



Graduate Student Handbook

Fall 2009-Summer 2010



Natural Resource & Environmental Graduate Students; Phil Gaebler and Seth McClure, plotting their field work.

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Prepared by
The Graduate Instruction and Research Committee
Department of Biological Systems Engineering
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1 INTRODUCTION

Graduate students in Biological Systems Engineering Department (BSE) strive to better understand the current theories, principles, and issues in wide-ranging biologically related fields. The students focus on better understanding how research helps generate new knowledge and how knowledge is applied to address both practical and fundamental problems. Through this process, graduate students improve their ability to think critically and creatively, to synthesize, analyze, and integrate ideas for decision-making and problem solving.

The graduate program in BSE is "tailor-made" to meet the specific needs and interests of a student and his/her major professor. A graduate student has primary responsibility for developing his/her program of study, conducting research, and preparing a thesis. However, the student must maintain close contact with his/her major professors for advice and supervision in all phases of research.

This handbook provides an overview of the requirements and policies for graduate study in the BSE Department at the University of Wisconsin-Madison.

2 GRADUATE FACULTY

2.1 Biological Systems Engineering Faculty

David R. Bohnhoff	Ph.D. Professor
Matthew F. Digman	Ph.D. Assistant Professor
Sundaram Gunasekaran	Ph.D. Professor, also Food Science, Chair of Graduate Instruction and Research Committee (GIRC)
Awad S. Hanna	Ph.D. Professor, also Civil and Environmental Engineering
Brian J. Holmes	Ph.D. Professor, also Veterinary Medicine
David W. Kammel	Ph.D. Professor, also Director of Center for Dairy Profitability
K.G. Karthikeyan	Ph.D. Associate Professor
Richard M. Muck	Ph.D. Professor, USDA-AARS Dairy Forage Research Center
Xuejun Pan	Ph.D. Assistant Professor
John Ralph	Ph.D. Professor, Biochemistry
Douglas J. Reinemann	Ph.D. Professor, also Institute for Environmental Studies, Dairy Science and Agroecology

Troy M. Runge
Kevin J. Shinnars
John Shutske
Richard J. Straub
Anita M. Thompson
Patrick W. Walsh

Ph.D. Assistant Professor, also Director of Wisconsin Bioenergy Initiative
Ph.D. Professor, also Mechanical Engineering
Ph.D. Professor, also Associate Dean CALS Extension and Outreach
Ph.D. Professor, also Mechanical Engineering, Department Chair
Ph.D. Associate Professor
Ph.D. Professor

2.2 Adjunct Faculty

Mark R. Etzel
Richard W. Hartel
Sam King-Jau Kung
Philip R. O'Leary
Mark A. Purschwitz
Paul D. Thompson

Ph.D. Professor, Food Science and Chemical and Biological Engineering
Ph.D. Professor, Food Science
Ph.D. Professor, Soil Science
Ph.D. Professor, Engineering Professional Development
Ph.D. Professor, National Farm Medicine Center
Ph.D. Professor

Note:

1. All students must take BSE 901 Graduate Research Seminar during the last Spring Semester of their Graduate program.
2. M.S. students must include 6 cr. of coursework at 500 level or above.
3. Ph.D. students must include 9 cr of coursework of 600-800 level classes from an engineering department and/or comparable technical area and take a teaching preparatory/professional communications class.

3 POLICIES REGARDING GRADUATE STUDY

3.1 Graduate School Policies and Requirements

All requirements set forth by the UW Graduate School must be met. Every graduate student should review and understand the Graduate School guidelines. Up-to-date information on Graduate School policies and requirements can be found at their website: <http://www.wisc.edu/grad/>.

- Graduate School Catalog
- Academic Guidelines
- Completing Your Degree

3.2 Biological Systems Engineering Department General Policies and Requirements

3.2.1 Admission to Graduate Study in Biological Systems Engineering

All pertinent Graduate School requirements must be met. These are listed below.

3.2.1.1 UW Graduate School Admission Requirements

As you apply to the UW, you need to be aware of two sets of requirements: (1) Graduate School minimum admission requirements and (2) departmental admission requirements.

(1) The Graduate School sets the minimum admission requirements for all prospective UW graduate students.

The minimum admission requirements are:

- Academic program admission requirements (see below) may be in addition to, or more rigorous, than the Graduate School requirements.

