

# MINOR IN COMPUTATIONAL DATA ANALYSIS

The Computational Data Analysis minor will provide students with the necessary mathematical and statistical background to develop and apply various data analysis techniques to real world datasets. The minor has three main objectives related to knowledge, skills, and application:

1. provide students with foundational knowledge of topics such as probability and statistics, algorithms and data structures to solve data analysis problems arising in practical applications,
2. develop students' skill in software development techniques using one or more high level programming languages relevant to data analytics,
3. enable students to effectively apply computational methods to solve exemplar data analysis problems arising in relevant applications.

Minor Program of Study & Guidelines

## Program of Study

This minor must comprise at least 15 credit hours, of which at least 9 credit hours are upper-division coursework (numbered 3000 or above).

Code	Title	Credit Hours
<b>Prerequisite</b>		
CS 1331	Introduction to Object Oriented Programming <sup>1</sup>	
<b>Required Courses</b>		
CX 4240	Introduction to Computing for Data Analysis	3
CX 4242	Data and Visual Analytics	3
<b>Probability and Statistics</b>		
Select one of the following:		3
MATH 3215	Introduction to Probability and Statistics	
MATH 3225	Honors Probability and Statistics	
ECE 3077	Prob/Stats for ECE	
ISYE 2027	Probability with Applications	
<b>Computational Methods</b>		
Select one of the following:		3
CX 4010	Computational Problem Solving for Scientists and Engineers	
CS 4400	Introduction to Database Systems	
CS 4460	Introduction to Information Visualization	
<b>Electives</b>		
Select one of the following:		3
BIOL 4150	Genomics and Applied Bioinformatics	
CEE 3010	Geomatics	
CS 3630	Introduction to Perception and Robotics	
CS 4400	Introduction to Database Systems	
CS 4460	Introduction to Information Visualization	
CS 4495	Computer Vision	
CX 4010	Computational Problem Solving for Scientists and Engineers	
CS 4803	Special Topics (Computational Sustainability)	
EAS 4430	Remote Sensing and Data Analysis	

EAS 4480	Environmental Data Analysis
ECE 4270	Fundamentals of Digital Signal Processing
ECE 4560	Introduction to Automation and Robotics
ECE 4580	Computational Computer Vision
ECE 4823	Special Topics (Game Theory and Multi-agent Systems)
ISYE 4311	Capital Investment Analysis
ISYE 3232	Stochastic Manufacturing and Service Systems
MGT 4067	Financial Markets: Trading and Structure
MGT 4068	Fixed Income
PSYC 4031	Applied Experimental Psychology

**Total Credit Hours** **15**

<sup>1</sup> CS 1331 prerequisite for the minor required (this course **does NOT** count toward the 15 credit hours required for minor) and a grade of A or B is required

- A CS Minor application is required
- No Special Problems or Internship coursework may be used towards the CS minor.
- All minor courses must be completed with a grade of C or higher.
- A maximum of 6 credit hours of Special Topics courses may be included in a minor.
- A maximum of 3 credit hours of transfer credit may be used to satisfy the course requirements for a minor. This includes courses taken at another institution or credit earned through the AP or IB program, assuming the scores meet Georgia Tech minimum standards.
- It is the **major advisor's responsibility** to verify that students are using only courses from the designated block(s) from the student's major field of study that are allowed to satisfy a minor program, that they are not using any Core Area A-E courses (including humanities and social sciences), and that they are not using any courses for more than one minor or certificate. Any free elective course used to satisfy the course requirements of the student's major degree program may also be used to satisfy the course requirements for a minor.