

# Visual Guide to CIS Emphases

All emphases share the same Core and Capstone

CIS 100: IT & Society

CIS 112: Database Concepts

CIS 220: Object-Oriented Programming

CIS 271: Digital and Social Media

CIS 400: Service-Learning Project Management

All emphases require students to take six additional CIS courses with three at the upper level and meet their User Needs, Analysis and Modeling, Coding and Production, and Design and Interaction requirements while also selecting electives according to the following rules:

## Computer Science

CIS 320: Data Structures

MTH 151: Calculus I

MTH 152: Calculus II

MTH 211: Foundations of Higher Mathematics

MTH 217: Linear Algebra

Take One of:  
CIS 230: Artificial Intelligence  
CIS 241: Data Mining  
CIS 341: Numerical Computation

Take One of:  
MTH 311: Introduction to Number Theory  
MTH 330: Introduction to Graph Theory  
MTH 361: Discrete Mathematical Structures

## Interaction Design

CIS 301: Human Computer Interaction

Take Two of:  
CIS 105: Game Design and Development  
CIS 245: Information Visualization  
CIS 275: Web Design  
CIS 375: Advanced Web and Mobile Development

## Data Science

Take Three of:  
CIS 230: Artificial Intelligence  
CIS 241: Data Mining  
CIS 245: Information Visualization  
CIS 320: Data Structures  
CIS 341: Numerical Computation

## Digital Media

Take Three of:  
CIS 265: Digital Video  
CIS 275: Web Design  
CIS 361: Digital Imaging  
CIS 375: Advanced Web and Mobile Development

## Web and Mobile Technologies

CIS 275: Web Design

Take Two of:  
CIS 245: Information Visualization  
CIS 280: Scripting Languages  
CIS 375: Advanced Web and Mobile Development

Specific offerings of the topics courses CIS 297 and CIS 397 may also count towards various CIS emphases..