

Dept Number	CS 534	Course Title	Big Data Management and Analytics							
Semester Hours	3	Course Coordinator	Dunren Che							
Catalog Description	This course provides comprehensive and in-depth discussions of big data management and analytics. Main subjects include computation and programming models, management and analytics algorithms, and platforms/frameworks especially designed for big data. The objective of this course is to equip students with the ability to understand, use, and build big data management and analytics systems or tools.									
Textbooks										
<i>Data-Intensive Text Processing with MapReduce.</i> Lin, Jimmy and Dyer, Chris. 2010. Morgan & Claypool.										
References										
<ul style="list-style-type: none"> • <i>Mining of Massive Datasets, Rajaaraman.</i> Anand and Ullman, Jeffrey. 2010. Cambridge. • <i>Hadoop in Action.</i> Lam, Chuck. 2011. Manning. 										
Course Learning Outcomes										
<ul style="list-style-type: none"> • Understanding the key features and issues of Big Data. • To learn the important approaches to Big Data management. • To learn the computation models and frameworks of Big Data. • To study the data mining methods designed/customized for Big Data. 										
Assessment of the Contribution to Student Outcomes										
Outcome →	1	2	3	4	5	6	7			
Assessed →	X	X			X					
Prerequisites by Topic										
CS 430 with a grade of C or better or graduate standing.										

Major Topics Covered in the Course

- Course Introduction {1 lecture}
- Introduction to Big Data {2 lectures}
- Big Data Collection {2 lectures}
- Big Data Storage Systems {5 lectures}
- Big Data Computation Models {5 lectures}
- Big Data Management {5 lectures}
- Big Data Mining {5 lectures}
- Learning Insights from Big Data {5 lectures}
- Big Data Visualization {5 lectures}
- Crowdsourcing {5 lectures}

Total hours: 40 lecture hours plus extra seminar hours.