

B.S. Degree – Data Analytics Major Degree Requirements

Business Analytics Specialization

The program requirements for the Bachelor of Science degree with a major in Data Analytics and a specialization in **Business Analytics** are given below. A minimum of 129 total degree hours are required for graduation.

The Required Core courses follow a strict prerequisite structure. Some courses are only offered once per year. Failure to successfully enroll in and complete these courses *will* delay graduation.

Data Analytics Major Requirements

Course Number	Course Title	Credit Hours	Terms Offered
Prerequisites			
CSE 1223 or 1224 ^a	Intro to Computer Programming in Java or Python	3	AU/SP/SU
Math 1152 ^b	Calculus II	5	AU/SP/SU
ECON 2001.01	Principles of Microeconomics	3	AU/SP/SU
ECON 2002.01	Principles of Macroeconomics	3	AU/SP/SU
Required Core			
Math 2568	Linear Algebra	3	AU/SP/SU
ISE 3230	Systems Modeling and Optimization	3	AU
CSE 2221 ^b	Software I: Software Components	4	AU/SP/SU
CSE 2231	Software II: Development and Design	4	AU/SP/SU
CSE 2321	Foundations I: Discrete Structures	3	AU/SP/SU
CSE 2421 or 3430	Systems I: Computer Systems and Organization	4	AU/SP/SU
CSE 3241	Databases I: Computer Architecture	3	AU/SP/SU
CSE 3244 or 5242	Data Management in the Cloud or Advanced Database Systems	3	AU/SP
CSE 5243	Data Mining	3	AU/SP
CSE 5544 or ISE 5760	Data Visualization	3	AU/SP
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
TOTAL		51	

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

^b Math 1152 and CSE 2221 must be completed before applying to the Data Analytics major program.

Business Analytics Specialization

BUSADM 3630.05	Business Analytics Immersion Course	3	AU (Junior year)
BUSADM 3632.05	Business Analytics Immersion Project	3	SP (Junior year)
Electives	Choose 9 credit hours from list below	9	AU/SP/SU
TOTAL		15	

Specialization Electives: Choose 9 credit hours from the electives listed below.

Courses are grouped to show possible focus areas. Students may select any combination of courses to meet the 9-credit hour requirement. The prerequisites listed below are strictly enforced.

ELECTIVES: FINANCE FOCUS			
COURSE	TITLE	HOURS	PREREQUISITES
BUSFIN 3120	Foundations of Finance	3	ACCT 2000 & ECON 2001 & MATH 1130 or higher & CSE 1100 or higher; not open to students with credit for 3220
BUSFIN 3220	Business Finance	3	ECON 2001 & 2002 & ACCT 2300 (prereq or concur); not open to students with credit for 3120
BUSFIN 3222	Foundations of Investments	3	BUSFIN 3120 or 3220 & ACCT 2000
BUSFIN 3250	International Finance	3	BUSFIN 3120 or 3220 & ACCT 2000
BUSFIN 4201	Financial Data	1.5	BUSFIN 3220 & ACCT 2300 & STAT 3201 & 3202

ELECTIVES: ACCOUNTING FOCUS			
COURSE	TITLE	HOURS	PREREQUISITES
ACCTMIS 2000	Foundations of Accounting	3	None
ACCTMIS 3600	Intro to Accounting Information Systems	3	ACCT 3200 (Which requires ECON 2001 & ACCT 2300 & STAT 3201 & 3202)
ACCTMIS 4210	Financial Accounting	3	ACCT 3201 (Which requires ACCT 3200)
ACCTMIS 4310	Management Accounting	3	ACCT 3300 (Which requires ECON 2001 & ACCT 2300 & STAT 3201 & 3202)
ACCTMIS 4650	Decision Support Expert Systems	3	CSE 3232 & STAT 3201 & 3202

ELECTIVES: CUSTOMER INSIGHT FOCUS			
COURSE	TITLE	HOURS	PREREQUISITES
BUSML 3150	Foundations of Marketing	3	ECON 2001; not open to students with credit for 3250
BUSML 3250	Principles of Marketing	3	ECON 2001; not open to students with credit for 3150
BUSML 4202	Marketing Research	3	BUSML 3150 or 3250 & STAT 3201 & 3202
BUSML 4210	Advanced Market Research	1.5	BUSML 4201 & 4202
BUSML 4211	Market Analysis, Development, and Forecasting	1.5	BUSML 4201 & 4202
BUSML 4212	Customer Relationship Mgmt	1.5	BUSML 4201 & 4202

