

COMP 3820: Introduction to Bioinformatics Algorithms

Calendar Description An introduction to problems in molecular biology and computational solutions. Focus on design and analysis of efficient algorithms.

Prerequisites COMP 2080 and MBIO 2410 (C); or permission of instructor. Suggested concurrent requirement: COMP 3170.

Outline

- Course introduction, review. (2 weeks)
- Sequence comparisons: pairwise alignments, multiple sequence alignment. (2 weeks)
- Heuristic sequence comparisons: BLAST and related algorithms. (2 weeks)
- Phylogenetic tree construction. (2 weeks)
- RNA and protein structure prediction. (3 weeks)
- Sequence assembly algorithms. (1 week)

Text M. Zvelebil and J. Baum, Understanding Bioinformatics, Garland Science.