Dear Bernadette,

We plan to make a small change to the pre-requisites for both the Statistics major and the Data Analytics major. The update, described below, gives students more flexibility in satisfying the requirement while maintaining the same expected outcomes for the major.

Statistics Major

The Statistics major curriculum requires that students take one of CSE 1221, 1222 or 1223, "Intro to Computer Programming in [Matlab][1221], [C++][1222], [Java][1223]", as a programming pre-requisite for the major. These courses introduce students to the same principles of programming and algorithmic thinking but use different programming languages to do so. Computer Science and Engineering now offers a new course, CSE 1224, "Intro to Computer Programming in Python", which achieves the same objectives but uses Python as the programming language.

Python's use in statistics and data science and analytics has grown considerably over the past few years, and many students in the Statistics major would benefit from using CSE 1224 to satisfy the major's programming pre-requisite.

We plan to allow CSE 1224 to satisfy the programming pre-requisite for the Statistics major.

Data Analytics Major

The Data Analytics major requires that students take CSE 1223 as a programming pre-requisite for the major (with CSE 1222 allowed as an acceptable alternative). As above, We plan to allow CSE 1224 to satisfy the programming pre-requisite for the Data Analytics major.

I have attached updating advising sheets for the major with the change highlighted in red.

I have been in communication with CSE's associate chair for academic administration, their curriculum committee chair and their undergraduate studies chair. The CSE Department agrees that CSE 1224 would be an acceptable alternative to CSE 1221/2/3 and are aware that some enrollment might shift from these courses to CSE 1224. We will work with them to help them anticipate changes to enrollment from our students across these courses.

Please let me know if any other information about these changes are needed.

Thank you,
Chris Hans

THE OHIO STATE UNIVERSITY

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614-292-7157

Major in Data Analytics:

https://data-analytics.osu.edu/

The program requirements for the Bachelor of Science degree with a major in **Statistics** are given below. A minimum of 50 credit hours (excluding GE requirements and prerequisite) is required for completion of the major, and a minimum of 116 credit hours in total is required for the major; 121 hours are required for graduation.

1. Statistics Major Core Requirements

Course Number	Course Title	Credit Hours	Credit Hours Counted Toward Major
Prerequisite			
CSE 1221, 1222, 1223, or 1224	Intro to Computer Programming in { Matlab, C++, Java, Python }	3	0
Required Core			
Math 2153	Calculus III	4	4
Math 2568	Linear Algebra	3	3
Choice of			
(1) Math 3345	Foundations of Higher Mathematics	3	3
Math 4547	Introductory Analysis I	3	3
OR			
(2) 6 hours in	Mathematics at the 2000-level or higher^c	6	6
Stat 3201	Intro Prob Data Analytics	3	3
Stat 3202	Intro Stat Inf Data Analytics	4	4
Stat 3301	Stat Modeling for Discovery I	3	3
Stat 3302	Stat Modeling for Discovery II	3	3
Stat 3410	Principles of Data Collection and Analysis	3	3
Stat 4301	Advanced Statistical Inference	3	3
Stat 4302	Computational Statistics	3	3
Total		38	35

^{c} Approved courses include Math 2255, 2415, 3345, 3350, 3607, 4350, 4507, 4547, 4548, 4556, 4557, 4575, and 4578.

2. Statistics Major Electives

Students must complete an additional 15 hours of electives. This must include 9 hours in Statistics at the 3000-level or higher (Category I: selected from the courses: Stat 3303, 4620, 5510, 5550, 5730, 5740) and 6 hours in Statistics or Mathematics at the 2000-level or higher (Category II: selected from the previous list of Statistics courses and the following Mathematics courses: Math 2255, 2415, 3345, 3350, 3607, 4350, 4507, 4547, 4548, 4556, 4557, 4575, 4578). Students wishing to pursue graduate work in Statistics may wish to take 6 of these hours from the Mathematics Department in order to prepare for more theoretically-oriented graduate work. In particular, the sequence Math 3345, Math 4547, and Math 4548 is recommended for students planning to attend graduate school.

3. General Education Requirements

Students must satisfy the General Education requirements for the Bachelor of Science degree in the College of Arts and Sciences. Note that Math 1151[a] and Math 1152 are required for the major core curriculum. It is suggested that students use these courses to satisfy the categories shown in the table below. Stat 1550 is suggested to satisfy Data Analysis requirement, as shown below.

GE Category	Suggested or Required Course	Minimum Course Credit Hours	Minimum Category Credit Hours
Writing			6
Literature			3
Arts			3
Mathematics	Math 1151[a]	5	5
Data Analysis	Stat 1550[b]		3
Natural Science			10
Historical Study			3
Social Science			6
Culture and Ideas or Historical Study			3
Language			12
Open Option 1	Math 1152	5	5
Open Option 2		3	3
ACS/NMS Survey			1
Total			63

[a] Math 1151 may be replaced by Math 1141.
[b] Stat 1550 may be replaced by Statistics 1000–2000 level GE data analysis courses (1350, 1430, 1430H, 1450, 2450, and 2480) or an upper-level elective if a student enters the program after their first year.

