

# BACHELOR OF SCIENCE (BS) DATA ANALYTICS: BIOMEDICAL INFORMATICS SPECIALIZATION

## Major Prerequisites (26 hours)

These courses may overlap with the General Education curriculum where appropriate. Courses in **BOLD** should be completed before submitting an application to the Data Analytics major.

Department	Course	Hours	Term Offered
Math	<b>Math 1151</b> (1161 or 1181H) – Calculus I	5	AU/SP/SU
	<b>Math 1152</b> (1172, 2162 or 2182H) – Calculus II	5	AU/SP/SU
Computer Science & Engineering	<b>*CSE 1223</b> – Computer Programming in Java	3	AU/SP/SU
Chemistry	CHEM 1110/1210/1250/1610 – Chemistry I	5	AU/SP/SU
Biology	BIO 1113 – Energy Transfer and Development	4	AU/SP/SU
	BIO 1114 – Form, Function, Diversity, and Ecology	4	AU/SP/SU

\*CSE 1222 or CSE placement level A can also fulfill this prerequisite; however, 1223 is *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	Terms Offered
Math	Math 2568 – Linear Algebra	3	AU/SP/SU
Industrial & Systems Engineering	ISE 3230 – Systems Modeling and Optimization	3	AU
Computer Science & Engineering	<b>CSE 2221</b> – 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
	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

## Biomedical Informatics Specialization (21 hours)

MOLGEN 5660 – Molecular and Cellular Biology (MOLGEN 5650 & 4500 approved as alternates)	5
BMI 5710 – Intro to Biomedical Informatics	3
BMI 5720 – Intro to Imaging Informatics (any BMI 5000-level approved as alternate)	3
BMI 5730 – Intro to Bioinformatics	3
BMI 5740 – Intro to Research Informatics	3
STAT 4911 – Capstone in Data Analytics ( <b>SP Senior year</b> )	4

## GENERAL EDUCATION

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