- Grades – A minimum undergraduate grade-point average (GPA) of 3.00 (on a 4.00 scale) on the equivalent of the last 60 semester hours (approximately two years of work). International applicants must have a strong academic performance comparable to a "B" or above average grades. We use your institution's grading scale; do not convert your grades to a four point scale.
- Degree - A bachelor's degree from a regionally accredited U.S. institution, or a comparable degree from an international institution.
- International applicants must have a degree comparable to a regionally accredited U.S. bachelor's degree. Your school should provide an official translation of your documents; otherwise have a translation done by your school or an official translator. In



- English Proficiency - Every applicant whose native language is not English, or whose undergraduate instruction was not in English, must provide an English proficiency test score. The required minimum scores are: TOEFL: 550 for paper test, 213 for computer, and 80 for internet (iBT)

MELAB: 77 IELTS: 6 Scores are accepted if they are within two years of the start of the admission term. Country of citizenship does not exempt applicants from this requirement. Language of instruction at the college or university level, and how recent it has been, are the determining factors in meeting this requirement. Applicants are exempt if: English is the exclusive language of instruction at the undergraduate level; **or** they have earned a degree from a regionally accredited U.S. college or university not more than 5 years prior to the anticipated semester of enrollment; **or** they have completed at least two full-time semesters of graded course work, exclusive of ESL courses, in a U.S. college or university, **or** at an institution outside the U.S. where English is the exclusive language of instruction, not more than 5 years prior to the anticipated semester of enrollment.

- An applicant whose TOEFL (paper-based) test score is below 580; TOEFL computer based test (CBT) score below 237; (TOEFL internet based iBT) test score below 92; IELTS score below 7; or MELAB below 82 must take an English assessment test upon arrival. Depending on your score you may need to register for any recommended English as a Second Language (ESL) courses in the first semester you are enrolled.
- International Financial Information - International applicants are required to have adequate financial resources to cover their expenses for the duration of their studies at UW-Madison. Do not send any financial statements until requested.

(2) The departmental admission requirements are often more rigorous than the minimum requirements set by the Graduate School. However, the department may be flexible on some requirements based on an individual student's background.

(3) BSE Graduate students are required to be enrolled during all three semesters; fall, spring and summer sessions. *Please see page 34 for details on summer enrollment.*

The BSE Department stipulates that all applicants should have a Bachelor of Science degree from an ABET (Accreditation Board for Engineering and Technology) accredited engineering program. Applicants who do not have a Bachelor of Science degree from an ABET accredited engineering program may be eligible for admission if they have completed the following basic engineering course work:

- Thirteen credits of mathematics, (calculus, analytical geometry, and differential equations);
- Six credits in statics, mechanics of materials, material sciences;
- One of the following groups of courses **depending on the area of graduate research:**
 - Machinery systems engineering: dynamic, fluid dynamics, and thermodynamics.
 - Food and bioprocess engineering: fluid dynamics, heat transfer, and thermodynamics.
 - Natural resources and environmental engineering: soil science, fluid mechanics, and soil and water engineering.
 - Structural systems engineering: structural engineering heat transfer, and thermodynamics.
 - Agro-based chemistry and materials: analytical, organic and physical chemistry and basic materials science.

When necessary, course work equivalencies shall be determined by the department's Graduate Instruction and Research Committee (GIRC). The applicant's intended major professor may require an incoming graduate student to take additional course work before admission is granted.

When the GIRC evaluates each applicant's credentials, special consideration is given to the undergraduate program, letters of recommendation, statement of purpose, and apparent aptitude and ability to perform research. **International students must submit TOEFL scores.** Applicants are strongly encouraged to submit GRE scores which may be used in decisions regarding admission, graduate research assistantships, and college and university fellowships.

3.2 Fellowship and Assistantship Holders

For Graduate School policies concerning support, see the following sections in the *Academic Guidelines*: (1) Fee Remission, (2) Full-Time Status, (3) Non-resident Tuition Remission, (4) Project or Program assistant (PA), (5) Research Assistant (RA), (6) Teaching Assistant (TA), (7) Summer Registration, (8) Taxes, and (9) Tuition Deduction.

