RAMAPO COLLEGE OF NEW JERSEY

School of Theoretical and Applied Science

Data 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 four 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.

First Year					
Fall Semester	**HRS**	✓	**Spring Semester**	**HRS**	✓
Gen Ed: Quantitative Reasoning - MATH 121-Calculus I	4		CMPS 130-Scientific Programming with Python	4	
Gen Ed: INTD 101-First Year Seminar	4		MATH 237-Discrete Structures or MATH 205-Mathematical Structures **WI**	4	
Gen Ed: CRWT 102-Critical Reading and Writing II	4		Gen Ed: AIID 201-Studies in the Arts & Humanities	4	
DATA 101-Introduction to Data Science	4		Gen Ed: SOSC 110-Social Science Inquiry	4	
			TAS Pathways Module 1: (PATH-TS1)	**Degree Rqmt.**	
Total:	16		**Total:**	16	

Second Year					
Fall Semester	**HRS**	✓	**Spring Semester**	**HRS**	✓
CMPS 240-Data Analytics in Python	4		DATA 301-Data Visualization	4	
MATH 262-Linear Algebra **WI**	4		Minor Requirement*	4	
Gen Ed: Historical Perspectives	4		Gen Ed: Scientific Reasoning	4	
Minor Requirement*	4		Gen Ed: Distribution: Culture and Creativity OR Systems, Sustainability & Society **(Must be outside TAS)**	4	
TAS Pathways Module 2: (PATH-TS2)	**Degree Rqmt.**		TAS Pathways Module 3: (PATH-TS3)	**Degree Rqmt.**	
Total:	16		**Total:**	16	

Third Year					
Fall Semester	**HRS**	✓	**Spring Semester**	**HRS**	✓
Gen Ed: Distribution Values and Ethics DATA 225-Ethics of Technology **WI**	4		MATH 370-Applied Statistics	4	
Gen Ed: Global Awareness	4		CMPS 364-Database Design	4	
Minor Requirement*	4		Minor Requirement*/Elective	4	
Minor Requirement*	4		Data Science Elective**	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 320-Machine Learning	4		DATA 450-Data Science Capstone Project **WI**	4	
DATA 601-Intro to Data Science (MS)	3		DATA 620-Ethics for Data Science (MS)	3	
CMPS 530-Python for Data Science (MS)	3		Elective	4	
Minor Requirement*	4		Elective	4	
Total:	14		**Total:**	15	

Fifth Year					
Fall Semester	**HRS**	**✓**	**Spring Semester**	**HRS**	**✓**
MATH 570-Applied Statistics	3		CMPS 664-Advanced Database and Big Data	3	
MATH 680-Advanced Mathematical Modeling	3		Data Science Elective at 600/700 level	3	
Data Science Elective at 600/700 level	3		DATA 750-Data Science Thesis	3	
Interdisciplinary Elective	3				
Total:	12		**Total:**	9	

Total Credits Required for undergraduate degree: 128 credits*****
GPA Required for BS in Data Science: 2.0
GPA Required for 4+1 Pathway: 3.0
WI: Writing Intensive-3 required in the major
* As part of their degree requirements, Data Science majors are also required to complete a minor or double major to gain domain knowledge in a particular field, to better contextualize their data studies. Most minor programs require 5-6 courses. Any minor or second major can be selected: https://www.ramapo.edu/majors-minors/a-z/

** Data Science elective courses to be chosen for the BS in Data Science may require prerequisites outside the program requirements. For example, Math 305 Differential Equations, Math 245 Numerical Analysis, and Math 253 Probability each have Math 122 Calculus II as a prerequisite. Additionally, Math 253 Probability also allows the option for Math 122 Calculus II to be taken as a co-requisite. Please see instructor for ECON 310: Econometrics to discuss prerequisite course requirements.

***Three additional credits are required in the 3rd year because graduate courses are only 3 credits, instead of the usual 4 credits for undergraduate courses. Thus, a student must take an additional 3 credits to meet the 128-credit undergraduate graduation requirement.

Total Graduate Credits Required: 30 credits****
GPA Required: 2.0
Student must be in good academic standing:
https://www.ramapo.edu/provost/policy/graduate-academic-standing/

****The 9 credits of graduate coursework taken in the fourth-year will double count towards both the undergraduate degree requirement of 128 credits as well as the required 30 graduate credits.