MATHEMATICS - DATA SCIENCE (BACHELOR OF SCIENCE)

The Mathematics major consists of prescriptive common courses, prescriptive concentration courses, and elective courses. The Data Science concentration emphasizes coursework designed to give the student sound fundamental skills in statistical and computing concepts relating to the quantitative analysis of data (39 hours).

Course	Title	Credits
Jax MIX General Education Curriculum		**41**

The Mathematics major requires completion of the following common courses with a "C" or better:

Course	Title	Credits
MS 125	Calculus I	4
MS 126	Calculus II	4
MS 227	Calculus III	4
MS 300	Introduction to Advanced Mathematics (WI)	3
MS 344	Differential Equations	3
MS 352	Linear Algebra	3
MS 415	Advanced Calculus I (WI)	3
MS 441	Abstract Algebra I (WI)	3

The Data Science concentration requires completion of the following concentration courses with a "C" or better:

Course	Title	Credits
MS 302	Applied Probability and Statistics	3
MS 444	Applied Statistical Methods	3

This concentration also requires two elective courses selected from the departmental list of approved mathematics electives;

- At least one MS course numbered 300 or higher[1]
- At least one MS course numbered 400 or higher

[1] Excludes MS 322 Selected Survey of Secondary School Mathematics (3), MS 331 Peer Educator (1), and MS 332 Peer Educator (2).

In addition to the common, concentration, and elective courses, this concentration requires the following support courses:

Course	Title	Credits
PHS 221	Physics for Scientists and Engineers I w/Lab	4
CS 230	Fundamentals of Computing [2]	3
CS 306	Introduction to Data Science [2]	3
CS 445	Predictive Analysis [2]	3
CS 480	Special Topics in Data Science [2]	3

[2] Grade of C or better is required for these Computer Science (CS) courses.

A minor is not required for students majoring in Mathematics.

Note: This schedule reflects the mathematics program beginning with MS 125 (https://catalog.jsu.edu/search/?P=MS%20125) Calculus I (4). Freshman Mathematics majors needing additional preparation before beginning calculus will be placed in the appropriate algebra or precalculus courses that provide this preparation. See advisor.

In addition to courses noted below, candidates for graduation must successfully complete all JSU Academic Regulations. **More information about Jax MIX requirements (https://catalog.jsu.edu/undergraduate/jax-mix-requirements/) and Alabama Transfers equivalents (https://catalog.jsu.edu/undergraduate/alabama-transfers-equivalents/) can be found in their respective section of the catalog.**

Freshman		
Fall		**Hours**
Jax MIX Communication: EH Composition sequence		3
MS 125	Calculus I (Jax MIX Communication)	4
Jax MIX Experience: History		3
CS 230	Fundamentals of Computing [1]	3
SSC 101	First Year Experience	0
	Hours	**13**
Spring		
Jax MIX Communication: EH Composition sequence		3
Jax MIX Expression: Fine Arts		3
Jax MIX Experience (History if sequence) [2]		3
Jax Max Experience: Social/Behavioral Science		3
MS 126	Calculus II	4
	Hours	**16**
Sophomore		
Fall		
Jax MIX Expression: Literature		3
EH 141	Speech (Jax MIX Communication)	3
PHS 221	Physics for Scientists and Engineers I w/Lab (Jax MIX Inquiry)	4
MS 227	Calculus III	4
	Hours	**14**
Spring		
Jax MIX Expression (Literature if sequence) [2]		3
Jax MIX Inquiry: Science		4
Jax MIX Experience: Social/Behavioral Science		3
MS 300	Introduction to Advanced Mathematics (WI)	3
MS 352	Linear Algebra	3
	Hours	**16**
Junior		
Fall		
CS 306	Introduction to Data Science [1]	3
MS 344	Differential Equations	3
General Electives		10
	Hours	**16**
Spring		
MS 441	Abstract Algebra I (WI)	3
MS 444	Applied Statistical Methods	3
MS 300+ Elective		3
General Electives		6
	Hours	**15**
Senior		
Fall		
CS 445	Predictive Analysis [1]	3
MS 302	Applied Probability and Statistics	3
MS 415	Advanced Calculus I (WI)	3
General Electives		6
	Hours	**15**

Spring		
CS 480	Special Topics in Data Science [1]	3
MS 400+ Elective		3
General Electives		9
	Hours	**15**
	Total Hours	**120**

[1]   Grade of C or better is required for these Computer Science (CS) courses.

[2]   Either a history sequence or a literature sequence is required.