

## Sample Computer Science Schedule – General Option with Math Minor

Minor Requirements: By carefully choosing electives, a student majoring in CMPSC can complete the requirements of the math minor without taking additional credits. Below is one sample plan that allows for this. Math 140, 141, and 220 are satisfied by required courses in the CMPSC curriculum. MATH 230 satisfies an open 100-400 level elective. The 400 level MATH courses are satisfied by required CMPSC/MATH technical electives, and an open 300-400 level elective.

Semester 1		Semester 2	
<b>CMPSC 121: Intro. to Programming Techniques or CMPSC 131: Programming and Computation I</b>	3	<b>CMPSC 122: Intermediate Programming or CMPSC 132: Programming and Computation II</b>	3
<b>MATH 140: Calculus I</b>	4	<b>MATH 141: Calculus II</b>	4
ENGL 015S or 030S: Composition	3	PHYS 211: General Physics: Mechanics	4
Humanities GH	3	CAS 100: Effective Speech	3
Health and Wellness GHW	1.5	Arts GA	3
<b>14.5</b>		<b>17</b>	
Semester 3		Semester 4	
CMPSC 221: OOP with Web-Based Applications	3	<b>CMPSC 330: Advanced Programming in C++</b>	3
<b>MATH 220: Matrices</b>	2	<b>CMPSC 360: Discrete Mathematics</b>	3
<b>MATH 230 – Calculus and Vector Analysis</b>	4	ENGL 202C: Technical Writing GWS	3
Sciences GN (PHYS 212 recommended)	3-4	Sciences GN	2-3
Social and Behavioral Science GS	3	Arts GA	3
Health and Wellness GHW	1.5	Health and Wellness GHW	1.5
<b>16.5-17.5</b>		<b>15.5-16.5</b>	
Semester 5		Semester 6	
CMPSC 312: Computer Org. and Architecture	3	CMPSC 430: Database Design	3
STAT 414: Introduction to Probability Theory	3	CMPSC 462: Data Structures	3
Social and Behavioral Science GS	3	CMPSC 469: Formal Languages with Applications	3
<b>Additional Course in MATH: Select from: MATH 401, 411, 412, 425, 430, 431, 435, 445, 449, 450, 455, 465, 468, 496, 497</b>	3	<b>CMPSC/MATH 455: Numerical Analysis</b>	3
Humanities GH	3	<b>400-level Math Course (for 300-400 level elective)</b>	3
<b>15</b>		<b>15</b>	
Semester 7		Semester 8	
CMPSC 463: Design and Analysis of Algorithms	3	CMPSC 460: Principles of Programming Languages	3
CMPSC 472: Operating System Concepts	3	CMPSC 470: Compiler Construction	3
CMPSC 487W: Software Engineering and Design	3	CMPSC 488: Computer Science Project	3
<b>Additional Course in MATH: Select from: MATH 401, 411, 412, 425, 430, 431, 435, 445, 449, 450, 455, 465, 468, 496, 497</b>	3	Additional Courses in CS. Select from: CMPSC 313, 412, 413, 438, 441, 444, 445, 446, 455, 457, 475, 496, 497	3
Additional Courses in CS. Select from: CMPSC 313, 412, 413, 438, 441, 444, 445, 446, 457, 475, 496, 497	3	Open Electives 100-400 level	0-1
<b>15</b>		<b>13-14</b>	

Notes:

1. **Bold typed courses** require a grade of C or better.
2. Students must earn a 2.5 or higher grade point average in the following courses: CMPSC 221, 312, 330, 360, 430, 460, 462, 463, 469, 470, 472, 487W, and 488.
3. Students in the Computer Science (COMP\_BS) major are required to complete 21 of the 27 credits of 400-level prescribed courses for the major, including the senior capstone course, at Penn State Harrisburg. This is in compliance with Faculty Senate Policy 83-80.5.