Research assistantships for Master's degree candidates are limited to 4 semesters plus 2 summer sessions; for Ph.D. candidates, 6 semesters plus 3 summer sessions, generally. In cases where both the Master's and Ph.D. degrees are obtained from the University of Wisconsin (and the student proceeds directly from a B.S. degree into a Ph.D. degree program) research assistantships are limited to a total of 8 semesters plus 4 summer sessions. Exceptions to this policy under extenuating circumstances will be considered upon petition to the GIRC. The student's major professor should initiate the petition.

3.3 Minimum UW-Madison Credit Requirement

The Graduate School's minimum credit requirement for graduation can be satisfied only with graduate-level courses taken as a graduate student at UW-Madison. The only exception may be graduate-level course work taken as a CIC Traveling Scholar. The minimum credit requirement is a degree requirement instituted by the graduate faculty to ensure that a graduate degree represents preparation beyond course requirements. The minimum credit requirement is meant to ensure that, in addition to course work, those who earn graduate degrees have spent sufficient time engaged in their discipline (that is, meeting with professors and peers; participating in research projects and colloquia; using laboratories, clinics, and/or libraries; and generally becoming an active contributor to a research discipline).

3.4 Health Insurance

Health insurance is available for graduate students. See the *Academic Guidelines* sections on Insurance, SHIP (Student Health Insurance Plan), University Health Service, and Appendix 2. The Department Payroll and Benefits person (room 115 Agricultural Engineering Building) has additional information regarding information regarding insurance.

3.5 Requirements for the Master's Degree

Two options are available for the Master's degree in BSE: a thesis option and a non-thesis option (i.e., an independent study program). If your objective is to pursue a Ph.D. degree and/or research-oriented career, you are strongly encouraged to select the thesis option. Graduate research assistantships are generally not awarded to students pursuing the non-thesis option. Students should select course work in consultation with and approval of the major professor. Total credits required (beyond B.S.) for M.S. degrees in the BSE Department are listed below.

	Thesis Option	Non-Thesis Option
* Minimum total credits	24	30
† Minimum course credits	18	24
Research or independent study	5 to 8	3 to 6

†† BSE graduate seminar	2	2
‡ Minimum BSE credits	8	8

* Course plus research and seminar credits.

† At least 6 credits must be from course work at the 500-level and above from an engineering department and/or technical area.

†† In addition to 18/24 minimum course credit.

‡ Includes research credits.

Every candidate should review the requirements for the Master's degree, given in the Graduate School publication; *Academic Guidelines*, specifically sections on: (1) Adviser, (2) Committees (Doctoral/Master's) (3) Degree Completion Fee, (4) Double Degree, Joint Degrees and Dual Degree, (5) Final Oral Examination and Final Oral Examination Committee, (6) GPA Requirement and Grading System, (7) Graduation, (8) Residence for Tuition Purposes, (9) Second Degrees, (10) Senior-Graduate Status, (11) Study Abroad, (12) Summer Enrollment, (13) Time Limits, (14) Transfer of Graduate Work from Other Institutions, and (15) Warrants.

Both thesis and non-thesis option students should select a committee of three faculty members in consultation with their major professors. (See pages 30 & 31 for committee composition) For thesis option students, at least one of the committee members should be from another department. All students must present their research results at an oral final examination to the committee.

All BSE graduate students are required to take BSE 900: Graduate Research Seminar" within the first three semesters (*offered fall semester only*).

All BSE graduate students are required and should take "BSE 901: Graduate Research Seminar" within the last two full semesters (*offered spring semester only*) of their graduation. However, when an MS student graduates within three semesters and is unable to schedule BSE 901 due to extenuating circumstances the student's advisor should request the Departmental Graduate Instruction and Research Committee (GIRC) in writing that the requirement of BSE 901 be waived. In which case, the GIRC would grant the waiver but would require the student to make a "brown bag" presentation of his/her research results to the department during the last semester of study.



Graduate students should register for an appropriate number of credits of BSE 990 (Thesis Research). If the student's progress is satisfactory, the student will receive a grade of P (progress) for each semester of BSE 990 until the final semester. At that time all of these credits will be given an S (satisfactory) grade by the major professor.

3.6 Certification

All students must complete a graduation checklist and be certified by the GIRC before taking their final oral examination (*Page 22*). A request for a Graduate School Warrant will not be processed until this checklist has been completed. Questions concerning committee members can be answered by turning to page 31. To receive a master's degree, a student should contact their program office at the beginning of the term in which they intend to graduate. Their program office will check that they have met department/program requirements and will request a warrant from the Graduate School on the student's behalf. Students need to be enrolled for a minimum of two graduate-level credits (300 and above) for a grade (audits and pass/fail do not satisfy this requirement) during the term in which they intend to graduate. For more information and for deadlines, see *Expecting Your Master's Degree? Procedures to Help* at <http://www.grad.wisc.edu/education/completedegree/mdegree.html>.

