BIMM 185 Course Syllabus
Advanced Bioinformatics Lab (4 units)
Spring 2014, MW 2-5PM NSB 2303

Lecturer
Long H. Do, PhD
lhdo@ucsd.edu
Office: 359, CMM-W/GPL

Teaching Assistant
Pavel Ikrenyi
pikrenyi@ucsd.edu
Office Hours: by appointment

Course Website: http://onelab.ucsd.edu (invite and registration required)

Course Summary
This is the last required course in the bioinformatics series. As prerequisites you have already mastered the fundamentals of computer science, molecular biology, and bioinformatics. To prepare you for a professional career BIMM185 challenges you to use your bioinformatics knowledge at the highest level you are capable and to integrate your knowledge with skills in project management and peer review. Whether you pursue a career in academia, industry, or government your success will be determined by your ability to integrate these skill sets.

Required materials: You should have access to a computer and the Internet.

Course Requirements and Grades
Your grade will be based on your midterm paper (%25), your peer review and participation in the class (%25), and your final project (50%).

Midterm Paper: The scientific midterm paper consists of a descriptive title, an abstract, and an introduction section for your project. The introduction should provide background material and motivation for your project, as well as a general overview of what you are trying to accomplish. It's important to start early to elicit feedback so that you will have a polished version by Week 5.

Class participation: The class will be split into two groups. You will be responsible for giving presentations on your projects as well as presenting code and/or data that you wish to get feedback from. Procrastinating in this class will result in a poor presentation score so keep at it! Also, the more helpful your feedback (particularly on efficiency, algo enhancements, or general improvements), the higher your participation scores.

Final: The final is the culmination of your paper describing your project. In addition to your Abstract and Intro, you should have a Methods section (detailed description of your algorithms, experiments (wet or in-silico), protocols, and resources used. A Discussion section summarizing your results and findings, as well as future prospects and a summary should also be included. Finally, the finished project code should be submitted along with any additional documentation on how to run or use it. Criteria for grading projects will be on innovation, scale of effort (in most cases, the amount of unique code matters), manuscript quality, and effectiveness (can we run it and does it work?).

BIMM185 Course Schedule:

	Date	BIMM185 Events and Items Due	Project Milestones
Week 1	Monday, Mar 31	*First Class Meeting* Introduction	Choose bioinformatics project
	Wednesday, April 2	Present Project Plan and Goals (both Groups) **Due at start of class: Post .ppt to Week 1 page**	Project Proposal (3 Slides Max)
Week 2	Monday, April 7	**Group A** Present Background + Progress **Due at start of class: Post .ppt to Week 2 page**	Formulation of Hypothesis and Introduction
	Wednesday, April 9	**Group B** Present Background + Progress **Due at start of class: Post .ppt to Week 2 page**	
Week 3	Monday, April 14	**Group B** Present Demo Code **Due at start of class: Post demo code to Week 3**	Demo code
	Wednesday, April 16	**Group A** Present Demo Code **Due at start of class: Post demo code to Week 3**	
Week 4	Monday, April 21	**Group A** Present Code **Due at start of class: Post new code to Week 4**	Even more code
	Wednesday, April 23	**Group B** Present Code **Due at start of class: Post new code to Week 4**	
Week 5	Monday, April 28	**Group A + B, OPEN** **Due at end of class (5PM): Post Title, Abstract, and Introduction**	Complete Title, Abstract and Introduction
	Wednesday, April 30	**Group A+B, OPEN** **Due at start of class: N/A**	
Week 6	Monday, May 5	**Group B** Present Progress **Due at start of class: Post .ppt to Week 6 page**	Prototype
	Wednesday, May 7	**Group A** Present Progress **Due at start of class: Post .ppt to Week 6 page**	

Week 7	Monday, May 12	**Group A** Present code or prototype **Due at start of class: Post code to Week 7 page**	Improved Prototype
	Wednesday, May 14	**Group B** Present code or prototype **Due at start of class: Post code to Week 7 page**	
Week 8	Monday, May 19	**Group A +B** Speed Demo-ing **Due at start of class: Working Demo**	Working Demo
	Wednesday, May 21	**Group A+B** Speed Demo-ing **Due at start of class: Working Demo**	
Week 9	Monday, May 26		
	Wednesday, May 28	**Group A+B** OPEN **Due at start of class: N/A**	
Week 10	Monday, June 2	**Group A+B** OPEN **Due at start of class: N/A**	
	Wednesday, June 4	*No Class Meeting*	
Finals	Fri, June 6	**Due at Midnight: Final Paper, Project Source Code**	Final Paper and Complete Project