BIMM 101: Recombinant DNA Techniques (B00, B01, B02)

Spring Quarter 2010

Instructor: Dr. Buyung Santoso
6310 Natural Sciences Building
bsantoso@ucsd.edu

Lecture: Center Hall 220; Mon, Wed, Fri, 8-8:50 AM.

Lab: Wed, Fri, 9 AM – 1 PM, York Hall 4318, 4332

Section	Room	TA	Email
B01	YORK 4318	Dan Egan	egan@salk.edu
B02	YORK 4332	Dan Dempsey	ddempsey@ucsd.edu

Course Objectives:
This course introduces various laboratory techniques, and their theories and applications, in molecular biology. Students will become proficient at performing these techniques, which include learning the importance of proper controls, experimental designs, result interpretation, and logical conclusions based on experimental data. Students will become familiar with bioinformatics and primary literature. Also, all lab work will emphasize the learning of basic lab skills (including dilutions, good pipetting technique, data graphing, and basic statistical analysis) and good lab practices (such as good notebook keeping).

Materials:
1. BIMM 101 Lab Manual (required)
2. UV-proof safety glasses, lab coat, lab notebook with carbon copies (needed by 2nd day of class) (required)
3. WebCT access (required)
4. *From Genes to Genomes: concepts and application of DNA technology* by Dale (2nd edition) (optional); also on reserve in BML

Lab attendance policies:
Attendance at each lab session is mandatory. An unexcused absence will result in 10 points being deducted. **Two unexcused absences will result in the student failing the course.** If you know that you need to miss a lab session, discuss this with the instructor (not the TA; they are not authorized to give you permission) to see if it will be possible to make up the lab session. Please bring this to the instructor's attention as soon as you know that it will be an issue. **Only the instructor can excuse an absence.** Athletic competitions are not excused absences. Students must be on time for lab; the TAs go over the experiments and other important points at the beginning of lab.

Grading: Your final grade for the class will be calculated using the following criteria:

Exams (2 at 100 points each)	200 points
Lab reports (1 at 150 points each)	150 points
Lab notebook (15 at 2 points each)	30 points
Safety, attendance, lab performance	20 points
Total	400 points

Percent cutoffs for grade assignments:

A	92	C+	78
A-	90	C	72
B+	88	C-	70
B	82	D	60
B-	80	F	<60

Course web site:
Many of the course materials are available only through the course website on WebCT (webct.ucsd.edu). Students will need to be able to access this site. Once you are enrolled in the class, you will have access to the site using your ACS username and password. Be sure to check the course website frequently for announcements and updates on assignments. Use the Discussion Board to ask questions on material from lecture or lab. The instructor will check the Discussion Board consistently to answer questions, but students and TAs are highly encouraged to answer questions as well. This is a handy resource for last minute questions that come up during late night studying for an exam.

Lab Notebooks:
You will be expected to keep a formal laboratory notebook for all of the experimental work you do in lab. Please get a bound notebook with carbon copies (Carbon copies are to be included in the lab report). Refer to WebCT (under "Lab notebook format") for specific instructions on how to format your entries in it.

Starting on the second day of lab, your notebook will be checked each day that we are doing experimental work in the lab. A total of 15 notebook checks will be done, each worth 2 points. You will not receive any points if you are absent (excused or unexcused) during the check time. At each notebook check, you must have the following material entered in your notebook in the correct format:

a. For the previous lab's experiment: all of your data entered in labeled spaces, and any analysis for that experiment completed. Analysis includes any calculations and graphs that may be required to analyze the data. There should also be a brief summary (not more than a few sentences) of the day's experiment that states how well the procedure worked and any major conclusions from the data.

b. For the current day's experiment: a brief purpose explaining what you are doing that day (one or two sentences is fine), and appropriately labeled spaces and tables in which you will enter any data collected that day. You may also be asked to include a flow chart for the procedures you are doing that day.

Also, for each notebook check make sure that your table of contents and page numbering is up to date. Your TA will usually check your notebook while you are working on that day's experiment. **Important: It is the student's responsibility to make sure their notebook is checked before they leave that day**.

Letters of recommendation:
There are two minimal requirements for letter request: 1. at least an A in the course, and 2. you have spoken to me in depth about yourself. This is to ensure that I can write a strong letter to support whatever application that you need the letter for.

Make-up exams:
Please note that it is extremely burdensome for the instructor and TAs to have to prepare and proctor make-up exams. Missing a scheduled exam will only be excused for medical reasons where documentation can be provided. At the instructor's discretion, a missed exam that is excused **may be** made up by an oral exam scheduled within one week of the original exam.

Turning in lab reports:
We will be using the website Turnitin.com for lab reports in addition to turning in hard copies to your TA. Lab reports submitted to the Turnitin.com site do not need to have graphs, tables, or attachments, but you may include them if it is easier. Lab reports must be submitted to Turnitin.com before midnight of the due date, and a hard copy of the report (including all text, plus all tables, graphs, attachments, or anything else called for in the lab report guidelines) must be given to your TA at the beginning of the due date lab session. Lab reports not turned in at the beginning of the lab session, or not submitted to Turnitin.com by the end of the day will be considered one-day late. Ten points will be deducted for each working day that the lab reports are late (hard copy and Turnitin.com). Students agree that by taking this course all required papers will be subject to review for textual similarity by Turnitin.com for the detection of plagiarism. All submitted papers will be included as source documents in the Turnitin.com reference database solely for the purpose of detecting plagiarism of such papers. Use of the Turnitin.com service is subject to the terms of use agreement posted on the Turnitin.com site.