3.7 Teaching Experience

Students pursuing the M.S. degree who desire teaching experience may assist in the department's teaching program in consultation with his/her major professor. Please see section 3.9.2 for additional guidelines.

3.8 Requirements for the Ph.D. Degree

3.8.1 UW Graduate School Requirements

Graduate School regulations concerning course work are given in the *Academics Guidelines* in sections on: (1) Auditing Courses, (2) Continuous Enrollment Requirement, (3) Credit Load, (4) Dissertator (FAQ), (5) Full-Time Status, (6) GPA Requirement, (7) Grading System, (8) Overloads, (9) Transfer of Credits, and (10) Underloads.

Every candidate should review the requirements for the Ph.D. degree as given at the following website of the Graduate School:

<http://www.wisc.edu/grad/>

- Graduate School Catalog
- Academic Guidelines
- The 3-D'[s: Deadlines, Defending , Depositing Your Doctoral Dissertation A Guide to preparing Your Doctoral Dissertation

In addition all Ph.D. candidates should review the following sections of the *Academic Guidelines*: (1) Adviser, (2) Certificate of Philosophy, (3) Change of Degree Level, (4) Committees, (5) Continuous Enrollment Requirement, (6) Credit Load, (7) Degree Completion Fee, (8) Dissertation, (9) Dissertator (FAQs), (10) Final Oral Examination, (11) Final Oral Examination Committee, (12) Full-Time Status, (13) GPA Requirement, (14) Grading System, (15) Graduation, (16) Joint Degrees, (17) Major and Minor, (18) Preliminary Examinations, (19) Residence for Tuition Purposes, (20) Second Degrees, (21) Study Abroad, (22) Summer Enrollment, (23) Time limits, (24) Transfer of Graduate Work from Other Institutions, and (25) Warrants.

3.8.2 Biological Systems Engineering Department Requirements

3.8.2.1 Ph.D. after BS without Earning an MS

A graduate student may pursue Ph.D. in the BSE department directly after BS degree without earning an MS degree provided that he/she does the following:

1. Complete course work and research credits required for Ph.D. degree per Graduate School and department guidelines.
2. Pass qualifying examination (oral and/or written) within four full semesters since commencing graduate work.
3. Submit a research manuscript to a peer-review journal prior to preliminary examination.
4. Pass preliminary examination and final defense per Graduate School and department guidelines.

3.8.2.2 Credits

Normally 66-78 credits are required beyond the B.S. degree. Of these, 42 to 54 course credits and 24 thesis credits must be completed. At least 36 of the course credits must be taken in physical sciences. Up to 6 research credits received for the master's degree may be transferred from another accredited institution. No other research credit may be transferred. 18 Master's course credits earned from another institution maybe transferred towards Ph.D. Additional credits need to be approved by GIRC. At least 9 credits must be from the 600 to 800 level classes from an engineering department and/or comparable technical area. In addition to the above coursework requirements, 2 credits of graduate seminar as well as 3 credits of teaching preparatory/professional communications class will be required for all Ph.D. students. Some possible courses are EPD 597 and EPD 654. The teaching course credits shall not be used to fulfill 9 credits of 600 to 800 level classes from an engineering department and/or comparable technical area. Teaching preparatory courses and seminar courses will NOT count towards the required 24 (42) course credits.

All course credits need to be taken as a letter grade unless course is only offered for credit/no credit. Credit/no credit courses must get prior approval from advisor. Only 1 credit/no credit of the 9 credits can be used to fulfill your credits from 600-800 level classes.

3.8.2.3 Course Work

All graduate students are required to register for one credit of BSE 900 (only offered fall semesters) within the first three semesters as a graduate student in BSE. However, if you completed your Master's Degree in BSE you do not have to repeat the 1 credit seminar 900. You are also required to take one credit of BSE 901 (only offered spring semesters), Graduate Research Seminar. As a part of BSE

901, all students (if you took this course as a MS student you will need to repeat the course as a Ph.D. student to reflect your current research) are required to make an oral presentation reporting their research results, typically during the last semester of their graduate program.

