

semester grace period in which to retain a teaching assistantship. By the end of this grace period, the student must have achieved an overall 3.00 GPA. This 3.00 GPA must be maintained for the duration of the graduate program, or the student will be terminated from the graduate program. The student may retain a teaching assistantship during this second probationary semester also. During the probationary semester, the student must be enrolled in approved program requirements or if the program has not yet been approved in courses appropriate for the program.

Biomedical Engineering

An Interdisciplinary Curriculum
**James Worth Bagley College
of Engineering**

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The interdisciplinary Biomedical Engineering program is administered through Agricultural and Biological Engineering for the College of Engineering. Programs of study and research leading to both the Master of Science and the Doctor of Philosophy degrees in Biomedical Engineering are available. Biomedical Engineering is the engineering discipline that applies engineering principles to study and finds solutions for problems associated with the human body, medicine, and the health care field. At MSU, students can concentrate on research in biomaterials and biomechanics, tissue engineering, ergonomics/human factors, biosimulation/modeling, and other areas.

Admission Criteria—Regular admission into the M.S. or Ph.D. programs requires that the student meet the admission requirements of the Office of Graduate Studies, have an undergraduate engineering or approved computer science (or remedial engineering course work), submit GRE scores, submit TOEFL scores if applicable, receive a positive recommendation by the

coordinating committee of the biomedical engineering graduate committee, and be accepted as a student by a member of the biomedical engineering graduate faculty. The student must have a 3.00 grade point average or higher and, if applicable, a TOEFL score of 600 or greater. Special arrangements for early pre-selection/admission of undergraduate students will be made for engineering students from Jackson State University and science and math students from The Mississippi School of Math and Science. A student entering the Ph.D. program should have a M.S. in an engineering discipline. Special consideration may be given to exceptional students with a B.S. degree in engineering who may wish to bypass the M.S. in completing the requirements for the doctoral degree.

Program of Study/Completion

Requirements—The M.S. degree requires 24 semester hours credit above the baccalaureate degree, at least half of which must be from 8000 level courses or above. In addition, six or more research/thesis credit hours are required. As part of the 24 course work hours students must take: ABE 8501, ABE 8801, BIO 6514 or BIO 6114, and ST 8114. An oral comprehensive examination, and a thesis are required. The Ph.D. degree requires that the student pass a preliminary exam, a dissertation, a minimum of 48 course work hours beyond the B.S., and 20-32 research hours (for a total of 80 hours). In addition to the required course list for M.S. students, a Ph.D. student must also take a graduate-level mathematics course, or approved substitute, such as an additional graduate level statistics course.

The graduate committee for each M.S. and Ph.D. student will be composed of a minimum of four and five faculty members, respectively. Faculty members on the graduate Biomedical Engineering faculty hold appoints in departments in the College of Engineering at MSU, the Department of Chemistry at MSU, the Department of Animal and Dairy Sciences at MSU, the College of Veterinary Medicine (CVM) at MSU, and in departments of the University of Mississippi Medical Center (UMC) in Jackson, MS. The following requirements for a M.S. graduate committee will apply: chair must be an MSU engineering faculty member, one member must be a clinician (CVM faculty, UMC faculty, or practicing clinician), two or more members must be engineers, and two or more members must be MSU faculty members. The following requirements for a Ph.D. graduate committee will apply: chair must be an MSU engineering faculty member, one member must be a clinician (CVM faculty, UMC faculty, or practicing clinician), three or more members must be engineers, and three

or more members must be MSU faculty members.

Provisional Admission—If an applicant does not fully meet the admission requirements of the program, it may be possible for that student to be provisionally admitted. If provisionally admitted, the student must attain a 3.00 GPA on the first nine hours of graduate courses taken at Mississippi State University. Transfer hours or unclassified graduate hours cannot be used. If a 3.00 GPA is not attained, the student may be dismissed from the graduate program.

If a student applying to the M.S. program does not have an undergraduate degree in engineering or an approved C.S. degree, the student will be required to complete approximately 45-48 hours of prerequisite course work in mathematics, the sciences, and engineering. The student will be granted contingent admission until the course requirement has been satisfied. If a student applying to the Ph.D. program does not have a B.S. or M.S. in engineering or C.S., the same set of 45-48 hours of courses will be required before the student is fully admitted.

Academic Performance—Unsatisfactory performance in the graduate program in Biomedical Engineering is defined as any of the following: failure to maintain a B average in attempted graduate courses after admission to the program; a grade of U, D, or F in any one course; more than two grades below a B; failure of the preliminary exam (Ph.D. students only); failure of the research defense; unsatisfactory evaluation of a thesis or dissertation; or failure of a required component of the program of study. Any one of these or a combination of these will constitute the basis for review for possible dismissal. The graduate coordinator will review the record along with the student's graduate committee and take a final course of action which will be recommendation for immediate dismissal or the establishment of a probationary period in which corrective action must take place. Appeal of dismissal can be made by submitting a written appeal statement to the department head. If the dismissal is upheld by the department head upon the student's appeal, the student can then submit a written appeal to the dean of the College of Engineering.

