Spring 2016

BIN 503 Biological Databases and Data Analysis Tools

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Class Hours: Tue 9:40-12:30 **Office Hours:** Wed 10:00-12:00 or appointment by email
Grading: Midterm 20%
Journal Club 10%
Assignments 30%
Final Project 30%
Final Project Presentation 10%

Feb 23	Introduction to Biological Databases and Tools
Mar 1	Introduction to Database Concepts and Relational Algebra
Mar 8	Relational Algebra
Mar 15	Entity- Relationship Diagrams and SQL Tutorial
Mar 22	SQL Tutorial and Lab (phpMyAdmin)
Mar 29	Genome Databases (NCBI, ENA/EBI), Intro to Ensembl Genome Browser and BioMart
Apr 5	Ensembl Genome Browser and BioMart
Apr 12	**Midterm exam**
Apr 19	UCSC Genome Browser and Tables
Apr 26	**Journal Club on Biological databases and tools (Student presentations)**
May 3	Databases for Protein Sequence and Structure (UniProt, Protein Databank) Alignment and Visualization Tools (ClustalW and VMD)
May 10	Databases for Interactomics and Pathways/Network Visualization & Analysis Tools (Cytoscape)
May 17	Databases for Gene Expression and Analysis + microRNA Related Databases GEO and application of GEO2R to datasets in GEO
May 24	Mutation, Variation and Disease centric databases Functional Annotations and Enrichment Analysis (Gene Ontology project & DAVID web server)