PhD Curriculum
Department of Bioengineering
(Approved by bioengineering faculty on December 1, 2006)

Students admitted into the doctoral program in Bioengineering beginning Spring 2007 will be required to pursue a core curriculum and plan of study that will serve as the basis for further more specialized study in the field. The revised PhD curriculum and plan of study seek to

(a) establish a uniform knowledge base of fundamental bioengineering principles amongst admitted graduate students with conventional (BS/MS in Bioengineering) and non-traditional (BS/MS in non-bioengineering fields) educational backgrounds
(b) provide greater flexibility in selection of core and elective courses so as to be more relevant to the students' chosen research track
(c) specify guidelines for transfer of relevant course credits for doctoral students with a masters degree in bioengineering/ other discipline to avoid course repetition/duplication and ensure quality control of bioengineering education offered by the department

The initial plan of study (GS-2) for new PhD students must be filed by the 2nd semester of enrollment.

Minimal credit hour requirements for PhD students:

Direct PhD students: Total of **36 credit hours**. This includes 12-15 credits hours of required and core courses (**Table 1**) and 24-21 credit hours of elective courses, as selected in consultation with research advisor or as per suggestion of PhD dissertation committee members. Students receiving stipend/tuition deferral are required to enroll for a minimum of 12 credit hours each semester, inclusive of one credit hour of bioengineering seminar.

PhD students with MS degrees: Total of **36 credit hours.** Students may transfer up to 24 credit hours of completed, MS courses, to replace either core or elective bioengineering courses. The student's research advisor and/or the Chair, and will approve transfer of credits based on demonstrated equivalent course content and bioengineering context, and satisfactory student performance in the transferred course (minimum of 'B' grade or higher required). Students receiving research stipends/tuition deferral are required to enroll for a minimum of 12 credit hours each semester, inclusive of one credit hour of bioengineering seminar and should be engaged in the research of their appointed adviser.

Transfer of Undergraduate credits: Undergraduate coursework may not be transferred for graduate credit. However, completed undergraduate courses that serve to satisfy a deficiency, qualify as such only if the student had obtained a 'B' grade or higher in the course. A 'C' grade will be subject to review by the student's advisor in consultation with the faculty. A 'D' grade or lower will require the student to re-enroll for the course or in equivalent pre-requisites, which will not be considered towards minimal graduate credit requirements.

Summer Enrollment: Students receiving research stipends/tuition waivers are required to enroll for 6 credit hours **in each of** summer sessions I and II.

Exceptions or Exclusions: Deviations from the two bioengineering study tracks above, will be reviewed and acceptability decided upon on a case-by-case basis by the students primary research advisor, the department chair and the student's dissertation committee.

Table 1. List of Required and Core PhD Courses

Course #		Course Title	Notes
Required courses	1. CU: BIOE 615	Research Principles	1 credit
	1. MUSC: CGS 710	Essential Scientific Practices I: Responsible Conduct of Research	2 credits offered by MUSC, College of Graduate Studies:
	2. BIOE 800	Seminar in Bioengineering	1 credit (irrespective of repeated enrollment)
Core course I	3. BIOE 801	Biomaterials	3 credits
Core course II	4. Choose one from these three bioengineering courses	BIOE 820, Structural Biomechanics	3 credits
		BIOE 847, Transport Processes in Bioengineering	4 credits
		BIOE 870, Bio-instrumentation	3 credits
Core course III	5. CU: BIOSC 659 or BioE 846	Systems Physiology or Biomedical Basis for Engineered Replacements	3 credits offered by the Department of Biological Sciences in the College of Agriculture, Forestry and Life Sciences. or 3 credits
	5. MUSC: NRDNP 838 or BioE 846	Advanced Pathophysiology or Biomedical Basis for Engineered Replacements	3 credits offered by MUSC, College of Nursing or 3 credits