Data Analytics

What is Data Analytics?

The advent of ubiquitous computers, networks and their ability to interact with the physical world has led to an increasing explosion of data. This presents both opportunities and challenges. Data can lead to new scientific and medical discoveries in areas such as genomics. Increased data availability and analysis capability can improve the quality of social, economic and business modeling. But, data can also be misused as well. Data analytics combines all of these aspects – handling large amounts of data, methods of sophisticated data analysis, and awareness, and safeguards for data security and privacy issues.

"The ability to take data – to be able to understand it, to process it, to extract value from it, to visualize it, to communicate it – that’s going to be a hugely important skill in the next decades.”
– Hal Varian, ‘Chief Economist, Google

What kind of jobs will the Data Analytics concentration lead to?

Potential career options for Data Analytics are:
Data Analyst, Data Mining Specialist, Data Visualization Specialist, Data Scientist, Decision Support Specialist

What classes make up the Data Analytics concentration?

All students in the Data Analytics concentration MUST take the following classes:

I INF 300 Probability and Statistics for Data Analytics (3)
Probability and statistical methods applied to the analysis of various kinds of data. Includes underlying theoretical justification and appropriateness for different models and analyses. Conceptual and implemented approaches to data analysis. Prerequisite: A MAT 108

I CSI 131 Introduction to Data Analytics: Seeking Information in Data with Computation (3)
This course will offer an introduction to the key terms, concepts and methods in data analysis, with an emphasis on developing critical analytical skills through hands-on exercises of actual data analysis tasks. In addition, you will learn and practice basic programming skills to use software tools in data analysis.

Then you will pick 2 classes from this list:

I INF 407 Modern Issues in Databases
I INF 408 Analysis, Visualization, and Prediction in Analytics
I INF 451 Bayesian Data Analysis and Signal Processing
I IST 433 Information Storage and Retrieval
I IST 431 Data Mining
I IST 432 Network Science
I IST 436 Machine Learning