Graduate students should register for an appropriate number of credits of BSE 990 (Thesis Research). If the student's progress is satisfactory, the student will receive a grade of P (progress) for each semester of BSE 990 until the final semester. At that time all of these credits will be given an S (satisfactory) grade by the major professor.

Graduate students in BSE must maintain a minimum overall B average (3.0 GPA) during their graduate studies. Seminars, research, or other special problems credits may not be used to offset BC or C grades. No grade below a C will be accepted for fulfilling course work requirements for the degree.

Recommended course loads are as follows.

Percent of time obligated by an assistantship	Recommended maximum course load & residence credits
50 % or less	9 to 12
Between 50 and 67 %	6 to 8
Greater than 67% but less than 100%	3 to 5

3.8.2.4 Minor

The student must include a minor field(s) of study that is (are) selected in consultation with the major professor. The minor should be chosen from a field that will both diversify and strengthen the student's research program. The plan of study for the minor should be developed in consultation with the minor professor and the minor department. The students may also declare a distributed minor by taking classes in more than one department.

The purpose of the minor is to add breadth to a Ph.D. major. Monitoring the course content and credit requirements for Ph.D. minors is the responsibility of the minor department/program. Major departments/programs are responsible for indicating the expected minor (either Option A or B, see below) at the time of the preliminary warrant request.

In summary, minor options are as follows:

Option A (external): Requires a minimum of 10 credits in a single department/program. Selection of this option requires the approval of the minor department/program. (Please complete Option A Minor Approval Form on page 35 in this handbook)

Option B (distributed): Requires a minimum of 10 credits in one or more departments/programs and can include course work in the major department/program. Selection of this option requires the approval of the major department/program.

The Graduate School's minimum course requirements for the minor include:

- An average GPA of 3.00 on all minor course work.
- Course work must be graduate level (the equivalent of UW-Madison courses 300 level or above; no audits or pass/fail).
- Maximum 3 credits of independent study (e.g., 699, 799, 899, 999).
- Research and thesis cannot be used to satisfy the minor (e.g., 790, 890, 990).
- No more than 5 credits of course work completed more than five years prior to admission to the Ph.D.; course work taken ten years ago or more may not be used.

3.9 Preliminary Plan of Study

Soon after beginning work toward the Ph.D. degree, the student should consult with the major professor to prepare a *Preliminary Plan of Study* and select an area for research. This should be completed by the end of the first year.

3.9.1 Qualifying Examination

A Qualifying Examination is required, except when waived by the major professor, of all students working toward the Ph.D. degree. The purpose of the examination is to provide additional information upon which to base the decision of whether the Ph.D. program is in the best interest of the student and the department and to ensure that the Ph.D. candidate has basic competency in engineering fundamentals, advanced knowledge in an area of specialization, and potential for conducting research at an advanced level. The student's major professor, will appoint a Qualifying Examination Committee. This examination committee, chaired by the major professor, is responsible for preparing, administering and evaluation of the Qualifying Examination which may be written and/or oral at the discretion of the Committee. The examination will have three emphasis areas: engineering principles, creativity and research ability, and biological systems engineering specialty as designated by the student.

Students entering the Ph.D. program with a B.S. and M.S. degree in engineering must complete the Qualifying Examination no later than their third semester of residency after beginning the Ph.D. program. Students entering the Ph.D. program directly from a B.S. degree or students with no engineering degree must take the Qualifying Examination no later than the fourth semester of residency after beginning the Ph.D. program. The student should check with his/her major professor at the beginning of the Ph.D. program.

Upon evaluation of the Qualifying Examination and review of the student's records, the Qualifying Examination Committee will make one of the following recommendations.

1. The student has passed the Ph.D. Qualifying Examination and is encouraged to continue with the Ph.D. program.
2. The student needs remedial work in one or more areas which can be fulfilled by self-study and passing the Qualifying Examination at the next opportunity or by taking additional coursework in the area (s) at the option of the student's Examination and Guidance Committee. Under no circumstances will a student be allowed more than two attempts at passing the Ph.D. Qualifying Examination.
3. The student has done poorly on the Qualifying Examination and is discouraged from continuing with the Ph.D. program.



The recommendation of the committee will be made in writing to the student, the GIRC, and the Department Chair. The examinations become the property of the department and will not be returned to the student.

Student appeals of the examination procedures or of the committee's recommendation should be addressed to the Chair of the GIRC.

