The educational objectives and outcomes of B.S. in Bioengineering Program

1. To maintain the status of our undergraduate program as one of the premier programs at Syracuse University and one of the foremost undergraduate bioengineering programs in the country.

2. To continue to provide our students with mentoring, curricular experience, and extracurricular opportunities consistent with their individual career objectives.

3. To ensure that our graduates meet the Program Outcomes set forth in the Accreditation Board for Engineering and Technology Engineering Criteria 2000, listed below.

   a. Graduates must have an ability to apply knowledge of mathematics, science and engineering. This goal is met through the rigorous basic science, mathematics and engineering courses that form the core of our curriculum, including calculus, physics, chemistry, biology, and engineering.

   b. Graduates must have an ability to design and conduct experiments, as well as to analyze and interpret data. Courses in which this criterion is assessed include BEN 305, 306, 458, 465, 466, 467, 481, 482, 497 and 498.

   c. Graduates must have an ability to design a system, component, or process to meet desired needs. The design criterion is delivered and assessed primarily in CSE 261, ELE 312, ECS 101, BEN 458, 465, 467, 468, 481, 482, 497 and 498.

   d. Graduates must have an ability to function on multi-disciplinary teams. Students work in teams in ECS 101, BEN 305, 306, 465, 466, 467, 481, 482 and 498.

   e. Graduates must have an ability to identify, formulate, and solve engineering problems. This criterion is met in work undertaken in ECS 101 and 221, CSE 261, ELE 231, 232, and 312, BEN 465, 466, 467, 481, 482, 497 and 498.

   f. Graduates must have an understanding of professional and ethical responsibility. The criterion for understanding professional and ethical responsibility is met by elective courses in the social sciences and humanities along with ECS 101, BEN 205, 467, 468, 481, 482, 497 and 498.

   g. Graduates must have an ability to communicate effectively. This criterion is met by required courses in the all-university writing program, ECS 101, BEN 305, 306, 458, 467, 468, 481, 482, 497 and 498.

   h. Graduates must have the broad education necessary to understand the impact of engineering solutions in a global and societal context. This criterion is met by a variety of elective social science and humanities courses, ECS 101, BEN 205, 467, 497 and 498.

   i. Graduates must have a recognition of the need for, and an ability to engage in, life-long learning. This criterion is met primarily in BEN 205, 306 and 498.
j. Graduates must have a knowledge of contemporary issues. This criterion is met in BEN 205, 458, 467, 468, 497 and 498.

k. Graduates must have an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice. This criterion is met in ECS 101, BEN 305, 306, 467, 481, 482 and 498.

l. Graduates must demonstrate an understanding of biology, physiology, and the capability to apply advanced mathematics (including differential equations and statistics), science, and engineering to solve the problems at the interface of engineering and biology. The criterion is met in BIO 121, NEU 211, MAT 485 and 521, BEN 205, 305, 306, 468 and 498.

m. Graduates must demonstrate an ability to be able to make measurements on, and interpret data from, living systems, addressing the problems associated with the interaction between living and non-living materials and systems. This criterion is met in BEN 305, 306, 481, 482 and 498.