Dept Number	CS 438	Course Title	Bioinformatics Algorithms
Semester Hours	3	Course Coordinator	Mengxia Zhu
Catalog Description	This course is an introductory course on bioinformatics algorithms and the computational ideas that have driven them. The course includes discussions of different techniques that can be used to solve a large number of practical problems in biology.		

Textbooks

An Introduction to Bioinformatics Algorithms, Neil C. Jones and Pavel A. Pevzner, August 2004, The MIT Press.

References

Course Learning Outcomes

- To learn basic concepts in molecular biology.
- To learn the basic algorithms used in bioinformatics applications.

Assessment of the Contribution to Program Outcomes

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

Prerequisites by Topic

330 with a grade of *C* or better.

Major Topics Covered in the Course

1. Molecular Biology Primer {7 classes}
2. Exhaustive Search {6 classes}
3. Greedy Algorithms {3 classes}
4. Dynamic Programming Algorithms {6 classes}
5. Divide-and-Conquer Algorithms {3 classes}
6. Graph Algorithms {6 classes}
7. Clustering and Trees {6 classes}
8. Randomized Algorithms {3 classes}