3.9.2 Teaching Experience

Many students graduating with Ph.D. degrees enter an academic environment that requires teaching skills. Even those entering career positions not directly involved with classroom teaching will be working with and supervising others where teaching skills are important. In order to help students prepare for future teaching responsibilities, the department encourages all Ph.D. candidates to gain some teaching experience prior to graduation. This should be done by: (1) taking teaching preparatory classes and (2) assisting the student's major professor in teaching-related classroom activities as assigned by the professor for one semester not more than 10 hours per week. Students should consult their major professor to gain the appropriate teaching experience.

3.9.3 Guidance and Examining Committee

As early as possible in a Ph.D. student's program, a Guidance and Examining Committee shall be selected in consultation with and approval of the major professor. The committee must be appointed before the student takes the Preliminary Examination. The Guidance and Examining Committee must consist of at least four faculty members of professional rank in addition to the major professor who serves as the committee chair. At least one of the members shall be from outside the major department. Preferably one of the members will represent the Minor Department. This committee is available to advise the student throughout his/her thesis research and will also administer Preliminary and Final Thesis Examinations. (See page 30)

3.9.4 Comprehensive Preliminary Examination

The Graduate School does not formally recognize a student as a Ph.D. candidate until he/she has passed the comprehensive Preliminary Examination. The purpose of this examination is to establish that the student has gained an appropriate level of knowledge in Biological Systems Engineering and related fields and is able to apply this knowledge in pursuing independent research. This examination may not be taken until: (1) the Qualifying Examination has been passed, (2) all incomplete grades have been cleared, (3) a minimum of two-thirds of the course work has been completed, and (4) a detailed research plan is prepared and submitted to the Guidance and Examination Committee at least four weeks before the examination. Before the Preliminary Examination is taken, a warrant must be obtained from the Graduate School. The student should request a warrant through the Department's Student Services Coordinator, minimum three weeks prior to the examination. (See page 26)

The examination may be written and/or oral, as desired by the Guidance and Examining Committee. The minor department may require that the student take an additional examination in the minor field, depending upon the policies and regulations of the minor department. If required, the minor department examination must be passed before the student takes the Comprehensive Preliminary Examination. After completing the preliminary examinations and course work, the candidate takes on the status of dissertator which results in reduced fees (dissertators register for only 3 credits each semester).

3.9.5 Certification

See Section 3.6 above. Ph.D. candidates should submit their Final Oral Committee Approval Form at least three weeks before the anticipated date of their final dissertation defense. Ph.D. candidates must be enrolled during the term in which they intend to graduate. For more information, see *The 3-D's: Deadlines, Defending, Depositing your Ph.D. Dissertation*, <http://www.grad.wisc.edu/education/completedegree/ddd.html>.

3.9.6 Final Oral Examination

The Final Oral Examination covers the thesis and general fields of the major and minor studies. The major professor schedules the examination at a time agreed upon by the candidate, the Guidance and Examining Committee, and the Graduate School.

The Graduate School's policies and procedures for the Final Oral Examination may be found in the *Academic Guidelines* section entitled Final Oral Examination. The committee must consist of at least four faculty members in addition to the major professor who serves as the committee chair. At least one of the members shall be from outside the major department. Preferably one of the members will represent the Minor Department with the major professor as Chair. Three of the five committee members are designated as readers; one of these may be the minor field representative. The committee is not restricted to five members; additional members may be added. Departments may call upon guest experts above and beyond the required five, but the Graduate School is not able to provide funds to cover costs incurred. If the major professor resigns, takes an extended leave, or becomes incapacitated, the department Chair, in consultation with the candidate, shall recommend the appointment of a new major professor to the Graduate School. (See page 30)

4 General BSE Departmental Policies

4.1 Thesis

All students must provide at least two professionally-bound hard copies of the thesis: one copy to the department library and one to the major professor. In addition, an electronic version of the thesis must be made available to the major professor. The department requires all students deposit an unbound copy of their thesis to Memorial Library (please refer to the Graduate School's web site for further information). Thesis-binding services may be available at a discounted cost to the student through the department. Please contact the departments' student services coordinator regarding this.

4.2 Professional Society Meetings

All graduate students are strongly encouraged to attend at least one professional society meeting during their tenure as graduate students in BSE. Ph.D. students are encouraged to make at least one technical presentation at such a meeting.

