

FACULTY COURSE ASSESSMENT REPORT

Department of Biomedical Engineering

Academic Year: 2011-2012

Term: Spring 2012

Course Code and Title: **BME111 Design of Biomaterials**

Instructor: **Wendy Liu**

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)	HW#1 (all)	10	6.67 (66.7%)	72	9.3	69 (95.8%)
	HW#2 (all)	10	6.67 (66.7%)	72	7.8	53 (73.6%)
	HW#3 (all)	10	6.67 (66.7%)	72	7.3	54 (75.0%)
	HW#4 (all)	10	6.67 (66.7%)	72	7	43 (59.7%)
	HW#5 (all)	10	6.67 (66.7%)	72	7.2	48 (66.7%)
	HW#6 (all)	10	6.67 (66.7%)	72	6.4	39 (54.2%)
	Midterm (all)	100	66.67 (66.7%)	72	64.2	64 (45.8%)
	Final Exam (all)	100	66.67 (66.7%)	72	72.7	50 (69.4%)
	Project (all)	100	80 (80%)	72	90.3	68 (94.4%)
	Average:					50.8(70.5%)

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

- CLO1:** Students will be able to select appropriate class of materials using knowledge of different materials properties (EAC a).
- CLO2:** Students will be able to design an implant material, component, or process to meet desired needs (EAC a).
- CLO3:** Students will be able to identify, formulate, and solve materials selection and surface engineering problems (EAC a).
- CLO4:** Students will be able to identify materials properties, apply fundamental analytical tools, and predict performance (EAC a).

CLOs	Assignment used for assessment	Performance standard	Number of students tested	Average score (%)	Number and % of BME students who met the standard
1	HW#1-6, Midterm, Final Exam, Project	66.67%	72	75.2%	50.8(70.5%)
2	HW#1-6, Midterm, Final Exam, Project	66.67%	72	75.2%	50.8(70.5%)
3	HW#1-6, Midterm, Final Exam, Project	66.67%	72	75.2%	50.8(70.5%)
4	HW#1-6, Midterm, Final Exam, Project	66.67%	72	75.2%	50.8(70.5%)

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

This was the instructor's first time teaching the course.

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

Used randomized seating assignment during midterms and exams to minimize the effect of cheating.
Utilize old exams as practice problems for students to prepare for the midterm and final exams.
Reduce the magnitude of the project, and the weight of the project towards the final grade.
To counter the reduction of the project, increase the weight of the homework assignments. In addition, modify homework assignments to include critical reading of assigned literature articles related to the development of new biomaterials.

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

It is recommended upon the suggestion of the Undergraduate Committee that BME 50B be changed from a corequisite to a prerequisite, so that all students have a similar understanding of cell biology and immunology prior to taking this course.

It is also recommended that BME 110A be added as a prerequisite to this course, so that all of the students have had similar level of mechanics prior to being taught mechanics of biomaterials.

Any other recommendations or comments?

No