

Academic Requirements for Graduate Students¹

*Department of Biological and Agricultural Engineering
Kansas State University*

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M.S. PROGRAM

Master of Science (M.S.) students in the BAE Department may specialize in the following areas:

1. Environmental Engineering
2. Bioprocessing Engineering
3. Information and Electrical Technology
4. Machinery Systems.
5. Natural Resource Engineering
6. Structures and Environment

Supervisory Committee

The Department Head assigns an advisor to the M.S. student before the first registration. During the second semester of study, the candidate must assemble a Supervisory Committee including a Major Professor and at least two other Graduate Faculty members. Upon approval, the Dean of the Graduate School will formally appoint the Supervisory Committee. This Committee will advise in developing a program of study, supervise the student's progress, and conduct the final examination. The Major Professor serves as chair of the Supervisory Committee.

Program of Study

Every M.S. student must file with the Graduate School a Program of Study, a formal list of the courses the student intends to take to fulfill the requirements of the degree. The Program of Study should consist solely of courses directly related to the M.S. degree. Full-time students must file their program of study before the end of their second semester of graduate study; and part-time students must do so upon the completion of 9 credit hours of the course work. The student should prepare the

¹ These requirements are established in accordance with the KSU 2004-2005 Graduate Handbook. They may be superseded by the changes made in the Handbook.

Program of Study in consultation with the Supervisory Committee, all members of which must indicate their approval by signing the Program of Study form provided by the Graduate School. The Department Head then endorses the Program of Study and forwards it to the Dean of the Graduate School, whose approval must be received within the first two semesters of graduate work. Subsequent changes in the Program of Study require approval of all members of the Supervisory Committee, and if changes are made, a revised Program of Study must be filed with the Graduate School and approved by the Dean of the Graduate School before graduation.

Courses

Graduate study demands a high degree of intellectual aptitude and professionalism. It presupposes a broad preparation and involves the acquisition of specialized knowledge. These facts should be reflected in the graduate student's Program of Study.

At least 30 credit hours beyond the bachelor's degree are required for the Program of Study of an M.S. student.

Course Levels

M.S. students should earn at least 18 credit hours at the 700-level and above, including the thesis/research and the report/problems hours required by the thesis and report options, respectively. Courses at the 600-level may be included. Courses at the 500-level in the student's major area are expected to be completed as undergraduate prerequisites to graduate study or as undergraduate deficiency courses assigned upon admission. Use of 500-level supporting courses in M.S. programs is, therefore, restricted as follows:

- (1) Courses in the student's major field must be above the 500 level.
- (2) Of the 30 credit hours required for the M.S. program, no more than 6 credit hours (two courses) or more than 20% of the program of study may be at the 500 level (A lecture course and associated laboratory are considered one course.)

Problems Courses

No more than 3 hours in problems or other individualized courses may be applied to the M.S. degree.

Graduate Seminar

Two credit hours of the Graduate Seminar (BAE 815) is can be used in the Program of Study.

Thesis and Report

For a M.S. student taking the thesis option, a thesis for 6 to 8 credit hours should be completed as a part of the degree program.

For a M.S. student taking the report option, a written report for 2 credit hours on research or on a problem in the major field should be completed as a part of the degree program.

Students on Graduate Assistantships are required to elect the thesis option.

Final Examination

A final oral examination is required for a M.S. degree. The examination will be administered after the student has completed the program of study and other requirements. The examination takes the form of a defense of the thesis or report.

Final examinations for the M.S. degrees should not be scheduled when the University is not in session, particularly in August. Final examinations should also be scheduled so as to give the Supervisory Committee at least two weeks to review the thesis.

Negative votes by two or more members of a three- or four-member committee constitute failure. A candidate who fails a M.S. examination may take a second examination neither sooner than two months nor later than 15 months after the failure, unless an extension is granted by the Dean of the Graduate School. No third trial is allowed.

The student must submit to the Major Professor a hardbound copy of the thesis or report, in addition to the copies required by the Graduate School, after final revision is completed.

