|  |  |
| --- | --- |
| Lecture Topic | Reading Assignment |
| Introduction to Bioinformatics | Gerstein Paper – What is Bioinformatics \* |
| Web Resources for Bioinformatics | Chapter 1 Mount\* |
| Introduction to UNIX | Learning UNIX Chaps. 1, 3, 4, 7 \*  <http://www.ee.surrey.ac.uk/Teaching/Unix/> \* |
| Introduction to PSC Computing | <http://www.psc.edu/publications/pscguide/pscguide.html#environment>  Chap. 4, 5 Gibas |
| UNIX-PSC Lab. |  |
| Introduction to Databases | <http://wofford-ecs.org/DataAndVisualization/DatabaseIntro/index.htm> \* |
| Biological Databases | Chapter 2 Mount \*  Chap. 6, 7 (pp. 159-172) Gibas |
| Biological Databases Lab |  |
| Introduction to Sequences/ Classification Libraries | Chap 8 (pp. 205-210) Gibas |
| Classification Libraries Lab |  |
| Database Searching/Algorithms - Dynamic Programming vs. Heuristics | Chapter 3, 6 Mount\*  Chap. 7 (pp. 173-190) Gibas  **Strategies for Searching Sequence Databases** (2000) \*  *H.B. Nicholas, D.W.II Deerfield, and A.J. Ropelewski,* BioTechniques, Vol 28, No 6, 1174-1191.  <http://www.nrbsc.org/education/tutorials/sequence/db/index.html> \* |
| Database Searching/Scoring Matrices and Information Theory/ | Chapter 4 Mount\*  <http://www.psc.edu/research/biomed/homologous/scoring_primer.html> \* |
| Database Searching/Statistical Significance | Chapter 4 Mount\* |
| Database Searching Laboratory |  |
| Multiple Sequence Alignments | Chapter 5 Mount\*  Chap. 8 (pp. 191-199) Gibas |
| Multiple Sequence Alignments Lab/ Intro to GeneDoc lab |  |
| Abstracting Multiple Sequence Alignments/ Discussion of Multiple Sequence Alignments Lab./ Intro to GeneDoc lab (cont.) | **Strategies for Multiple Sequence Alignment** (2002) \*  *H.B. Nicholas, A.J. Ropelewski, and D.W.II Deerfield,* BioTechniques, Vol 32, No 3, 1-12. |
| Local Patterns and Motifs | Chapter 6 Mount\* |
| Pattern Identification and Matching Laboratory/ Intro to GeneDoc lab(cont.) |  |
| Visualization of Multiple Sequence Alignments, Patterns and Motifs Lab | GeneDoc Tutorial \* |
| Introduction to Protein Structural Modeling | Chapter 10 Mount \* |
| VMD Tutorial and Homology Modeling lab | VMD Tutorial |
| Intro to Gene Phylogenies | Chapter 7 Mount \*  **Gene Family Evolution And Homology:**  **Genomics Meets Phylogenetics**  *J.W. Thornton, R. DeSalle*  Annu. Rev. Genomics Hum. Genet. Vol. 1, 41–73 |
| Phylogenetics/PHYLIP Lab. |  |
| Groups and Subfamilies/ |  |
| Analysis of Groups and Subfamilies Lab | GEnt/Protein Keys lab |