Vilas Fellowships

Graduate student dissertators or final year MFA students who plan to present their research at a conference or travel for dissertation research purposes. Dissertator status must be final before the first day of the Fall semester of the current award year. MFA students must be in their final year of work toward their degree (40 or more credits). Travel must occur between September 1 and August 31 for each award cycle. Priority will be given to those who have never received a Vilas Travel award, though previous recipients are eligible to reapply. See their Web site: <http://www.grad.wisc.edu/admin/gsc/vilasfellowships.html>

4.3 Office Equipment and Supplies

A stock of office supplies is maintained in Room 115. These supplies may be obtained from office support staff. These supplies are intended to support *departmental business*. Departmental supplies are not to be used to prepare or duplicate class reports, employment correspondence, or copying of library materials unless approved by major professor. Copying of correspondence or personal items is prohibited.

Use of the departmental copier to copy your thesis during preparation for review by your major professor is permissible. However, final copies of your thesis must be done on paper that meets the Graduate School's requirements and must be made at a commercial photocopying facility.

The university has a contract with an outside binding agency. This enables the department to assist the graduate student in obtaining thesis binding at a reduced cost. The student is responsible for making all copies of their thesis, using a copy shop and not the departments' copier. Working with the student services coordinator, the student can select a cover color from the list of colors the binding company currently offers. The student service coordinator will ship the unbound copies to the binding company. An invoice will be sent to the student once binding has been completed and all invoices received. Students will be charged for the shipping costs, to ship the unbound copies and then the return shipping of the bound copies, in addition to the actual binding cost. Once the invoice is paid, the student can then pick up their bound copies from the main office. All fees incurred in the binding process are the responsibility of the student. The BSE department offers this as a service to BSE students, but does not cover any of the costs.

4.4 Services

4.4.1 Secretarial Assistance

The Department Administrator will assign secretarial help for graduate students when needed. Check with your major professor to obtain this information. This help is available only for research correspondence and research reports. It is not to be requested for typing theses, class reports, or personal business.

4.5 Mechanical, Electrical and Technical Assistance

Mechanical, electrical and other technical assistance is available on a limited basis through the departmental Research Shop. Arrangements for such assistance should be made in advance with the major professor and the technician. Since there is usually a waiting list for this service, students are advised to make arrangements several weeks before the work is needed. The technician must be provided with suitable drawings and instructions for completing the work. If project funds are available, these technical services can be arranged with outside sources, such as the University Physical Sciences Laboratory or an outside vendor.

4.6 Photographic Services

A pictorial record of research projects is important, so students are urged to take photographs of their research activities. Departmental photographic equipment is usually available through the on-line equipment checkout calendar <http://144.92.31.11/equipment/>.

4.7 Computer Services

Several computer facilities are available to BSE graduate students. Students should consult with their advisors for appropriate computers and access to them for their projects. Computer facilities available to BSE graduate students include Computer-Aided Engineering (CAE) within the College of Engineering and the CALS Computer Facility located in the basement of the Animal Sciences Building. The department also maintains computers for graduate students' use in the Student Engineering Design Center located in Room 217 of the Agricultural Engineering Building. Please take note of current procedures posted in this laboratory.

4.8 Information Retrieval System

Steenbock, Wendt, and other campus libraries have computerized information retrieval systems. Check with the respective library staff for scheduled workshops and available systems. Extensive information/database search and retrieval is possible through the UW Libraries website. For example, you can request an interlibrary loan copy of a book or journal article not found in the UW library system. This service is made available free of charge. For a nominal fee, you may also request a copy of an article from a journal available at one of the UW Libraries. The UW Library System also subscribes to a number of electronic journals. In many cases the entire journal article can be downloaded and/or printed. Students are strongly encouraged to take full advantage of these resources for their research.

4.9 Use of Department Facilities and Equipment

The Agricultural Engineering Building and Agricultural Engineering Laboratory Buildings are normally restricted to departmental activities. The Department Chair must approve any other use of these buildings. Office support staff, with the approval of your major professor, issues keys. **You may not lend your keys to others.** Graduate students will be issued the necessary keys to carry on their work. With this assignment comes the responsibility of making sure that all outside doors are locked whenever the student is the last to leave. Working in either building after 6:00 p.m. on weekdays or on weekends requires an after hours permit which can be obtained from the student service coordinator after prior approval by the major professor. All keys and passes must be returned before you leave the university.