Ph.D. PROGRAM

The Ph.D. degree is offered under six subject headings:

1. Environmental Engineering
2. Bioprocessing Engineering
3. Information and Electrical Technology
4. Machinery Systems.
5. Natural Resource Engineering
6. Structures and Environment

Supervisory Committee

At the time of admission to a Ph.D. program, a graduate faculty member who is certified to direct dissertations and has agreed to work with the student is assigned as the student's Major Professor. With the recommendation of the Department Head, the Dean of the Graduate School then appoints a Supervisory Committee consisting of the Major Professor, who chairs the committee, and at least three other members of the Graduate Faculty. One member of the Committee must be a member of the Graduate Faculty from outside the major professor's Department in the University. These members have continuing responsibility for assisting in planning the Program of Study, advising the student, and meeting with other committee members to ensure a Ph.D. program of high quality.

In consultation with the student, the Supervisory Committee is responsible for advising on the courses to be taken, approving plans for developing the student's capacity for productive scholarship, ensuring that University regulations and program requirements are met, and making adjustments in the program of study.

Program of Study

Every doctoral student must file with the Graduate School a Program of Study, a formal list of the courses the student intends to take to fulfill the requirements of the degree. The Program of Study should consist solely of courses directly related to the doctorate. Full-time students must file their program of study before the end of their second semester of graduate study, and part-time students must do so upon the completion of 9 credit hours. The student should prepare the Program of Study in consultation with the Supervisory Committee, all members of which must indicate their approval by signing the Program of Study form provided by the Graduate School. The Department Head must then endorse the Program of Study and forward it to the College of Engineering Graduate Committee and to the Dean of the Graduate School, whose approval must be received within the first two semesters of graduate work. Subsequent changes in the Program of Study require approval of all members of the Supervisory Committee. If changes are made, a revised Program of Study must be filed with the College of Engineering Graduate Committee and with the Graduate School, and, must be approved by the Dean of the Graduate School before graduation.

Courses

Graduate work demands a high degree of intellectual achievement and professionalism. It necessarily depends on extensive prior preparation and involves the development of understanding and knowledge at the most advanced levels. Programs of Study are therefore expected to reflect in the course selection an intensive specialization extending to the limits of knowledge in one's field.

At least 90 credit hours beyond the bachelor's degree are required for the Program of Study. Students who hold an M.S. degree may request transfer of up to 30 credit hours of that degree toward a Ph.D. degree. Students with an M.S. degree in an area different from that in which they intend to seek a Ph.D. degree may expect to transfer far fewer than the maximum 30 credit hours allowed.

Course Levels

Of the 24 to 30 hours of course work credit hours beyond the master's degree normally required by the supervisory committee, 15 credit hours should be at the 800-level or above, in addition to doctoral research credit hours. No more than 6 hours of 500-level courses beyond those taken towards an M.S. degree are permitted in a Ph.D. program; and courses at 500-level can only be taken with written justification from the Supervisory Committee. For students who bypass the M.S. Degree, no more than 20% of the course work on the program of study may be at the 500 level.

Problems Courses

No more than 6 hours of problems or other individualized courses should ordinarily appear on the Program of Study for a Ph.D. program.

Graduate Seminar

Only two credit hours of the Graduate Seminar (BAE 815) can be used in the Program of Study.

Dissertation

A dissertation is required of all candidates for the award of a Ph.D. degree. Its purpose is to demonstrate the candidate's ability to conduct significant original research of a type appropriate to the academic discipline, to analyze the information obtained from the research, and to present the results in a form acceptable to the Supervisory Committee. The dissertation should represent at least 30 research credit hours.

Preliminary Examination

A Ph.D. student must be given a written preliminary examination, which may be supplemented by an oral examination as prescribed by the supervisory committee. Satisfactory performance in the examination is an indication that the student is prepared to perform independent work toward the doctoral degree and results in the student being classified as a doctoral candidate upon affirmative recommendation by the supervisory committee.

The examination may be scheduled after the program of study is filed and at a time deemed appropriate by the supervisory committee. The preliminary examination must be completed at least 7 months before the final oral examination.

Once the supervisory committee and the student decide when the examination is to be taken, the student should notify the Graduate School one month before the scheduled date.

The student is considered to have passed the examination and to be recommended to candidacy if at least three fourths of the supervisory committee voted to approve candidacy. In case of failure of the first preliminary examination, the supervisory committee may approve a second examination with no more than one dissenting vote. A second examination can be taken no sooner than three months following the initial failure. The composition of the supervisory committee shall not be changed before a final decision is reached on admission to candidacy. A second failure constitutes denial of admission to candidacy for the doctoral degree in the field of study of the graduate program.

Final Examination

The final examination is given to the student by the examination committee, which is composed of the supervisory committee members and an outside chairperson appointed by the Dean of the Graduate School. The candidate should make an effort to meet the outside chairperson at the earliest possible time.

