PH.D. IN BIOMEDICAL ENGINEERING

1. The goal of the PhD program in Biomedical Engineering at the University of Miami is to prepare graduates for careers in academia, industrial research and development, or government. The program is designed to train students for advanced independent research and technical innovation in biomedical engineering.

2. The general requirements for award of the Doctor of Philosophy degree include:
   a. Completion of a minimum of 60 credit hours beyond the Bachelor of Science degree.
   b. Satisfactory completion of a qualifying examination.
   c. The submission, oral defense, and approval of a dissertation proposal.
   d. The submission and oral defense and approval of a dissertation.
   There are no foreign language competency requirements for the PhD in biomedical engineering.

3. The requirements for admission to the PhD program in biomedical engineering usually include:
   a. In general, the department admits three types of students to its PhD program:
      i. Students with MS degrees in Biomedical Engineering or related science and engineering fields.
      ii. Students with MD degrees with undergraduate degrees in sciences or engineering.
      iii. Highly qualified students with BS degrees in engineering or sciences (direct BS to PhD track).
   b. The general requirements for admission of BS students to the doctoral degree program are consistent with the admission requirements of the College of Engineering.
   c. Students in M.S. thesis or non-thesis tracks who wish to pursue a doctoral degree can transfer to the doctoral degree program without completing a thesis or project under the following general requirements:
      i. A letter of support by a faculty member who agrees to serve as the student’s Ph.D. dissertation advisor.
      ii. Completion of an application for admission to the PhD program, which will be reviewed by the Department’s Graduate Admissions Committee, using the standard admission criteria for the doctoral program.
   d. Regulations concerning admission, course requirements, residence requirements, qualifying and final examinations, and dissertation are listed in this Bulletin under Engineering and Doctor of Philosophy.

4. The doctoral program in biomedical engineering requires each student to pass a departmental qualifying screening examination.
   a. The screening examination consists of three written examinations on each of the following broad subjects:
      i. Basic engineering;
      ii. Applied mathematics and computer science; and
      iii. Applied physiology and medical science.
   b. These examinations are usually offered once or twice each year.
   c. The examination must be taken the first time it is scheduled after completion of the first two semesters.
   d. A student may repeat once any or all parts of the examination where the results were found unsatisfactory.
   e. Students admitted to the doctoral program with a BS degree that do not pass the qualifying examination may complete the MS degree.

5. Following the successful completion of the screening examination, a PhD Supervisory Committee is appointed by the Chairperson of the Department of Biomedical Engineering. The role of the Supervisory Committee is to administer the dissertation proposal, and to make up any additional written or oral examination deemed necessary to complete the qualifying examination.
   a. The supervisory committee is composed of a minimum of 5 members.
   b. Three members, including the chair, shall be members of the Graduate Faculty, and one member shall be from outside the Department.
   c. A minimum of three members, including the chair of the committee, must be primary faculty members from the BME Department.
   d. A research mentor who is not a Primary Faculty member of the Department of Biomedical Engineering, can serve as Co-Chair of the Supervisory Committee, together with a second Co-Chair who shall be a member of the primary faculty of the Department of Biomedical Engineering.
   e. A written dissertation proposal is submitted along with an oral presentation to the supervisory committee.
   f. Acceptance of the dissertation proposal in combination with other examinations as determined by the committee to assure the qualifications of the student for the doctorate leads to candidacy for the Ph.D.

6. When the student is admitted to candidacy, a dissertation committee is formed.
   a. The Dissertation Committee is nominated by the Department, and is approved and appointed by the Dean of the Graduate School.
   b. In the Department of Biomedical Engineering, the Dissertation Committee is generally the same as the Supervisory Committee, but it may also be a committee formed anew to undertake the duties of advising and passing upon the dissertation.
   c. The composition of the Dissertation Committee is subject to the same rules as for the Supervisory Committee (see above).
   d. The duties of the Dissertation Committee are:
      i. to consult with and to advise students on their research;
      ii. to meet, at intervals, to review progress and expected results;
      iii. to read and comment upon the draft dissertation;
      iv. to meet, when the dissertation is completed, to conduct the final oral examination and to satisfy itself that the dissertation is a contribution to knowledge and that it is written in lucid and correct English and submitted in approved form.

7. Successful defense of the dissertation leads to the award of the PhD degree.

8. All students in the BME Doctor or Philosophy program are required to complete the following course or credit hour requirements:
a. At least two of the following three courses: BME 601, BME 602, BME 603.
   i Students, who have completed these courses or similar coursework in their previous MS programs, may substitute technical electives for this requirement.
   ii Students in the direct BS to PhD track and students with no prior exposure to biology/medicine are required to complete all three courses
   iii This requirement can only be waived for students holding MD degrees.

b. A zero-credit hour Biomedical Engineering Seminar course (BME 780). This requirement can not be waived.

c. Students admitted with an MS degree must complete at least 18 credit hours of graduate level course work followed by at least 12 credit hours of dissertation work (BME 830 before admission to candidacy or BME 840 after admission to candidacy). A minimum of 6 course credit hours must be at the 700 level.

d. Students admitted with a BS degree must complete at least 42 credit hours of graduate level course work followed by at least 18 credit hours of dissertation work (BME 830 before admission to candidacy or BME 840 after admission to candidacy). A minimum of 12 course credit hours must be at the 700 level.