

## Big Data Analytics EFA

Many graduates of Industrial Engineering are recruited to jobs in the field of Big Data Analytics, which is the process of examining big data in an effort to uncover hidden patterns, unknown correlations and other useful information. Every day, we create 2.5 quintillion ( $10^{18}$ ) bytes of data — so much that 95% of the data in the world today has been created in the last two years alone. This data comes from everywhere: sensors used to gather climate information, posts to social media sites, digital pictures and videos, purchase transaction records, and cell phone GPS signals to name a few.

**The following courses are required:**

Semester	Course #	Course	Session	SH	Pre-/Co-Requisites
4 (Spring)	ENGR:2730	Computers in Engineering	F,S	3	ENGR:1300
4 (Spring)	ISE:3149	Information Visualization	S	3	STAT:2020
5 (Fall)	ISE:4172	Big Data Analytics	F	3	STAT:2020
5 (Fall)	ECE:5450	Pattern Recognition	F	3	Junior standing
	Or STAT:4540	Or Statistical Learning	F		Junior standing
6 (Spring)		Technical Elective (choose from Table below)		3	
7 (Fall)	CS:4480	Knowledge Discovery	S	3	
7 or 8		Technical Elective (choose from Table below)		3	

**The following courses are technical electives:**

Course #	Course	Session	SH	Pre-/Co-Requisites
CS:5110	Introduction to Informatics	F	3	
MSCI:3500	Data Mining	All	3	STAT:2020 with a minimum grade of B
CS:2210	Discrete Structures	All	3	
CS:2230	Computer Science II: Data Structures	All	4	ENGR:2730
ECE:3330	Introduction to Software Design	F	3	ENGR:2730
STAT:4740	Large Data Analysis	S	3	ENGR:2730, MATH:2550, and STAT:2020
ISE:6380	Deep Learning	S	3	Knowledge of at least one programming language (Python, C++, MATLAB, etc.)

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