FACULTY COURSE ASSESSMENT REPORT

Department of Biomedical Engineering

<u>Academic Year</u>: 2011-2012 <u>Term</u>: Spring 2012

Course Code and Title: BME110C Biomechanics III

Instructor: Arash Kheradvar, M.D., Ph.D.

Background: Please review the ABET background document.

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

Performance Indicators (PIs): This course assesses the following Performance Indicators: **a1, a3.**

- a1 Students can apply knowledge of mathematics to problems in Biomedical Engineering
- a3 Students can apply knowledge of engineering to problems in Biomedical Engineering

Pls	Assignment used for	Max. score	PI standard and % of	Number of	Average score and % of	Number and % of BME students
	assessment		maximum	students	maximum	who met the
				tested		standard
(a1)	HW#1 (all)	200	133.34(66.67%)	78	187.86 (93.93%)	77 (98.72%)
	HW#5 (all)	180	120.01(66.67%)	78	162.33 (90.19%)	74 (94.87%)
	HW#7 (all)	150	100.01(66.67%)	78	125.49 (83.66%)	68 (87.18%)
	Midterm#1 (all)	150	100.01(66.67%)	78	116.19 (77.46%)	58 (74.36%)
	Midterm#2 (all)	150	100.01(66.67%)	78	115.91 (77.27%)	62 (79.49%)
	Final Exam (all)	200	133.34(66.67%)	78	146.22 (73.11%)	51 (65.39%)
	Average:				(82.60%)	65 (83.34%)
(a3)	HW#3 (all)	150	100.01(66.67%)	78	133.29 (88.86%)	63 (80.77%)
	HW#4 (all)	100	66.67 (66.67%)	78	78.21 (78.21%)	65 (83.33%)
	HW#6 (all)	100	66.67 (66.67%)	78	88.26 (88.26%)	67 (85.90%)
	Midterm#1 (all)	150	100.01(66.67%)	78	116.19 (77.46%)	58 (74.36%)
	Midterm#2 (all)	150	100.01(66.67%)	78	115.91 (77.27%)	62 (79.49%)
	Final Exam (all)	200	133.34(66.67%)	78	146.22 (73.11%)	51 (65.38%)
	Average:				(80.53%)	61 (78.21%)

<u>Course Learning Outcomes</u>: This course assesses the following Course Learning Outcomes:

CLO1: Students will learn about the fundamental fluid dynamics and their applications to human biomechanics (a1). **CLO2**: Students will learn about the biomechanics of human cardiovascular system. (a3).

CLO3: Students will gain fundamental understanding on applying fluid dynamic concepts to biomechanics. (a1,a3).

CLO4: Students will learn to extend their knowledge of fluid mechanics to understand the mechanical properties of blood and biomechanics of cardiovascular system (a1,a3).

CLOs	Assignment used for assessment	Performance standard	Number of students tested	Average score (%)	Number and % of BME students who met the standard
1	HW#1,5,7,Midterm#1-2,Final	66.67%	78	82.60%	65 (83.34%)
	Exam				
2	HW#3,4,6,Midterm#1-2,Final	66.67%	78	80.53%	61 (78.21%)
	Exam				
3	HW#1,3-7,Midterm#1-2,Final	66.67%	78	81.57%	63 (80.78%)
	Exam				
4	HW#1,3-7,Midterm#1-2,Final	66.67%	78	81.57%	63 (80.78%)
	Exam				

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

This is the first year I am teaching this course. However, compared to the previously taught course, I have added one more midterm and increased the number of homework to enhance students' educational experience. With respect to the content of the class, I added further applied material to the class so the students can utilize their mathematical and engineering learning toward the current state-of-the-art in life sciences.

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

Increase the mathematical content of the course. Provide a group projects to be assigned to group of 5 to work on. This will improve the students experience to work in team aiming to a life science problem.

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

None

Any other recommendations or comments?

None