For further information about the program, contact the Biomedical Engineering Graduate Program Coordinating Committee, Department of Agricultural and Biological Engineering, Box 9632, Mississippi State, MS 39762 or send an e-mail to abe-head@abe.msstate.edu. Information can also be found on the Ag and Bio Engineering website at <http://www.abe.msstate.edu>.

Selected Courses for the Biomedical Engineering Graduate Program:

ABE 6312	Biosystem Environments II. 2 hours
ABE 6423	Bioinstrumentation II. 3 hours
ABE 6513	Dynamics of Aging. 3 hours
ABE 6523	Biomedical Materials. 3 hours
ABE 6624	Experimental Methods in Materials Research. 4 hours
ABE 6613	Biomechanics. 3 hours
ABE 6633	Rehabilitation Engineering. 3 hours
ABE 6803	Biosystems Simulation. 3 hours
ABE 8314	Corrosion of Biomedical Implants. 4 hours
ABE 8324	Failure Analysis of Metallic Medical Implants. 4 hours
ABE 8501	Journal Reviews in Biomedical Engineering ^{a, b} . 1 hour
ABE 8801	Clinical Experience for Biomedical Engineering ^{a, b} . 1 hour
ABE 8911	Agricultural and Biological Engineering Seminar. 1 hour
BIO 6514	Animal Physiology ^{a, b, c} . 4 hours
BIO 6114	Cellular Physiology. 4 hours
BIO 8104	Experimental Molecular Biology. 4 hours
BIO 8133	Advanced Cell Biology. 3 hours
CHE 6323	High Polymer Theory and Practice. 3 hours
CME 8113	Computational Geometry. 3 hours
CPE 8813	Digital Image Processing. 3 hours
CSE 6633	Artificial Intelligence. 3 hours
CSE 8663	Neural Computing. 3 hours
ECE 6723	Microprocessors. 3 hours
EM 6213	Advanced Mechanics of Materials. 3 hours
EPP 8223	Scanning Electron Microscopy. 3 hours

IE 6113	Human Factors Engineering. 3 hours
IE 6133	Ergonomics. 3 hours
MA 8203	Foundations of Applied Math I. 3 hours
MA 8213	Foundations of Applied Math II. 3 hours
ME 8243	Finite Elements in Mechanical Engineering. 3 hours
ST 8814	Design and Analysis of Experiments ^{a, b} . 4 hours

^a all M.S. students must take these courses
^b all Ph.D. students must take these courses plus
one graduate-level mathematics course or
approved
^c or BIO 6114 Cellular Physiology

3. to help the student integrate business knowledge; and
4. to improve the student's ability to apply integrative knowledge and personal skills to real business problems.

Admission—An applicant for the M.B.A. program should hold a bachelor's degree from a fully recognized four-year institution of higher learning that enjoys unconditional accreditation by appropriate regional accrediting agencies. All general requirements stated in this publication must be met.

An applicant for the M.B.A. program must take the Graduate Management Admission Test (GMAT). Admission to the M.B.A. program requires a GPA of 3.00 or above out of 4.00 points over the last 60 semester hours of baccalaureate work and a GMAT score of 510 or above or a combined score of 1110 using the formula (200 x GPA) + (GMAT). When a student is deficient in either of the criteria cited, the student's application, nevertheless, may be considered for admission based on the strength of other materials contained in the student's application. However, reasonable minimum levels of performance must be achieved in both the applicant's GPA and GMAT scores.

International Applicants—An international applicant not holding a degree from a U.S. institution must submit a Test of English as a Foreign Language (TOEFL) report from a test administered within the last two years of 575 or higher with their applications in order to be considered for regular admission.

Program of Study—Course work for the M.B.A. program consists of the foundation, core, and electives. At a minimum the candidate for the M.B.A. must complete 30 hours of course work beyond the foundation level.

M.B.A. Foundation—The foundation portion of the program consists of 19 hours that may be satisfied in part or total by prior undergraduate or graduate preparation in business. In the absence of prior preparation, students are required to complete the foundation composed of the following courses.

Foundation Course	Replaces
Survey of Accounting	Principles of Financial Accounting and Principles of Managerial Accounting
Statistical Analysis for Business Decision Making	Business Statistical Methods I & II

Botany

(See Biological Sciences)

Business Administration

College of Business and Industry

Dr. Sara Freedman, Dean
Dr. Barbara A. Spencer, Department Head
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Graduate study is offered in the College of Business and Industry leading to the Master of Business Administration (M.B.A.), the Master of Science in Business Administration (M.S.B.A.) and the Ph.D. in Business Administration. Specialized programs in Accounting, Taxation, Information Systems, Finance, and Economics are described under those departmental headings.

Master of Business Administration

Program Objectives—The mission of the M.B.A. program at Mississippi State University is

1. to expand the student's knowledge of the business world;
2. to improve the student's business skills;