The final oral examination may be taken when the student has completed the program of study and satisfied all other program requirements. Final examinations should be scheduled so as to give the Supervisory Committee at least two weeks to review the dissertation. The examination should be scheduled during times when classes are not in session, particularly in August.

At least three-fourths of the examining committee including substitutes appointed by the Dean of the Graduate School must approve the candidate's performance before he or she is deemed to have passed. A refusal to vote by the chairperson or any other member of the examining committee shall be recorded as a negative vote. With the permission of at least three-fourths of the committee, a failed oral examination may be retaken but no sooner than three months from the date of the failure.

The student must submit to the Major Professor a hardbound copy of the dissertation, in addition to the copies required by the Graduate School, after final revision is completed.

GRADE REQUIREMENTS FOR GRADUATE STUDY

Graduate work is graded A, B, C, D, F, credit/no-credit, pass/fail, incomplete, or withdrawn. For graduate credit, the letter-grade in a course must be C or higher. For a graduate student to remain in good standing, 75% of all letter-graded graduate credit hours obtained at Kansas State University must have a grade of A or B; and a grade point average (GPA) of 3.0 must be maintained. Credit hours from which the GPA is computed do not include problem courses, practice, internships, research, or other forms of individualized study. The Major Professor is responsible for warning a student whose GPA is in danger of falling below these grade requirements.

To be awarded a graduate degree, the student (a) must not be on probation, (b) must have a GPA of 3.0 or higher, (c) must meet all the requirements of the Graduate School, the student's academic program area, and the student's Supervisory Committee, and (d) must be enrolled during the semester in which the degree requirements are completed.

PROVISIONS AND DEFICIENCY COURSES

A graduate student may be provisionally admitted due to deficiency course requirements and a low score in the TOEFL test (international students only).

The provisional status must be removed by successful completion of the deficiency courses (with grades of A or B) and successful completion of English courses required by the English Language Program at Kansas State University.

The following policies on deficiency courses were adopted in 2005:

For admission to the Graduate School for pursuing graduate degrees through the Department of Biological and Agricultural Engineering, Kansas State University, the following courses for deficiency removal are listed for an applicant with an Engineering B.S. degree and for an applicant with a non-engineering B.S. degree who meets all mathematics, physics, and chemistry requirements:

GROUP A

CE 530	Statics and Dynamics
CE 533	Mechanics of Materials
ME 513	Thermodynamics
ME 571	Fluid Mechanics

GROUP B

BAE 530	Natural Resource Engineering
BAE 575	Fundamentals of Agricultural Process Engineering
BAE 640	Instrumentation and Control for Biological Systems

- a. Required deficiency courses for an applicant with an engineering B.S. degree or non-ABET approved Agricultural Engineering (or similarly named) program.
 1. BAE 500: Properties of BioMaterials
 2. One course out of Group A*
 3. One course out of Group B*

* Depending upon a student's background and research interest area.

- b. Required deficiency courses for an applicant with a non-engineering BS degree, who meets all mathematics, physics, and chemistry requirements.
 1. BAE 500: Properties of BioMaterials
 2. Two or three out of Group A*
 3. One out of Group B*

* Depending upon a student's background and research interest area.

- c. The student's Major Professor, based on the student's background and research area, can require other deficiency courses.

PROBATION AND DISMISSAL

Probation

Students who fail to make satisfactory progress in their graduate programs are subject to probation and may be denied continued enrollment in the Graduate School. Any of the following conditions warrants probation:

- a. Grades lower than B on 6 or more credit hours,
- b. A grade point average of lower than 3.0, and
- c. The advice of the Major Professor that the student's progress is unsatisfactory.

Students on probation for deficient grades may be restored to full standing if they accumulate A's and B's in at least 75% of their letter-graded credit hours at Kansas State University, exclusive of problems courses, practice, internships, research, or other individualized study, and attain a GPA of 3.0 or higher.

Dismissal

A graduate student may be denied continued enrollment at Kansas State University for any of the following reasons:

- a. Failure to satisfy conditions for removal from probation.
- b. Accumulation of 9 or more credit hours with grades lower than B, exclusive of problems courses, practice, internships, research or other individualized study.
- c. Failure to meet published departmental requirements or to maintain satisfactory progress toward a graduate degree.
- d. Failure in preliminary examinations (for Ph.D. programs), or final degree examinations. Although students may be permitted to retake such examinations upon recommendation of the Supervisory Committee, in borderline cases, a single adverse result in such examinations is sufficient to deny continued enrollment.
- e. Demonstrable lack of diligence in the removal of deficiencies as evidenced by receipt of grades lower than B in assigned deficiency courses.
- f. Failure to acquire mastery of the methodology and content in a field sufficient to complete a successful dissertation.

