

Monday, April 08, 2013


Curriculum Review Background Document

The material below is a “digest” version. If you care to read more, please follow this link:

<http://www.abet.org/accreditation-criteria-policies-documents/>

In addition, the full definition of terms can be found here:

<http://www.abet.org/DisplayTemplates/DocsHandbook.aspx?id=3149>

Term	Definition
Program Educational Objectives (PEO)	Broad statements that describe what graduates are expected to attain within <u>a few years after graduation</u> . They are based on the needs of program’s constituencies (e.g. faculty, students, alumni, advisory board, employers, and postgraduate schools). BME department has 4 PEOs which are listed below. They will be numbered, i.e. (1), (2), (3) and (4).
Student Outcomes (SO)	Short description of what students are expected to know and able to do <u>by the time of graduation</u> . These relate to the knowledge, skills and behaviors that students acquire as they progress through the program. BME department has 11 SOs and they are listed below. They will be denoted by letters: (a), (b), ..., (k).
Program Outcomes	This is an old name for SO that should no longer be used. Your old FCAR (Faculty Course Assessment Report) used this term. A new version of FCAR will be provided for you.
Performance Indicators (PI) 	They identify what concrete actions the student should be able to perform as a result of participation in the program. They are designed to articulate key characteristics of an SO. Each SO may have one or more PIs. In new FCARs, you will be assessing the students’ performances based on PIs (as opposed to SOs, as was done in the past). PIs will be denoted by a letter followed by a number. For example, assuming that SO (a) has 3 PIs, they will be denoted by: (a1), (a2), and (a3).
Course Learning Outcomes (CLO)	They identify what students learn and will be able to do <u>by the end of each course</u> . They can be found in course outlines, prepared by you (course instructor), or whoever you inherited the course from. The current list of BME course outlines can be found at: http://plaza.eng.uci.edu/course/outline . Find the course you teach and follow the link. Make sure the course outline is up to date, if not let me know.

An up-to-date document containing **BME** Mission, **PEOs**, and **SOs** can be found here:

<http://plaza.eng.uci.edu/degree-program/biomedical/mission>

The BME SOs have changed effective the school year (SY) 2011-2012. The table below shows a comparison of the old and updated SOs.

BME SOs

Old (as listed in old FCARs)	Revised (adopted from Engineering Accreditation Commission and consistent across HSSoE)
(a) An ability to apply fundamental knowledge of mathematics, including differential equations and statistics, biology, physiology, physical sciences, and engineering to solve the problems at the interface of engineering and biology.	(a) An ability to apply knowledge of mathematics, science, and engineering.
(b) An ability to design and conduct biomedically relevant experiments, to quantitatively analyze and interpret data from living and non-living systems, and to solve problems associated with the interaction between living and non-living materials and systems.	(b) An ability to design and conduct experiments, as well as to analyze and interpret data.
(c) An ability to design a system, component, or process to tackle biomedical engineering problems within realistic constraints such as economic, environmental, social, political, ethical, health, safety, regulation, manufacturability and sustainability.	(c) An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
(d) An ability to function on multi-disciplinary teams.	(d) An ability to function on multidisciplinary teams.
(e) An ability to apply the phases of design (need identification, problem definition, synthesis, analysis, optimization, evaluation, and presentation) in order to propose a feasible solution to a variety of biomedical problems.	(e) An ability to identify, formulate, and solve engineering problems.
(f) An understanding of professional and ethical responsibility required of all engineers, and the unique ethical responsibilities of engineers working in health-related fields.	(f) An understanding of professional and ethical responsibility.
(g) An ability to communicate effectively both orally and in writing on technical issues related to biomedical engineering.	(g) An ability to communicate effectively.
(h) Possess a broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.	(h) The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.
(i) Recognition of the need for, and an ability to engage in life-long learning.	(i) A recognition of the need for, and an ability to engage in life-long learning.
(j) Demonstrate knowledge of contemporary issues related to biomedical engineering.	(j) A knowledge of contemporary issues.
(k) An ability to use the techniques, skills, and modern engineering tools necessary for solving biomedical engineering problems.	(k) An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

Monday, April 08, 2013

FCARs

These are documents containing the summary of assessment results (per course) to be filled out by a course instructor (preferably immediately after the quarter). In these cards (which have been significantly revised effective SY 2011-2012), you will use PIs to assess the performance of students in each of the SOs. Keep in mind that the BME and BMEP cohort will have to be separated (i.e. one FCAR for each). In addition, if your course is cross-listed with other engineering departments, e.g. BME121/CBEMS104, you will also need to fill out an FCAR for chemical engineering students.