1. Change the curricular requirements of Biological Sciences (M.S. and Ph.D.) [Effective: Summer 2014]

Candidates must fulfill the requirements of the College of Graduate Studies and of the Department of Biological Sciences. See the College of Graduate Studies section for the general requirements applicable to each degree and the Department of Biological Sciences Graduate Student Handbook for required courses and procedures.

Master of Science. Major in Biology or Microbiology, Molecular Biology and Biochemistry. The M.S. program emphasizes research including, but not limited to the departmental and multidisciplinary areas described above. In addition to the requirements listed above, admission is based upon the compatibility of the student's research interests with the areas of concentration offered by the department and the availability of a faculty member to be the student's mentor. An incoming student arranges a formal laboratory research program. A laboratory research-based thesis is required.

Seamless Bachelor of Science/Master of Science MMBB Program. Thesis and non-thesis options are offered. The seamless B.S./M.S. degree program in microbiology, molecular biology, and biochemistry enables qualified students to pursue the M.S. degree before completion of a B.S. degree in either microbiology, biochemistry or molecular biology/biotechnology. The classical B.S. degree from MMBB is typically completed by the fourth year of undergraduate training and will continue to be the route selected by most students. However, students accepted into the seamless program may work toward completion of both the B.S. and M.S. requirements during their fourth and fifth years or additional years if necessary. Successful students will receive both degrees upon completion of their studies. Provided that adequate academic and research progress is achieved, some students could complete the requirements for both the B.S. and M.S. in five years. Requirements for completion of the B.S. and M.S. degrees through the seamless program, and qualifications of graduates, are expected to be identical to those earning the degrees through the conventional path in which the two degrees are earned sequentially. Students interested in this program should discuss their options with their academic advisors. Identification of a graduate advisor plus formal application and acceptance to the MMBB graduate program and the College of Graduate Studies must be completed before the beginning of the fourth year. Once accepted, students must work toward completing the requirements for both degrees under the supervision of their graduate advisors and graduate committees in accordance with departmental and university guidelines. In regard to official standing within the university, students in the seamless program are classified as graduate students during their fourth and fifth years.

Master of Science Program in MMBB. Thesis and non-thesis options are offered. The M.S. degree may be earned in microbiology, molecular biology, and biochemistry. An incoming student arranges a formal graduate program of at least 30 semester hours in consultation with his or her major professor and graduate committee. Students must take MMBB 589 during the fall and spring of the first year and take MMBB 511 for 1 credit every year. The student is also expected to include MMBB 501 (seminar) each semester. One semester of teaching is required and is obtained through participation in the department's teaching programs. Students are required to pass the core courses MMBB 541, MMBB 542, and either MMBB 585 or MMBB 587. The final exam for MMBB 589 serves as the qualifying exam and is given in May of the first year. A master's candidate prepares a written thesis documenting completion of a laboratory research program. The thesis must be approved by the student's major professor and supervisory committee and be defended during an oral examination. Publication of data from the thesis in the peer-reviewed literature is expected.

Master of Science. Major in Microbiology, Molecular Biology and Biochemistry (non-thesis option). This degree option has the same course credit requirements as the Master of Science thesis option except that students pursuing the non-thesis option enroll in MMBB 599 Non-thesis Master’s Research rather than MMBB 500 Master’s Research and Thesis. Instead of a laboratory research-based thesis the student must submit a final report on a suitable subject that has been approved by the student’s advisor and the Department Chair. The report should be prepared in the format of a publishable review article.

Doctor of Philosophy. Major in Biology or Microbiology, Molecular Biology, and Biochemistry. The Ph.D. program emphasizes research including, but not limited to the departmental and multidisciplinary area described above. In addition to the requirements listed above, admission is based upon the compatibility of the student's research interests with the areas of concentration offered by the department and the availability of a faculty member to be the student's mentor. A doctoral student develops a graduate program of at least 78 semester hours in consultation with his or her major professor and graduate committee. A laboratory research-based thesis is required.

Doctor of Philosophy. Major in Microbiology, Molecular Biology, and Biochemistry. The Ph.D. degree may be earned in microbiology, molecular biology, and biochemistry. A doctoral student develops a graduate program of at least 78 semester hours in consultation with his or her major professor and graduate committee. Students must take MMBB 589 during the fall and spring of the first year. The final exam for MMBB 589 serves as the qualifying exam and is given in May of the first year. Defense of a formal research proposal is required during the second year as part of the preliminary exam. The student is also expected to take MMBB 511 every year and enroll in 501 (seminar) each semester, with active participation in the form of one or more seminar presentations during the course of his or her graduate career. Students are required to pass the core courses MMBB 541, MMBB 542, and either MMBB 585 or MMBB 587. Two semesters of participation in the department's teaching programs are required. A preliminary examination is required in year two prior to admission to final candidacy for the degree. All candidates prepare a formal dissertation reflecting original thought and independent laboratory investigation and defend it during an oral presentation as a final step toward their degree. Publication of data from the dissertation in the peer-reviewed, scientific literature is expected.
Rationale: The Department of Biological Sciences and the Department of Microbiology, Molecular Biology and Biochemistry were merged two plus years ago at which time the MMBB graduate program became part of the Department of Biological Sciences. The proposed changes to the curricula are prompted by the desire to harmonize and simplify the requirements of these degree programs. In developing the new curricula the department has examined the pedagogical foundation for the existing requirements, their effectiveness and whether they facilitated the assessment of student learning outcomes. We found shortcomings in the current degree requirements and this led to a comprehensive review and several important proposed changes in the required coursework.

Physics

1. Change the curricular requirements of Physics (Ph.D.) [Effective: Summer 2014]

   Doctor of Philosophy. Major in Physics. General Ph.D. requirements apply. Correspondence concerning the student's specific goals is encouraged in the preliminary planning of the Ph.D. program.

   Specific departmental course requirements are: Phys 501 (2 cr), Phys 511, Phys 521, Phys 533, Phys 541, Phys 542, Phys 550, Phys 551, Phys 571, and at least nine additional semester-hours of physics courses at the 500 level. A typical study plan would include 40 to 50 credits of course work at the 500 level in physics and about 30 credits in research and thesis. The study plan also would include at least six units of upper-division or graduate course work outside of physics. The nature and number of these additional units will depend upon the professional goals of the individual student. In planning a program, the student should consult with the departmental Academic Standards Committee for approval of any particular choice of nonphysics course work. The Ph.D. degree in physics is primarily a recognition of ability and accomplishment in research. The purpose of the course work is to provide the factual and theoretical background for research. Successful completion of course work is not in itself considered as completion of the major requirement for the degree.

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   Rationale: Phys 511 has always been taught as if it was an independent study course. Student works with major professor to learn the techniques involved in the planned Ph.D. research of the student. However, this is just part of any (beginning) Ph.D. research and, therefore, it does not have to be separated out as a (pseudo) graduate course. Therefore, Phys 511 has been dropped from the list of Physics courses and should not be a Ph.D. requirement anymore.