BIMM 101 Integrity Policy Regarding Lab Reports:
The most important part of laboratory work in any field is the interpretation of experimental results. The skills required to accurately organize, analyze, and present data must be learned, and this is a big part of what this class is designed to teach. If a student does not complete a lab report independently, they do not go through the process of thinking through how to work up their data, and lose the chance to learn

these skills. Furthermore, this denies the instructor the ability to accurately assess these skills in the student, and give a grade that represents your independent ability.

All lab reports for the class must be independently written, i.e., your own work in your own words. While discussion of data among lab partners is encouraged, each student on their own must complete all text, references, figures, graphs, and tables. The submission of reports by lab partners that contain shared graphs is forbidden, and will result in points being deducted from both reports. The exception to this is when a figure is the raw data that is supplied to each member of the group (e.g. gel pictures). In this case the labeling of that figure must be done independently. If you have questions about the difference between discussing your work with others and unauthorized collaboration, please ask your instructor or T.A. for clarification.

Because lab reports are to be your own work in your own words, you may not copy to any extent current or past laboratory reports that were written by other students. **This is known as plagiarism,** which is a direct attempt by the student to present the work of others as their own, and is no different than cheating on an exam. Directly copying material from other sources without putting it in your own words is also plagiarism, even if the source is cited as a reference. Plagiarism in BIMM 101 lab reports is rigorously sought out and penalized. Students are required to upload an electronic version of each lab report to Turnitin.com, where the report is screened with a plagiarism checker against all reports in the Turnitin database. This screening process is extremely efficient at detecting even small amounts of plagiarized material. Furthermore, all submitted reports are retained in the Turnitin database.

All incidents of plagiarism will automatically be turned in to the Academic Integrity Coordinator. Following UCSD's Policy on Integrity of Scholarship (www-senate.ucsd.edu/manual/appendices/app2.htm), students found to have committed plagiarism or other academic misconduct will receive both an administrative (decided by the Council of Deans) and academic penalty (decided by the instructor).

BIMM 101 CONTRACT:

BY REMAINING ENROLLED IN THE COURSE, YOU ACKNOWLEDGE THAT YOU HAVE READ AND UNDERSTOOD THIS POLICY. YOU UNDERSTAND THAT IF YOU PLAGIARIZE A LAB REPORT AND IT IS DETECTED BY TURNITIN.COM, THE MATTER WILL GO TO THE ACADEMIC INTEGRITY OFFICE ON CAMPUS. YOU ALSO UNDERSTAND THAT IF YOU GIVE A LAB REPORT TO A STUDENT WHO TAKES THE LAB IN A SUBSEQUENT QUARTER, AND HE OR SHE PLAGIARIZES YOU LAB REPORT, YOU WILL ALSO BE SUBJECT TO DISCIPLINING BY THE ACADEMIC INTEGRITY OFFICE.

Week	Date	Activities	
1	Monday, March 29, 2010	Lecture	Intro/syllabus
	Wednesday, March 31, 2010	Lecture + Lab	
	Friday, April 02, 2010	Lecture + Lab	
2	Monday, April 05, 2010	Lecture	
	Wednesday, April 07, 2010	Lecture + Lab	
	Friday, April 09, 2010	Lecture + Lab	
3	Monday, April 12, 2010	Lecture	
	Wednesday, April 14, 2010	Lecture + Lab	
	Friday, April 16, 2010	Lecture + Lab	
4	Monday, April 19, 2010	Lecture	
	Wednesday, April 21, 2010	Lecture + Lab	
	Friday, April 23, 2010	Lecture + Lab	
5	Monday, April 26, 2010	Lecture	
	Wednesday, April 28, 2010	Lecture + Lab	
	Friday, April 30, 2010	Lecture + Lab	
6	Monday, May 03, 2010	Lecture	Midterm Exam (in lecture)
	Wednesday, May 05, 2010	Lecture + Lab	
	Friday, May 07, 2010	Lecture + Lab	
7	Monday, May 10, 2010	Lecture	
	Wednesday, May 12, 2010	Lecture + Lab	
	Friday, May 14, 2010	Lecture + Lab	
8	Monday, May 17, 2010	Lecture	
	Wednesday, May 19, 2010	Lecture + Lab	
	Friday, May 21, 2010	Lecture + Lab	
9	Monday, May 24, 2010	Lecture	
	Wednesday, May 26, 2010	Lecture + Lab	
	Friday, May 28, 2010	Lecture + Lab	Lab Report due
10	Monday, May 31, 2010		Memorial Day Holiday
	Wednesday, June 02, 2010	Lecture + Lab	
	Friday, June 04, 2010		Final Exam (in lab)