

FACULTY COURSE ASSESSMENT REPORT

Department of Biomedical Engineering

Academic Year: 2012-2013

Term: Spring 2013

Course Code and Title: **BME170 Biomedical Engineering Laboratory**

Instructor: **James Brody, PhD (course coordinator), Enrico Gratton, PhD; Zoran Nenadic, DSc; Fan Gang Zeng, PhD; Gultekin Gulsen, 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): **b1, b2, b3, f2, g2, k1, k2.**

b1 — Students can design biomedically relevant experiments.

b2 — Students can conduct biomedically relevant experiments.

b3 — Students can analyze and interpret data from biomedically relevant experiments (including living systems).

f2 — Students understand professional and ethical responsibility specific to health-related fields

g2 — Students can communicate in writing technical issues related to biomedical engineering.

k1 — Students can collect data from biomedical systems.

k2 — Use software tools to model biomedical systems, and analyze and interpret biomedical data.

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
(b1)	Lab A report	15	10 (67%)	78	13.7 (91%)	57/57 (100%)
	Lab B report	15		78	11.8(78%)	30/38(79%)
	Lab C report	15		78	12.3 (82%)	34/39(87%)
	Lab D report	15		78	Not available	Not Available
	Average:					12.6 (84%)
(b2)	Lab A report	15	10 (67%)	78	13.7 (91%)	13.7 (91%)
	Lab B report	15		78	11.8(78%)	11.8(78%)
	Lab C report	15		78	12.3 (82%)	12.3 (82%)
	Lab D report	15		78	Not available	Not available
	Average:					12.6 (84%)
(b3)	Lab A report	15	10 (67%)	78	13.7 (91%)	13.7 (91%)
	Lab B report	15		78	11.8(78%)	11.8(78%)
	Lab C report	15		78	12.3 (82%)	12.3 (82%)
	Lab D report	15		78	Not available	Not available
	Average:					12.6 (84%)

(f2)	HIPAA Research Tutorial	Pass	Pass	78	NA	74 (94.9%)
	Human Research Tutorial	Pass	Pass	78	NA	68 (87.2%)
	Average:					71 (91.0%)
(g2)	Lab A report	15	10 (67%)	78	13.7 (91%)	13.7 (91%)
	Lab B report	15		78	11.8(78%)	11.8(78%)
	Lab C report	15		78	12.3 (82%)	12.3 (82%)
	Lab D report	15		78	Not available	Not available
	Average:					12.6 (84%)
(k1)	Lab A report	15	10 (67%)	78	13.7 (91%)	13.7 (91%)
	Lab B report	15		78	11.8(78%)	11.8(78%)
	Lab C report	15		78	12.3 (82%)	12.3 (82%)
	Lab D report	15		78	Not available	Not available
	Average:					12.6 (84%)
(k2)	Lab A report	15	10 (67%)	78	13.7 (91%)	13.7 (91%)
	Lab B report	15		78	11.8(78%)	11.8(78%)
	Lab C report	15		78	12.3 (82%)	12.3 (82%)
	Lab D report	15		78	Not available	Not available
	Average:					12.6 (84%)

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

CLO1: Design and perform experiments involving biological tissues. **(b)**

CLO2: Describe the approval process involved in human subject studies. **(f)**

CLO3: Collect, analyze and interpret data collected. **(b,k)**

CLO4: Write comprehensive experimental reports. **(g)**

CLO	Assignment used for assessment	Performance standard	Number of students tested	Average score (%)	Number and % of BME students who met the standard
1	Lab-A, Lab-B, Lab-C	67%	38	12.6 (84%)	33/38 (88.6%)
2	HIPAA Tutorial	Pass	78	NA	74 (94.9%)
	Human Research Tutorials	Pass	78	NA	68 (87.2%)
3	Lab-A, Lab-B, Lab-C	67%	38	12.6 (84%)	33/38 (88.6%)
4	Lab-A, Lab-B, Lab-C	67%	38	12.6 (84%)	33/38 (88.6%)

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

No significant changes were made from the last time this course was taught. We considered and proposed adding a new experiment, but budget constraints prevented this from happening.

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

Recommendations: Smaller lab groups, more student time in the laboratory, change the assessment from lab reports/exams to oral examinations.

These recommendations will require substantial new resources devoted to this course. It is not clear when these resources will become available.

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

The prerequisite and student preparation are adequate.

Any other recommendations or comments?

NOTE: The 2013 assessment results presented in this document were compiled during the quarter before all results were available. These results represent about half the students and should be a good representative of the final results.