4. Sample Four-Year Curriculum

Year	Autumn		Spring	
	Course	**Hours**	**Course**	**Hours**
1	ASC 1100	1	Stat 1550: Stat Reasoning	3
	Math 1151: Calc I	5	Math 1152: Calc II	5
	GE Open Option	3	English 1110	3
	GE Foreign Language I	4	GE Foreign Language 2	4
	Elective	2		
		Total: 15		Total: 15
2	Math 2153: Calc III	4	Math 2568: Linear Algebra	3
	Stat 3201: Intr Prob for DA	3	Stat 3202: Intr Stat Inf DA	4
	GE Physical Science (lab)	4	GE Writing Level 2	3
	GE Foreign Language 3	4	CSE 122x: Intro to Comp. Prog.	3
			Elective	3
		Total: 15		Total: 16
3	Stat 3301: Stat Model Disc 1	3	Stat 3302: Stat Model Disc 2	3
	Stat 3410: Prin Data Collect	3	Stat elective[b]	3
	Math 3345: Found Higher Math[a]	3	Math 4547: Intro Analysis I[a]	3
	GE Social Sciences	3	GE Biological Sciences (lab)	4
	GE Natural Science	3	GE Social Sciences	3
		Total: 15		Total: 16
4	Stat 4301: Adv Stat Inf	3	Stat 4302: Comp Stat	3
	Stat elective[b]	3	Stat elective[b]	3
	Stat/Math Elective[c]	3	Stat/Math Elective[c]	3
	GE Historical Study	3	GE Cultural & Ideas or Hist. Study	3
	GE Arts	3	GE Literature	3
		Total: 15		Total: 15

[a] The sequence Math 3345 - Math 4547 is one option; this can be replaced with two Math courses at the 2000-level or higher selected from a list of approved electives (see page 1).

[b] Category I Stat Elective: Choice of any of the following Stat classes: Stat 3303, 4620, 5510, 5550, 5730, 5740.

[c] Category II Stat/Math Elective: Choice of any of the following Stat or Math classes: Stat 3303, 4620, 5510, 5550, 5730, 5740; Math 2255, 2415, 3345, 3350, 3607, 4350, 4507, 4547, 4548, 4556, 4557, 4575, 4578.

BACHELOR OF SCIENCE (BS) DATA ANALYTICS: GENERIC SPECIALIZATION

Major Prerequisites (13-26 hours)

These courses may overlap with the General Education curriculum where appropriate. Courses in **BOLD** must be completed before submitting an application to the Data Analytics major. Online options may be available for courses marked ●. Please refer to the ASC General Education course list for GE online courses.

Department	Course	Hours	Term Offered
Math	**Math 1151** ● (1161 or 1181H) – Calculus I	5	AU/SP/SU
	Math 1152 ● (1172, 2162 or 2182H) – Calculus II	5	AU/SP/SU
Computer Science & Engineering	***CSE 1223** – Computer Programming in Java or ***CSE 1224** – Computer Programming in Python	3	AU/SP/SU
Specialization-specific prereqs	(See data-analytics.osu.edu for specific prereqs)	0-13	AU/SP/SU

*CSE 1222 or CSE placement level A can also fulfill this prerequisite; however, 1223 or 1224 are *strongly* preferred.

Core Requirements (51 hours)

The Data Analytics Core courses follow a strict pre-requisite structure. Some courses are only offered once per year. Failure to successfully enroll in and complete these courses will delay graduation.

Department	Course	Hours	Term Offered
Math	Math 2568 ● – Linear Algebra	3	AU/SP/SU
Industrial & Systems Engineering	ISE 3230 – Systems Modeling and Optimization	3	AU
Computer Science & Engineering	**CSE 2221** – Software I: Software Components	4	AU/SP/SU
	CSE 2231 – Software II: Development & Design	4	AU/SP/SU
	CSE 2321 – Foundations I: Discrete Structures	3	AU/SP/SU
	CSE 2421 or 3430 – Systems I: Computer Systems	4	AU/SP/SU
	CSE 3241 – Databases I: Computer Architecture	3	AU/SP/SU
	CSE 3244 or 5242 – Adv. DB & Cloud Computing	3	AU/SP
	CSE 5243 – Data Mining	3	AU/SP
	CSE 5544 or ISE 5760 – Data Visualization	3	AU/SP
Statistics	STAT 3201 – Probability for Data Analytics	3	AU/SP
	STAT 3202 – Statistical Inference for Data Analytics	4	AU/SP/SU
	STAT 3301 – Statistical Modeling for Discovery I	3	AU
	STAT 3302 – Statistical Modeling for Discovery II	3	SP
	STAT 4620 – Statistical Learning	2	AU
	STAT 3303 – Statistical Decision Making	3	SP

Data Analytics Specialization (14-19 hours)

Specialization electives (See data-analytics.osu.edu for specialization specific requirements)	10-13
CSE 59xx/STAT 4911 – Capstone in Data Analytics (Senior year)	4-6

GENERAL EDUCATION

Please visit http://artsandsciences.osu.edu/academics/current-students/advising/ge for a list of the General Education curriculum requirements.

Revised 11/21