits; or **Biology** (BIOL 113 & 114 & 115): 10 Credits; or **Physics** (PHYS 131 & 132): 8 Credits

3   Social Sciences, Humanities, and Free Elective courses should be selected to satisfy the Gen Ed requirements.

4   Students should continue to take one MATH course per semester, after Calculus, to obtain the prerequisites for 300-level CS classes. Courses other than those listed here (MATH 304, 314, 330, and 327) can be used to satisfy the MATH requirements; consult detailed CS Degree Requirements for alternate courses.

5   CS Elective courses should be selected to satisfy the Breadth Area requirements (A, B, C, D, E), and Track (Cybersecurity or Artifical Intelligence) requirements, if applicable

6   CS Electives will have become 3 Credits each by the time students entering in Fall 2023 will take them; 5 CS Elective courses will be needed to earn 15 CS Elective credits

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Binghamton University Undergrad Computer Science Program

FRESHMAN

Fall		Credits	Spring		Credits
CS 101	Professional Skills, Ethics, and CS Trends	1			
CS 120	Programming and Hardware Fundamentals[1]	4	CS 210 Programming with Objects and Data Structures[1]		4
MATH 224/225	Calculus I Topics	4	MATH 226/227 Calculus II Topics		4
WRIT 111	Research & Writing (Rhetorically)	4	Science Sequence Course 1 (CHEM or BIOL or PHYS)[2]		4
	Social Sciences / Humanities Elective[3]	4	Social Sciences / Humanities Elective[3]		4
	Total	17		Total	16

2 CS courses + CS 101

SOPHOMORE

Fall		Credits	Spring		Credits
CS 220	Architecture from a Programmer's Perspective	4	CS 301 Ethical, Social, and Global Issues in Computing		4
MATH	Mathematics (e.g. 304 or 314/330 or 327)[4]	4	CS 310 Data Structures and Algorithms		4
	Science Sequence Course 2 (CHEM or BIOL or PHYS)[2]	4	MATH Mathematics (e.g. 304 or 314/330 or 327)[4]		4
BIOL or CHEM	Science Sequence Lab, if necessary	2 or 0	Additional Lab Science or MATH 323		4
	Free Elective[3]	2 or 4			
	Total	16 or 18		Total	16

3 CS courses

JUNIOR

Fall		Credits	Spring		Credits
CS 350	Operating Systems	4	CS 320 Advanced Computer Architecture		4
CS 375	Design and Analysis of Algorithms	4	CS 373 Automata Theory & Formal Languages		4
MATH	Mathematics (e.g. 304 or 314/330 or 327)[4]	4	Social Sciences / Humanities Elective[3]		4
	Social Sciences / Humanities Elective[3]	4	Social Sciences / Humanities Elective[3]		4
	Total	16		Total	16

4 CS courses

SENIOR

Fall		Credits	Spring		Credits
CS 471	Programming Languages	4	CS 4xx Computer Science Elective[5]		3[6]
CS 4xx	Computer Science Elective[5]	3[6]	CS 4xx Computer Science Elective[5]		3[6]
CS 4xx	Computer Science Elective[5]	3[6]	CS 4xx Computer Science Elective[5]		3[6]
	Free Elective[3]	4	Liberal Arts and Sciences Free Elective[3] (e.g. Foreign Language if necessary)		4
	Free Elective (e.g. Physical Activity / Wellness)[3]	4 or 2			
	Total	18 or 16		Total	13

6 CS courses

This is a flexible sample schedule that may be altered considerably, as long as prerequisites are observed (see prerequisites flow chart in a separate document).

1   Students with considerable AP credits to satisfy General Education ("Gen Ed") courses, and with significant programming experience, may take CS 120 and 210 in the same semester, with advisor approval. This can shift other CS courses forward, and may facilitate a double degree.

2   The Science Sequence may be satisfied in Chemistry (CHEM 104 & 105 & 106 or 107 & 108): 10 or 8 Credits; or Biology (BIOL 113 & 114 & 115): 10 Credits; or Physics (PHYS 131 & 132): 8 Credits

3   Social Sciences, Humanities, and Free Elective courses should be selected to satisfy the Gen Ed requirements.

4   Students should continue to take one MATH course per semester, after Calculus, to obtain the prerequisites for 300-level CS classes. Courses other than those listed here (MATH 304, 3

5   CS Elective courses should be selected to satisfy the Breadth Area requirements (A, B, C, D, E), and Track (Cybersecurity or Artifical Intelligence) requirements, if applicable

6   CS Electives will have become 3 Credits each by the time students entering in Fall 2023 will take them; 5 CS Elective courses will be needed to earn 15 CS Elective credits