MATHEMATICS (STATISTICS FOR DATA SCIENCE) - BACHELOR OF SCIENCE (ONLINE)

The Statistics for Data Science concentration is intended to prepare students planning a data science oriented career upon graduation. The coursework in this concentration provides a foundation in mathematics and statistics important in data science.

Students must complete all University degree requirements, which include: General Education requirements, Viewing a Wider World requirements, and elective credits to total at least 120 credits with 48 credits in courses numbered 300/3000 or above. Developmental coursework will not count towards the degree requirements and/or elective credits, but may be needed in order to take the necessary English and Mathematics coursework.

Prefix	Title	Credits
General Education		
Area I: Communications		
English Composition - Level 1		
ENGL 1110G	Composition I	4
or ENGL 1110H	Composition I Honors	
or ENGL 1110M	Composition I	
English Composition - Level 2		
ENGL 2210G	Professional and Technical Communication	3
or ENGL 2210H	Professional and Technical Communication	
or ENGL 2210M	Professional and Technical Communication for Multilingual Students	
Oral Communication		
COMM 1115G	Introduction to Communication	3
or HNRS 2175G	Introduction to Communication Honors	
Area II: Mathematics		
MATH 1511G	Calculus and Analytic Geometry I (Departmental/College Requirement) [1]	4
or MATH 1511H	Calculus and Analytic Geometry I Honors	
Area III/IV: Laboratory Sciences and Social/Behavioral Sciences		*10-11*
Area III: Laboratory Sciences Course (4 credits) [2]		
Area IV: Social/Behavioral Sciences Course (3 credits) [2]		
Either an Area III/IV: Laboratory Sciences or Social/Behavioral Sciences Course (4 credits or 3 credits) [2]		
Area V: Humanities [2]		*3*
Area VI: Creative and Fine Arts [2]		*3*
General Education Elective		
MATH 1521G	Calculus and Analytic Geometry II (Departmental/College Requirement)	4
Viewing a Wider World [3]		**6**
Departmental/College Requirements		
MATH 1350G	Introduction to Statistics	3
MATH 2415	Introduction to Linear Algebra	3
MATH 2530G	Calculus III	3
MATH 3140	Introduction to Numerical Methods	3
MATH 4230	Applied Linear Algebra	3
MATH 3160	Introduction to Ordinary Differential Equations	3
STAT 3110	Statistics for Engineers and Scientists	3
STAT 4210	Probability: Theory and Applications	3
STAT 4220	Statistics: Theory and Applications	3
Non-Departmental Requirements (in addition to Gen.Ed/VWW)		
CSCI 1220	Computer Programming Fundamentals: Python	3
CSCI 1235	R Programming I	3
I E 311	Engineering Data Analysis	3
I E 413	Engineering Operations Research I	3
I E 423	Engineering Operations Research II	3
E E 465	Machine Learning I	3
Second Language Requirement: (not required)		
Electives, to bring the total credits to 120 [4]		**35**
12 credits must be Upper-Division		
Total Credits		**120-121**

1. MATH 1511G Calculus and Analytic Geometry I is required for the degree but students may need to take any prerequisites needed to enter MATH 1511G first.
2. See the General Education (https://catalogs.nmsu.edu/nmsu/general-education-viewing-wider-world/) section of the catalog for a full list of courses.
3. See the Viewing a Wider World (https://catalogs.nmsu.edu/nmsu/general-education-viewing-wider-world/#viewingawiderworldtext) section of the catalog for a full list of courses.
4. Elective credit may vary based on prerequisites, dual credit, AP credit, double majors, and/or minor coursework. The amount indicated in the requirements list is the amount needed to bring the total to 120 credits and may appear in variable form based on the degree. However students may end up needing to complete more or less on a case-by-case basis and students should discuss elective requirements with their advisor.

Second Language Requirement

For the Bachelor of Science with a major in Mathematics with a Concentration in Statistics for Data Science, there is no second language requirement for the degree.

A Suggested Plan of Study for Students

This roadmap assumes student placement in MATH 1511G Calculus and Analytic Geometry I and ENGL 1110G Composition I. The contents and order of this roadmap may vary depending on initial student placement in mathematics and english. It is only a suggested plan of study for students and is not intended as a contract. Course availability may vary from fall to spring semester and may be subject to modification or change.

Some students may be able to bypass one or more courses in the calculus sequence MATH 1511G - MATH 1521G - MATH 2530G. The calculus sequence and Linear Algebra provide knowledge that is basic to further work, and students are advised to complete them or their equivalent as early as possible.

First Year		
Fall		**Credits**
MiniSemester 1		
ENGL 1110G	Composition I	4
MATH 1511G	Calculus and Analytic Geometry I [1]	4
MiniSemester 2		
CSCI 1220	Computer Programming Fundamentals: Python	3

Area III: Lab Science [2]		4
	Credits	**15**
Spring		
MiniSemester 1		
ENGL 2210G	Professional and Technical Communication	3
MATH 1521G	Calculus and Analytic Geometry II	4
MiniSemester 2		
Area III/IV: Lab Science OR Social/Behavioral Science [2]		3-4
CSCI 1235	R Programming I	3
Elective [3]		2
	Credits	**15-16**
Second Year		
Fall		
MiniSemester 1		
COMM 1115G	Introduction to Communication	3
MATH 2530G	Calculus III	3
Area VI: Creative and Fine Arts Course [2]		3
MiniSemester 2		
MATH 1350G	Introduction to Statistics	3
Area V: Humanities Course [2]		3
	Credits	**15**
Spring		
MiniSemester 1		
VWW Course [4]		3
Elective [3]		3
MiniSemester 2		
MATH 2415	Introduction to Linear Algebra	3
I E 311	Engineering Data Analysis	3
Elective [3]		3
	Credits	**15**
Third Year		
Fall		
MiniSemester 1		
Area IV: Social/Behavioral Science Course [2]		3
STAT 3110	Statistics for Engineers and Scientists	3
Elective [3]		3
MiniSemester 2		
VWW Course [4]		3
Upper Division Elective [3]		3
	Credits	**15**
Spring		
MiniSemester 1		
MATH 4230	Applied Linear Algebra	3
Upper Division Elective [3]		3
MiniSemester 2		
I E 413	Engineering Operations Research I	3
MATH 3160	Introduction to Ordinary Differential Equations	3
Elective [3]		3
	Credits	**15**
Fourth Year		
Fall		
MiniSemester 1		
I E 423	Engineering Operations Research II	3
MATH 3140	Introduction to Numerical Methods	3
MiniSemester 2		
Elective [3]		3
STAT 4210	Probability: Theory and Applications	3
Upper Division Elective [3]		3
	Credits	**15**
Spring		
MiniSemester 1		
STAT 4220	Statistics: Theory and Applications	3
E E 465	Machine Learning I	3
MiniSemester 2		
Electives [3]		6
Upper Division Electives [3]		3
	Credits	**15**
	Total Credits	**120-121**

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