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

Department of Biomedical Engineering

Academic Year: **2012-2013**
Term: **Fall 2012**

Course Code and Title: **BME160 Tissue Engineering (BME majors)**

Instructor: **Anna Grosberg, 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, f1, j1.**

a2 — Students can apply knowledge of science to problems in Biomedical Engineering
f1 — Students understand professional and ethical responsibility required of engineers.
j1 — Students understand contemporary biomedical issues in economic, environmental, and societal context.

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)	Midterm Exam 2 (3)	20	12.00 (60.00%)	78	16.95 (84.74%)	73 (93.59%)
	Midterm Exam 3 (all)	100	60.00 (60.00%)	76	83.09 (83.09%)	75 (98.68%)
	Average:				**(83.92%)**	**(96.14%)**
(f1)	Midterm Exam 1 (7)	10	6.00 (60.00%)	77	8.60 (86.36%)	66 (85.71%)
	Final Exam P1 (8)	5	3.00 (60.00%)	41	3.53 (70.59%)	30 (73.17%)
	Average:				**(78.48%)**	**(79.44%)**
(j1)	Final Exam P1 (3)	6	3.60 (60.00%)	41	6.00 (100.00%)	41 (100.00%)
	Final Exam P1 (8)	5	3.00 (60.00%)	41	3.53 (70.59%)	30 (73.17%)
	Average:				**(85.29%)**	**(86.59%)**

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

CLO1: Apply cell biology to engineering problems in regenerative medicine **(a)**
CLO2: Apply material science to the design of tissue-engineered constructs **(a)**
CLO3: Understand the ethical responsibilities of engineers **(f)**
CLO4: Understand the ethical, economic, and societal implications of tissue engineering **(f, j)**

CLOs	Assignment used for assessment	Performance standard	Number of students tested	Average score (%)	Number and % of BME students who met the standard
1	Midterm Exam 3 (all)	60.00%	76	83.09%	75 (98.68%)
2	Midterm Exam 2 (3)	60.00%	78	84.74%	73 (93.59%)
3	Midterm Exam 1 (7)	60.00%	77	86.36%	66 (85.71%)
4	Final Exam P1 (3)	60.00%	41	100.00%	41 (100.00%)
	Final Exam P1 (8)	60.00%	41	70.59%	30 (73.17%)
	Average:	**60.00%**	**41**	**85.29%**	**(86.59%)**

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

The course was re-designed to align more closely with the textbook.

An open-ended design project with a term paper was eliminated, and it was replaced with a hypothesis driven design project with a presentation assessment.

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

Structure the course to present the societal and ethical implication of tissue engineering earlier in the course, so that students can have more time to understand these concepts.
Present more examples of clinical applications of tissue engineering.

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

The Undergraduate Committee has recently redefined the prerequisites for the entire curriculum. I agree with their recommendations and design.

Any other recommendations or comments?

No