

Computer Science with MS in Data Science 4+1

Recommended Five-Year Plan (Fall 2023)

The recommended five-year plan is designed to provide a blueprint for students to complete their degrees within five years. Students must meet with their Major Advisor to develop a more individualized plan to complete their degree. This plan assumes that no developmental courses are required. If developmental courses are needed, students may have additional requirements to fulfill which are not listed in the plan and may extend degree completion.

NOTE: This recommended Five-Year Plan is applicable to students admitted into the major during the 2023-2024 academic year.

To enroll, visit <https://www.ramapo.edu/data-science/4plus1/>

Changes to the traditional four-year plan are noted in **light red**.

First Year					
Fall Semester	HRS	✓	Spring Semester	HRS	✓
CMPS 147-Computer Science I	4		CMPS 148-Computer Science II	4	
Gen Ed: MATH 110-Precalculus	4		MATH 121-Calculus I	4	
Gen Ed: INTD 101-First Year Seminar	4		CMPS 220-Assembly Language Programming	4	
Gen Ed: CRWT 102 - Critical Reading and Writing II	4		Gen Ed: AIID 201- Studies in the Arts & Humanities	4	
			Career Pathways: PATH TS1 – Career Pathways Module 1	Degree Rqmt.	
Total:	16		Total:	16	

Second Year					
Fall Semester	HRS	✓	Spring Semester	HRS	✓
CMPS 231-Data Structures	4		CMPS 311-Operating Systems WI	4	
MATH 237-Discrete Structures or MATH 205 Mathematical Structures WI	4		CMPS Elective	4	
Gen Ed: SOSOC 110-Social Science Inquiry	4		Gen Ed: Global Awareness	4	
Gen Ed: Historical Perspectives	4		Gen Ed: Scientific Reasoning	4	
Career Pathways: PATH TS2 – Career Pathways Module 2	Degree Rqmt.		Career Pathways: PATH TS3 – Career Pathways Module 3	Degree Rqmt.	
Total:	16		Total:	16	

Third Year					
Fall Semester	HRS	✓	Spring Semester	HRS	✓
CMPS 361-Software Design	4		CMPS Elective	4	
CMPS Elective	4		CMPS Elective	4	
MATH 262: Linear Algebra	4		MATH 370: Applied Statistics	4	
Gen Ed: Culture & Creativity, Systems Sustainability & Society, or Values & Ethics	4		Gen Ed: Culture & Creativity, Systems Sustainability & Society, or Values & Ethics (Must be outside of TAS)	4	
Elective (for missing 3 credits senior year)	2		Elective (for missing 3 credits senior year)	1	
Total:	18		Total:	17	

Fourth Year					
Fall Semester	HRS	✓	Spring Semester	HRS	✓
CMPS 366-Organization of Programming Languages	4		CMPS Elective	4	
CMPS Elective	4		CMPS 450: Senior Project WI	4	
CMPS Elective: CMPS 530: Python Programming for Data Science OR Elective: Math 570: Applied Statistics (MS)	3		Elective OR CMPS Elective (based on choice in Fall)	4	
DATA 601: Introduction to Data Science (MS)	3		DATA 620: Ethics for Data Science (MS)	3	
Total:	14		Total:	15	
Fifth Year					
Fall Semester	HRS	✓	Spring Semester	HRS	✓
MATH 570: Applied Statistics OR CMPS 530: Python for Data Science	3		CMPS 664: Advanced Database and Big Data Systems	3	
MATH 680: Advanced Mathematical Modeling	3		Technical Elective	3	
Technical Elective AND/OR Interdisciplinary Elective AND/OR DATA 730 Fieldwork Experience*	3 + 3		DATA 750 Data Science Thesis	3	
Total:	12		Total:	9	

Total Credits Required: 128 credits

GPA Required: 2.0

WI: Writing Intensive-3 required in the major

Total Graduate Credits Required: 30 credits

Student must be in good academic standing:

<https://www.ramapo.edu/provost/policy/graduate-academic-standing/>

*Students must complete **two** technical electives and **one** interdisciplinary elective. DATA 730 Fieldwork Experience may be used to replace **one** of the three total electives.