MANAGEMENT SCIENCE AND INFORMATION SYSTEMS

Emerging technologies, the use of data analytics and artificial intelligence, and the critical need for understanding cybersecurity principles continues to dramatically alter our world.

The Department of Management Science and Information Systems (MSIS) is a national leader in providing high quality education in the areas of information systems, data science/data analytics, and cybersecurity. Our graduates are prepared for a variety of careers that regularly appear in the Top 20 fastest growing occupations as forecasted by the Bureau of Labor Statistics. Best of all – these skills and aptitudes prepare our graduates for the future workplace where technology, data science and cybersecurity will play even more important roles.

Our degrees are for problem solvers – those who want to learn how to use technology, data, artificial intelligence, machine learning, operations research, and other approaches to make processes, companies, and the world more effective and efficient.

The Department of Management Science and Information Systems offers two undergraduate majors – management information systems (MIS), and Data Analytics (DA). The MIS undergraduate degree has two possible options for students to specialize – one option in data science and another option in information assurance (IA). Note that information assurance is a National Security Agency (NSA) term for cybersecurity.

Additionally, the MSIS Department also offers graduate studies leading to master's degrees in management information systems (MIS), and a PhD degree in business administration with an option in MIS.

Management Information Systems (MIS)

The MIS degree focuses on the business applications of information systems. This includes emphasizing necessary skills required in the analysis, development, evaluation and implementation of various information and data-driven technologies critical for today's global organizations. The integration of information technology throughout all aspects of business coupled with the critical need for responsive information systems has created a strong demand for graduates in this area.

Beyond general education requirements and core business classes, the MIS major will take specialized courses in systems analysis and design, web development, database design and management, data science techniques and applications, data communications and cybersecurity, project management, among others.

The Data Science option for the MIS degree provides additional depth in quantitative tools that are critical in today's data-driven organization. This includes classes in visualization and descriptive, predictive, and prescriptive analytics.

The Information Assurance option for the MIS degree takes advantage of OSU's long-standing relationship with the NSA in providing hands-on classes in technical and managerial issues related to cybersecurity and information assurance.

Data Analytics (DA)

The Data Analytics degree provides an in-depth focus on the data related skills and analytic competencies needed to be a data analyst, a business intelligence analyst and/or a data scientist. It is a much more specific degree and much more in-depth coverage of data and analytics than the MIS degree with a Data Science option.

Beyond general education requirements and core business classes, the Data Analytics major will take specialized courses in database design and management, data wrangling, visualization, and a variety of sophisticated data science techniques and applications including applied artificial intelligence and machine learning, among other electives that can come from other areas of analytics including supply chain analytics, marketing analytics, etc.

Undergraduate Certificates

To support students who are not majoring in MIS or Data Analytics but who want to gain a foundational set of expertise in various topics, the MSIS Department offers a series of certificates that range from 16 to 18 hours in length.

Cyber Systems – foundational cybersecurity classes.

Business Analytics – starting point for those interested in data analytics competencies.

Data Systems – the 'data wrangling' expertise portion of the data analytics degree.

Information Systems Development – Core competencies needed to build information systems.

Supply Chain Management – cross disciplinary courses related to another emerging area of importance in business, managing the supply chain.