ADVANCED ANALYTICS (M.S. IN DATA SCIENCE AND BUSINESS ANALYTICS)

Analytics is a fast-growing STEM field with a high demand for individuals who possess the skills and expertise necessary to navigate the process of transforming data into insight for making sound business decisions. It's the reason that the WSU James and Patricia Anderson College of Engineering and the Mike Ilitch School of Business launched an innovative and interdisciplinary new master's program in data science and business analytics. Leaders in this field use data to fundamentally rethink all facets of business in many sectors, including manufacturing, supply chain, finance, and healthcare.

Admission Requirements

Admission to any graduate program is contingent upon admission to the Graduate School (https://bulletins.wayne.edu/graduate/general-information/admission/). Applicants must have earned an undergraduate degree in a STEM discipline, business discipline, or closely related field from an accredited college or university with a GPA of 3.0 or above. Please visit the program webpage (https://engineering.wayne.edu/data-science-program/admissions/) for a complete list of admission requirements.

Prerequisite Knowledge

Applicants from a non-STEM discipline applying for the Data Computing major will need to have successfully completed Calculus I, Calculus II and Elementary Linear Algebra, or the course equivalent at another institution, and have completed significant coursework in computer programming.

Graduate Record Examination (GRE) and Graduate Management Admission Test (GMAT)

The GRE is not required for applicants who possess an undergraduate GPA of 3.0/4.0 or above (or the equivalent from a foreign institution). Applicants with a GPA that is below a 3.0/4.0 are reviewed on a case-by-case basis and are expected to provide a GRE score report that is no more than five years old.

Program Requirements

Students must complete a total of 30 credits in order to earn the M.S. in Data Science and Business Analytics with a major in Advanced Analytics.

The interdisciplinary core includes 9 credits of coursework across business, computer science, and industrial engineering. On top of this integrated breadth of study covering the core areas of data science and business analytics, each student has 9 credits of major courses to give them depth in an engineering, business, or analytics area. Each student's 6 credits of elective choices can be personalized to support their individual career goals. The final piece of the curriculum is a 6-credit applied analytics practicum, in which students will work with companies and organizations on real analytics problems. All course work must be completed in accordance with the regulations of the Graduate School and the James and Patricia Anderson College of Engineering (http://bulletins.wayne.edu/graduate/college-engineering/academic-regulations/).

Code	Title	Credits
Module 1: Core Courses		
DSB 6000	Data Science Strategy & Leadership	3
DSA 6000	Data Science and Analytics	3
DSE 6000	Computing Platforms for Data Science	3
Module 2: Major Courses		
Choose two courses from the following list:		6
CSC 5825	Introduction to Machine Learning and Applications	
CSC 7760	Deep Learning	
CSC 7810	Data Mining: Algorithms and Applications	
IE 7860	Intelligent Analytics	
Choose one course from the following list:		3
DSA 6100	Statistical Learning for Data Science and Analytics	
DSA 6200	Operations Research	
DSA 6300	Decision Analysis and Simulation	
Module 3: Electives		
Elective courses can come from other tracks of the Data Science & Business Analytics program or from outside the program. (See the list of approved electives below.)		6
Module 4: Applied Analytics Practicum		**6**
DSA 7500	Data Science and Analytics Practicum	

Electives

Code	Title	Credits
ACC 7148	ERP Systems and Business Integration	3
ACC 7280	Accounting Data Analytics	3
ACC/TIS 7290	Blockchain: An Accounting and Business Perspective	3
CSC 5050	Algorithms and Data Structures	3
CSC 5220	Fundamentals of Software Testing	3
CSC 6800	Artificial Intelligence I	3
CSC 6860	Digital Image Processing and Analysis	3
CSC 7220	Parallel Computing II: Algorithms and Applications	3
CSC 7260	Distributed Systems	3
CSC 7300	Bioinformatics I: Biological Databases and Data Analysis	3
CSC 7301	Bioinformatics I: Programming Lab	1
ECE 7610	Advanced Parallel and Distributed Systems	3
ECO 7100	Econometrics I	4
ECO 7110	Econometrics II	4
ECO 7120	Econometrics III	4
IE 6010	IoT and Edge AI Programming	3
IE 6325	Supply Chain Management	3
IE 6720	Engineering Risk and Decision Analysis	3
IE 7860	Intelligent Analytics	3
STA 5830	Applied Time Series	3
STA 6840	Applied Regression Analysis	3
TIS 7505	Information Analytics: Inbound Information Technology	3
TIS 7510	Database Management	3
TIS 7570	Advanced Business Analytics	3
TIS 7994	Digital Content Development	3
TIS 7996	Principles for Customer Relationship Management	3