MASTER OF SCIENCE IN COMPUTER INFORMATION SYSTEMS - DATA SCIENCE CONCENTRATON

Code	Title	Hours
Required Courses		
CS 560	Fundamentals of Data Science	3.0
CS 563	Knowledge Discovery and Data Mining	3.0
Elective		
Select one of the following:		3.0
CS 561	Artificial Intelligence	
CS 562	Machine Learning	
CS 572	Distributed Databases and Big Data	
Total Hours		**9**

The data science concentration provides students with essential background, understanding, knowledge, and tools for discovering knowledge from data. Data science is the confluence of many areas including machine learning, artificial intelligence, information storage and retrieval, statistics and operations research. The courses cover the complete knowledge discovery process and students learn skills such as sampling techniques, data and knowledge representations, cleansing and preprocessing of data sets, machine learning algorithms to build models for forecasting, classification and unsupervised learning tasks, evaluating and comparing models, and combining models through techniques such as boosting and stacking. Big Data, Data Warehousing and OLAP are also covered as well as data and knowledge visualization.

Admissions Requirements

The admission requirements for the Computer Information systems program are:

1. one semester of calculus
2. one semester of statistics, and
3. two semesters of computer programming

In addition to meeting all the general requirements of Graduate Education and of the department as stated above, candidates for the master's degree in computer information systems must satisfy the following requirements:

1. At least 21 of the 33 semester hours required must be earned in courses labeled as CIS. At most, six hours may be earned in approved courses other than those labeled CS or CIS.
2. To satisfy the core (breadth) requirements, a student must either take the following courses or show the evidence of having completed equivalent courses elsewhere:
   a. CIS 530 Information Technology Infrastructure
   b. CIS 571 Database Management Systems
   c. CIS 575 Computer Information Systems Analysis. Design and Integration
   d. CIS 591 CIS and IT Project Management.
3. To satisfy the depth requirements, the student must take three courses from one of the concentrations offered by the department. No course taken to satisfy the core requirements (see items 2) may be counted as one of the three courses in this requirement. Students are admitted into the Master of Science in Computer Information Systems program and declare a concentration after beginning their coursework.

Concentration Requirements

The concentration consists of 9 semester hours of study including 6 semester hours of required courses and 3 semester hours of elective courses as outlined below.