Reinstatement

A student who has been denied continued enrollment may petition for reinstatement to the same curriculum or for admission to a different one. Petitions for readmission are heard and decided by standing Readmission Committee.

Students whose petitions are granted are readmitted on probation. In such cases, the Readmission Committee usually stipulates enrollment in a specific number of hours or courses, as well as other conditions. To regain regular status, the reinstated student must also accumulate grades of B or higher in 75% of the credit hours taken at Kansas State University, exclusive of problems courses, practice, internships, research, or other individual study.

GRADUATE RESEARCH ASSISTANTSHIP

When granted a research assistant position, students are given the privilege of being a University staff member. Graduate research Assistant must follow all rules and regulations of the University. If there are questions about the rules and regulations of the University, the Major Professor or the Department Head can answer those questions.

All graduate research assistants are appointed on a 9-month basis. A graduate research assistant may be re-appointed during summer months with the recommendation of the Major Professor. Please note that summer appointments are not automatic.

An assistantship is not a scholarship. A graduate research assistant is expected to work on research projects and to assist his/her Major Professor for at least 16 hours per week with a 0.4 time appointment, and at least 20 hours per week with a 0.5 time appointment. At the discretion of the Major Professor, work assignment may or may not be related to the research project from which the assistantship is provided.

International students must obtain a work permit to be eligible to work on campus. To obtain a permit, contact the International Student Center.

Termination

A Research Assistantship may be terminated on a notice one semester in advance if project funds are depleted or if performance of the Research Assistant in research work or course work is considered unsatisfactory by his/her Major Professor. Under unusual circumstances, a minimum 30-day notice is expected. The notification must be given in writing.

At the end of the first semester a graduate student with a research assistantship is enrolled, a term review is conduct by the Major Professor and the Department Head to evaluate performance of the student in course and assigned work. An unsatisfactory performance may lead to termination of the research assistantship for the consecutive semester. In this case, a 15-day notice should be given to the student by the Major Professor. The notification must be given in writing.

Resignation

A graduate student with a Research Assistant appointment should give a notice one semester in advance to the Major Professor or the Department Head if he/she decides to resign from the position. Under unusual circumstances, a minimum 30-day notice is expected. The notification must be given in writing.

Duration of support

Students are expected to make effective progress toward completion of their degrees and research projects. Only under special circumstances will Graduate Research Assistantship be extended beyond 24 months for M.S. students and 36 months for Ph.D. students.

Leave

All Graduate Research Assistants are appointed on a 9-month basis and, thus, are not eligible for annual leave. A graduate student should inform his/her Major Professor when he/she desires to take a short period of leave. The Major Professor and the student should arrive at an agreement such that the student's and the Department's needs are both accommodated.

ENROLLMENT

The following policies on credit-hour enrollment for graduate students with research assistantship are adopted in 1999:

1. A graduate student with a 4(5)-tenth graduate research /teaching assistant appointment must enroll in 6-12 credit hours during the fall and spring semesters, and 3-6 during the summer semester.
2. All M.S. students must enroll in BAE 815, Graduate Seminar, for at least two semesters during the entire period of his (her) graduate program. All Ph.D. students must enroll in BAE 815 for at least four semesters during the entire period of his (her) graduate program.
3. All graduate students are expected to attend at least 75% of the seminars each semester and to complete the assignments for the course whether or not they are enrolled in the course.

Graduate students should coordinate their enrollment and dropping/adding courses with their Major Professor.

MANUSCRIPT PREPARATION

Policies on manuscript preparation as a part of degree requirements for graduate students in the Department of Biological and Agricultural Engineering were adopted in 1993 and are shown below.

For a M.S. degree candidate:

A draft of at least one manuscript is required before scheduling the final oral examination and a final draft of the manuscript will be submitted to the major professor before the student's final thesis is signed.

For a Ph.D. degree candidate:

Drafts of at least two manuscripts are required before scheduling the final oral examination and final drafts of the manuscripts will be submitted to the major professor before the student's final dissertation is signed.