MATH 6343 (BMEN 6389 and BIOL 6385) Computational Biology (3 semester credit hours)
Machine learning and probabilistic graphical models have become essential tools for analyzing
and understanding complex systems biology data in biomedical research. This course
introduces fundamental principles and methods behind the most important high throughput
data analysis tools. Applications will cover molecular evolutionary models, DNA/protein motif
discovery, gene prediction, high-throughput sequencing and microarray data analysis,
computational modeling gene expression regulation, and biological pathway and network
analysis. Prerequisite: Some background in elementary statistics/probability or introductory
bioinformatics, or instructor consent required. (3-0) Y