ELECTIVES: OPERATIONS MANAGEMENT AND LOGISTICS FOCUS			
COURSE	TITLE	HOURS	PREREQUISITES
BUSOBA 3230	Intro to Operations Mgmt	3	ECON 2001 & 2002 & STAT 1430 or higher
BUSOBA 4250	Six Sigma Principles	3	ACCT 2000 & BUSMGT 3230 & STAT 3201 & 3202
BUSOBA 4251	Six Sigma Projects	3	BUSMGT 4250
BUSML 3380	Logistics Management	1.5	ECON 2001 & 2002
BUSML 4382	Logistics Analytics	3	BUSML 4380 & STAT 3201 & 3202
BUSML 4386	Logistics Tech and Application	1.5	BUSML 3380 & STAT 3201 & 3202

General Education and College of Arts & Sciences Requirements

Students must satisfy the General Education requirements for the Bachelor of Science degree in the College of Arts and Sciences. Math 1151^c is required for the major core curriculum; it is suggested that students use this course to satisfy the category indicated in the table below. Students in the Data Analytics major satisfy the GE's embedded literacy requirements by taking Stat 3301 (embedded literacy in data analysis) and Stat 3302 (embedded literacies in advanced writing and technology).

GE Category ^d	Suggested Course	Category Credit Hours
Launch Seminar (GENED 1201)		1
F: Writing and Information Literacy		3
F: Mathematical and Quantitative Reasoning/Data Analysis	Math 1151 ^c (5 cr. hrs.)	3-5
F: Literary, Visual and Performing Arts		3
F: Historical and Cultural Studies		3
F: Natural Science		4-5
F: Social and Behavioral Sciences	ECON 2001.01	3
F: Race, Ethnicity, and Gender Diversity		3
T: Citizenship for a Diverse and Just World		4-6
T: Student Choice		4-6
Reflection Seminar (GENED 4001)		1
World Languages		12
ARTSSCI 1100.xx Survey		1
Minimum Total Credit Hours (w/Math 1151)		51

^c Math 1151 may be replaced by Math 1140 and 1141.

^d F: GE Foundations; T: GE Theme.

Sample Four-Year Curriculum

This should be used as a **guide** only. Semester offerings are subject to change. Students should meet with the Data Analytics academic advisor every semester to ensure an on-time graduation.

Year	Autumn		Spring	
	Course	Hours	Course	Hours
1	ASC 1100.10	1	GENED 1201	1
	MATH 1151/1141/1161/1181H	5	MATH 1152/2162/1172/2182H	5
	CSE 1223, 1224, or equiv	3	CSE 2221	4
	GE World Language 1	4	GE World Language 2	4
	GE Writing and Info Literacy	3	ECON 2001.01 (GE Social and Behavioral Sciences)	3
	Total: 16		Total: 17	
2	CSE 2231	4	MATH 2568	3
	CSE 2321	3	CSE 2421 or 3430	4
	STAT 3201	3	STAT 3202	4
	GE World Language 3	4	GE Natural Science	4-5
	ECON 2002.01	3		
	Total: 17		Total: 15-16	
3	ISE 3230	3	CSE 3244	3
	CSE 3241	3	STAT 3302	3
	STAT 3301	3	BUSADM 3632.05	3
	BUSADM 3630.05	3	Business Analytics Elective <i>f</i>	3
	GE Citizenship for a Diverse and Just World	3	GE Literary, Visual and Performing Arts	3
	GE Race, Ethnicity, and Gender Diversity	3		
		Total: 18		Total: 15
4	CSE 5243	3	CSE 5544 or ISE 5760	3
	STAT 4620	2	STAT 3303	3
	Business Analytics Elective <i>f</i>	3	Business Analytics Elective <i>f</i>	3
	GE Thematic Pathway Choice <i>e</i>	3	GE Historical and Cultural Studies	3
	GE Citizenship for a Diverse and Just World	3	GE Thematic Pathway Choice <i>e</i>	3
	Elective	1	GENED 4001	1
		Total: 15		Total: 16

e The 4–6 GE Thematic Pathway Choice credit hours must be taken in the same theme.

f From approved list of major specialization elective courses.