

DATA SCIENCE B.S.

Requirements

Code	Title	Units
	Core Curriculum Requirements (https://catalog.vanguard.edu/college/core-curriculum/)	54-52
	Mathematics Major Core Requirements	41
	Data Science Major Requirements	33-32
Total Units		128-125

Mathematics Core Requirements

Code	Title	Units
Lower Division		
MATH-180C	Calculus I	4
MATH-181C	Calculus II	4
CSCI-100C & 100CL	Introduction to Computer Science and Introduction to Computer Science Lab	4
MATH-265C	Intro to Statistical Methods	3
MATH-207	Computer Programming	3
MATH-281	Multivariable Calculus	4
MATH-285	Intro to Adv Mathematics	3
Upper Division		
MATH-300	Linear Algebra	3
MATH-310	Differential Equations	3
MATH-365	Probability and Statistics	3
MATH-390	Numerical Analysis	3
MATH-485	Undergraduate Research	2
or MATH-450	UG Research and Internship Program	
or MATH-488	Senior Project	
MATH-499C	Mathematics Capstone	2
Total Units		41

Data Science Major Requirements

Code	Title	Units
BUSN-125	Computer Applications	3
DSCI-100C & 100CL	Introduction to Data Science and Introduction to Data Science Laboratory	4
DSCI-300	Database Management	3
DSCI-350	Data Mining	3
DSCI-410	Data Visualization	3
MATH-330	Number Theory	3
MATH-375	Discrete Mathematics	3
MRKT-360	Principles of Marketing	3
SOC-369 & 369L	Research Design & Methods and Research Design & Methods Lab	4
Electives		

Select one lecture/lab from either the MATH, CSCI, or DSCI disciplines. 3-4

Total Units 32-33

Four Year Plan

Disclaimer: This sample Four Year Plan is provided as a guide for the recommended sequencing of courses. Vanguard University requires that students complete a minimum of 120 units of required course work as outlined on the Requirements tab in order to receive a Bachelor of Arts, Bachelor of Music, Bachelor of Science, or Bachelor of Science in Nursing degree. It is the student's responsibility to confirm with the department the course rotation before enrolling in courses. If applicable, please note the footnotes at the bottom of the page for additional information related to courses listed in a particular year and term. Questions, contact the Department of Physical Science and Mathematics.

Study Abroad Participation: Students interested in participating in the university's Study Abroad programs are encouraged to reach out to the Global Education and Outreach Office (studyabroad@vanguard.edu) for more information and collaboration in their academic course planning. Students using Education and Training Benefits through the U.S. Department of Veteran Affairs are encouraged to also reach out to the School Certifying Official (veteranscertifyingofficial@vanguard.edu) for more information regarding how benefits can be applied.

Course	Title	Units
Year 1 Term 1		
DSCI-100C	Introduction to Data Science	3
DSCI-100CL	Introduction to Data Science Laboratory	1
MATH-285	Intro to Adv Mathematics	3
NT-101C	New Testament Survey	3
CORE-100C	Cornerstone	1
MATH-180C	Calculus I	4
Units		15

Year 1 Term 2		
KINE-145C	Lifetime Fitness/Wellness Lect	1
CSCI-100C	Introduction to Computer Science	3
CSCI-100CL	Introduction to Computer Science Lab	1
SOC-PLCR	Social Science Core Curriculum Req'm't	3
KINE-146C	Lifetime Fitness/Well Activity	1
Units		9

Year 2 Term 1		
BUSN-125	Computer Applications	3
MATH-281	Multivariable Calculus	4
MATH-300	Linear Algebra	3
THEO-101C	Foundations of Christian Life	3
FINA-PLCR	Fine Arts Core Curriculum Requirement	3
Units		16

Year 2 Term 2		
DSCI-300	Database Management	3
MATH-265C	Intro to Statistical Methods	3



MATH-310	Differential Equations	3
OT-201C	Old Testament Survey	3
MATH-207	Computer Programming	3
Units		15
Year 3 Term 1		
MATH-390	Numerical Analysis	3
MATH-375	Discrete Mathematics	3
ENGL-120C	Persuasive Writing	3
SOC-PLCR	Social Science Core Curriculum Reqmt	3
HIST-PLHD	History Core Requirement	3
Units		15
Year 3 Term 2		
DSCI-3XX	Data Science Elective-300 Level	1
MATH-485	Undergraduate Research	2
SOC-369	Research Design & Methods	3
SOC-369L	Research Design & Methods Lab	1
HSPS-PLCR	History/Political Sci Core Requirement	3
Units		10
Year 4 Term 1		
THEO-300C	Developing a Christian World View	3
MRKT-360	Principles of Marketing	3
ENGL-220C	Researched Writing	3
DSCI-4XX	Data Science Elective-400 Level	1
COMM-201C	Speech Composition and Presentation	3
Units		13
Year 4 Term 2		
MATH-365	Probability and Statistics	3
MATH-499C	Mathematics Capstone	2
CHIS-400C	Christian Heritage	3
DSCI-350	Data Mining	3
ENGL-230C	Literature and the Human Experience	3
MATH-4XX	Mathematics Elective - 400 Level	1-9
Units		15-23
Total Units		108-116

