

**Data Science Undergraduate Certificate
Curriculum Sheet**
As of April 2, 2025

Foundational Courses			
Course	Credits	Notes and Prerequisites	Generally Offered *
01:198:142/01:960:142 Data 101	4	Placement into 01:740:026 (Math 026)	Fall, Spring, Summer
01:960:291 Statistical Inference for Data Science OR, 01:960:212. Statistics II, OR, 01:960:384 Intermediate Statistical Analysis, OR, 33:136:385 Statistical Methods in Business	3	Prereqs for 01:960:291 01:198:142/ 01:960:142 and 01:640:115 Prereqs for 01:960:212 01:640:115 or permission of department. Prereqs for 01:960:284 One of the following courses: 960:201, 211, 285, 379, 381 or permission of department. Prereqs for 33:136:385 01:640:135, 01:960:285.	Fall, Spring
01:198:210 Data Management for Data Science (4) OR, 01:960:295 Data Wrangling and Management with R (3) OR, 04:547:221 Fundamentals of Data Curation and Management (3)	3-4	Prereqs for 01:198:210 01:198:142/01:960:142 /01:198:111 Prereqs for 01:960:295 01:198:142/01:960:142 or Level II Statistics Prereqs for 04:547:221 04:547:202 or both 01:198:142/01:960:142 and 01:960:291	198:210 -> Fall, Spring 960:295 -> Spring 547:221 -> Fall, Spring
Credit Total	10-11		

Domain Course (Choose 1) **			
Course	Credits	Notes and Prerequisites	Generally Offered *
01:198:439 Introduction to Data Science	4	(01:198:205 Introduction to Discrete Structures 1 or, 14:332:202 Discrete Math ECE or, 14:332:312 Discrete Mathematics ECE) AND (01:640:152 Calculus II or 01:640:192 Honors Calculus II)	Fall, Spring

01:220:322 Econometrics	3	01:220:102 Intro to Microeconomics AND 01:220:103 Intro to Macroeconomics AND (01:960:211 Statistics I or, 01:960:285 Introductory Statistics for Business or, 01:960:401 Basic Statistics for Research) AND 01:640:135/151 Calculus 1	Fall, Spring, Summer
01:450:320 Spatial Data Analysis	3	None	Fall
01:450:321 Geographic Information Systems	3	None	Fall
01:450:330 Geographical Research Methods	3	01:450:101 Earth Systems or, 01:450:102 Transforming the Global Environment or, 01:450:103 Human Geography: Space, Place, & Location	Spring
01:750:345 Computational Astrophysics	3	01:750:341/342 Principles Astrophysics	Fall
01:790:391 Data Science for Political Science	3	01:640:026 or placement above Intermediate Algebra	Fall
01:920:360 Computational Social Science	3	01:198:142/01:960:142 Data 101	<i>Generally offered once per academic term</i>
01:960:385 Intro Bayesian Data Analysis	3	Level II Statistics {The Level II Statistics prerequisites for some courses may be fulfilled by 960:212 or 960:384 or 960:401 or 960:484 or 960:291 or the equivalent. Credit will not be given for more than one Level II Statistics course.} AND 01:640:152 Calculus II	Fall
01:960:463 Regression Methods	3	Level II Statistics {The Level II Statistics prerequisites for some courses may be fulfilled by 960:212 or 960:384 or 960:401 or 960:484 or 960:291 or the equivalent. Credit will not be given for more than one	Fall, Spring, Summer
		Level II Statistics course.} AND 01:640:152 Calculus II	

01:960:486 Applied Statistical Learning	3	Level II Statistics {The Level II Statistics prerequisites for some courses may be fulfilled by 960:212 or 960:384 or 960:401 or 960:484 or 960:291 or the equivalent. Credit will not be given for more than one Level II Statistics course.} AND 01:640:152 Calculus II	Fall, Spring
04:189:220 Data in Context	3	None	Fall, Spring
04:547:321 Information Visualization	3	04:547:201 Information Technology Fundamentals (for ITI students) OR (01:198:142/01:960:142 Data 101 AND 01:960:291 Statistical Inference for Data Science)	Fall, Spring, Summer
14:332:443 Machine Learning for Engineers	3	(01:640:250 Intro Linear Algebra or, 01:640:350 Linear Algebra or, 01:640:291 Honors Calculus III) AND (14:332:226 - Probability and Random Processes or, 01:960:381 Theory of Probability or, 01:640:477 Math Theory of Probability or, 01:198:206 Intro to Discrete Structures II	Fall
01:830:202 Data Science & Addiction Research Methods	3	01:830:101 General Psychology	Fall
01:830:203 Data Science & Addiction Research Methods 2	3	01:830:101 General Psychology AND 01:830:202 DSARM 1	Spring
Credit Total	3-4		

*Please note that the respective departments can change the semester(s) in which the course(s) are offered. Students must confirm the same with the individual departments.

**Please refer to the individual departments' websites to see when the updated approved domain courses are scheduled and to confirm their prerequisites.

The SAS Curriculum Committee has approved a change to the Data Science Minor and Certificate, removing the capstone requirement. While this change is pending final approval by the SAS Faculty in May 2025, we recommend students plan their schedule as if the change is already in effect.

Subject to change. Please check with the Data Science Undergraduate Program directors/ advisors at datascience@rutgers.edu