FACULTY **C**OURSE **A**SSESSMENT **R**EPORT

Department of Biomedical Engineering

Academic Year: **2011-2012**
Term: **Spring 2012**

Course Code and Title: **BME50B Cell and Molecular Engineering (BME)**

Instructor: **Elliot Hui, PhD**

Background: Please review the *ABET background* document.

Instructions: For each student outcome performance indicator, identify (1) the assignment (which quiz, quiz problem, exam problem, or project) was used to assess that indicator, (2) the maximum score possible on that assignment, (3) the performance standard for that assignment expressed in points and also as a percentage of max, (4) the number of students who were assessed on that assignment, (5) the average score achieved by them expressed in points and percentage of max, and (6) the number and percentage of BME students who achieved the performance standard.

Performance Indicators (PIs): This course assesses the following Performance Indicators (please consult the *Proposed Remapping of BME courses to Student Outcomes* document): **a2.**

a2 — Students can apply knowledge of science to problems in Biomedical Engineering

PIs	Assignment used for assessment	Max. score	PI standard and % of maximum	Number of students tested	Average score and % of maximum	Number and % of BME students who met the standard
(a2)	Final Exam (all)	100	60 (60%)	95	64.8 (64.8%)	68 (71.6%)

Course Learning Outcomes: This course assesses the following Course Learning Outcomes (please consult your *Course Outline* document):

CLO1: Understand the structure and mechanics of cells and tissue **(a)**.
CLO2: Understand electrochemical membrane potentials and ion/protein transport **(a)**.
CLO3: Understand the control systems that govern the cell cycle and cell growth **(a)**.
CLO4: Apply knowledge of molecular and cell biology to human disease and therapy **(a)**.

CLOs	Assignment used for assessment	Performance standard	Number of students tested	Average score (%)	Number and % of BME students who met the standard
1	Final Exam (1,3,4)	60%	95	67.8%	66.7 (70.2%)
2	Final Exam (1,2)	60%	95	70.9%	72.0 (75.8%)
3	Final Exam (5,7)	60%	95	53.9%	40.0 (42.1%)
4	Final Exam (6,7)	60%	95	54.2%	42.5 (44.7%)

What changes did you make in this course based on previous assessment results?

Moved developmental biology from 50B to 50A. Moved immunology from 50A to 50B. This sequence fits both courses better.

What recommendations do you have for improving the course the next time it is taught?

Students struggled with applying fundamental knowledge to real world diseases, diagnostics, and therapies. I suggest having more of these examples in the homework problems.

What recommendations do you have, if any, regarding prerequisite courses or other ways to improve student preparation for this course?

It makes sense to continue to have 50A as the only prerequisite.

I do notice that students with stronger background in biology (from high school, junior college, or at UCI) tend to do better in the 50A/B sequence. Still, I don't think that any additional prerequisites need to be added.

Any other recommendations or comments?

14 out of 144 (10%) of the students in the class this year were not BME or BMEP majors. Instead they came from BioSci (3), Chem Eng (3), Mech Eng (2), Eng (2), Aero Eng, Chemistry, Math, and Psychology. The class average of these students (66.4%) was about the same as for BME majors (66.6%) and BME premeds (66.1%).