

BIOSC 1540 - Computational Biology

Spring, 2019

Course Schedule

Date	Topic	Instructor	Exercises
Jan. 8 th	Review Syllabus Comp Bio: General Overview UNIX Command Line (Intro)	Jacob Durrant	
Jan. 10 th	UNIX Command Line	Jacob Durrant	UNIX homework
Jan. 15 th	Basic Python	Jacob Durrant	Python Homework
Jan. 17 th	Computational Genomics	Miler Lee	Homework: TBA
Jan. 22 nd	High-Performance Computing	Kim Wong	Homework: TBA
Jan. 24 th	Machine Learning	Jacob Durrant	Homework: TBA
	Discuss Group Projects		
Jan. 29 th	EXAM 1	(No Class)	
Jan. 31 st	Intro to Proteins & Ligands	Jacob Durrant	Video: What is a Protein?
Feb. 5 th	Ligand/Protein Binding	Jacob Durrant	Homework: PoseView
Feb. 7 th	Cheminformatics 1	Jacob Durrant	Due: Background-Research Rough Draft (Group Project)
Feb. 14 th	Small-Molecule Drugs	Jacob Durrant	Homework: Predict Chemical Properties
Feb. 19 th	Small-Molecule Models	Jacob Durrant	Due: Materials-and- Methods/Results-and- Discussion Rough Draft #1 (Group Project)
Feb. 21 st	Ligand-Based CADD	Jacob Durrant	Homework: TBA
Feb. 26 th	Catch-up Day (Python Packages, Command-line Programs)	Jacob Durrant	Homework: TBA
Feb. 28 st	EXAM 2	(No Class)	
Mar. 5 th	Determining Protein Structures	Jacob Durrant	Due: Edited/Revised Group Projects (Everything So Far, Compiled into One Document) Swap Projects (Peer Review)
Mar. 7 th	Search & Visualize Proteins	Jacob Durrant	Homework: UniProt and PDB Searching and Visualization
Mar. 12 th	No Class (Spring Break)		

Mar. 14th	No Class (Spring Break)		
Mar. 19th	Alignment and Homology Models	Jacob Durrant	Homework: SWISS-MODEL Due: Peer-Reviewed Group Projects
Mar. 21st	Druggable Proteins	Jacob Durrant	Homework: FTMAP
Mar. 26th	Protein Simulations 1	Jacob Durrant	Homework: TBA
Mar. 28th	Protein Simulations 2	Jacob Durrant	Homework: NAMD and VMD
Apr. 2nd	CADD and Protein Flexibility	Jacob Durrant	Reading: Molecular Dynamics Simulations and Drug Discovery
Apr. 4th	Computational Alchemy	Jacob Durrant	Homework: TBA
Apr. 9th	Structure-Based CADD	TBA	Homework: TBA
			Due: Final Written Project Reports
Apr. 11th	Project Presentations		Group Oral Presentations (10 Minutes per Group)
Apr. 16th	Project Presentations		Group Oral Presentations (10 Minutes per Group)
Apr. 18th	EXAM 3	(No Class)	

Date	Topic	Instructor	Exercises
Apr. 2 nd	CADD and Protein Flexibility	Jacob Durrant	Reading: Molecular Dynamics Simulations and Drug Discovery
Apr. 4 th	Computational Alchemy	Jacob Durrant	Homework: TBA
Apr. 9 th	Structure-Based CADD	TBA	Homework: TBA Due: Final Written Project Reports
Apr. 11 th	Project Presentations		Group Oral Presentations (10 Minutes per Group)
Apr. 16 th	Project Presentations		Group Oral Presentations (10 Minutes per Group)
Apr. 18 th	EXAM 3	(No Class)	