Dept Number	CS 533	Course Title	Data Mining Techniques and Application
Semester Hours	3	Course Coordinator	Dunren Che
Catalog Description	This course will provide the techniques of data mining and knowledge discovery in databases. Fundamental principles and techniques of data mining are explained as well as their potential in Bioinformatics application. Major topic areas are: data preparation, association rule mining, data classification/prediction, data clustering, and web mining.		

Textbooks

References

Course Learning Outcomes

Assessment of the Contribution to Program Outcomes

Outcome →	1	2	3	4	5	6	7	8	9	10
Assessed →	X	X			X		X			

Prerequisites by Topic

CS 430 or instructor consent

Major Topics Covered in the Course

1. Introduction to Data Mining and Bioinformatics {5 classes}
2. Data Cleaning/Transformation/Preparation {5 classes}
3. Association Rule Mining {5 classes}
4. Classification/Prediction Techniques {5 classes}
5. Clustering Techniques {5 classes}
6. Web Mining and Search Engines {5 classes}
7. Data Mining Application in Bioinformatics

   Data mining in DNA/protein sequence analysis

   Data mining for protein structure analysis

   Data mining in gene expression analysis

   Biomedical literature data mining {10 classes}