The Reading Room (Room 233, Agricultural Engineering Building) contains some technical journals. The room is maintained for the convenience of the BSE staff and students. The room may be used during office hours. Most materials should not be removed from the Reading Room. Graduate theses by BSE graduates may be checked out through the departmental office in Room 115. Bound theses are kept in the conference room (Room 212, Agricultural Engineering Building).

4.10 University Vehicles

Vehicles are available for use on research projects and related departmental business. Before using any departmental vehicle for the first time, check with your major professor about the proper procedures to check out vehicles. University policies can be found at: http://www.bussvc.wisc.edu/risk_mgt/drivetable.html Only those who hold a valid driver's license, have a good driving record, have a state driver's authorization card, and are on the departmental payroll or on the payroll of another department and assigned to a joint research project may drive university vehicles. Vehicles are normally operated on a pool basis and are not assigned to any particular project. Before checking out a vehicle, check the on-line vehicle checkout calendar to see its availability. In order to become a registered user of the on-line vehicle calendar fill out the required information at: <http://144.92.31.11/vehicles/>. You must use a UW e-mail account to obtain access for vehicle checkout. You must sign out and give return time and a phone number you can be reached at (if you have a cell phone list that number). In a few cases, a vehicle may be reserved for use on a project. Do not use a reserved vehicle without first checking with the research shop supervisor. Keys should be returned to the cabinet when you return the vehicle. Vehicles must be locked and all windows closed whenever the vehicle is not in use. Drivers are responsible for any parking or driving violation citations received on or off campus.

It is state law that all drivers and passengers in vehicles wear seat belts, and you are expected to obey this law. Parking of both University and personal vehicles on campus is closely regulated. If uncertain about where to park, consult with your major professor or research shop personnel.

In some cases it may be desirable to use your own vehicle. If you expect to be compensated for such use, check with your major professor to be sure money is available for this purpose before using the vehicle.

4.11 Telephones

The University telephone system should not be used for personal long distance calls. Business long distance calls should be cleared with your major professor. (see UW phone directory for instructions) To make a long distance phone call, you must first dial "8" then "1" and finally the required telephone number. *Do not dial "9" to place a long distance call, as this results in a considerably higher per minute charge to the department.*

5 Use of Research Shop and Laboratories

Specific arrangements are necessary if large equipment is to be moved into any laboratory. Use of teaching laboratories for other than scheduled instruction should be cleared with the instructor in charge of the laboratory. Any special work in these laboratories will not be



permitted during the hours of regular class use. Any equipment used for special work in a teaching laboratory must be dismantled and put away so as not to interfere with scheduled classes.

Before beginning any operation which may be very dirty, dusty, noisy or otherwise particularly disturbing to others, obtain permission from the person in charge of the laboratory or your major professor. You will be responsible for cleaning the laboratory and equipment if the job produces more than the normal amount of dust or dirt.

Use of the research shop and laboratories is restricted to the hours of 8 A.M. to 5 P.M., Monday through Friday, unless special permission is obtained from your major professor or research shop personnel. You should inform research shop personnel that you will be working after regular hours. A University building pass is required if you will be in the laboratory building beyond normal working hours.

5.1 Research Shop and Laboratory Equipment

Equipment in teaching labs other than instrumentation may usually be used in the laboratory if it does not interfere with scheduled classes. No equipment should be removed from any laboratory without obtaining permission from the instructor in charge of the equipment and properly checking out the equipment. You are responsible for returning equipment you use to its proper storage location in good condition.

6 General Instructions for Use of Research Shop Equipment

Instructional workshops on departmental research shop and safety procedures are given periodically. Ask your major professor when the next class will be held. You are expected to complete this course and sign the department's Shop Safety Form before you use the research shop facility. University regulations require that you be instructed in the use of and checked for your ability to use any power tool. You may use power tools only when someone else, who has been instructed in the use of the tools, is present. This includes both portable and stationary tools for metal- or wood-working.

If you have any doubt or have not been certified for a particular machine, ask one of the staff members or research shop personnel before starting the job. All tools **MUST** be put away in tool kits, cabinets, or racks before leaving the research shop or laboratory. Tools should be cleaned if necessary before storage. If tools must be used at an outside site, they may be left at the job site provided they can be stored in a safe place and research shop personnel have approved the extended use.

Most power tools, electric drills, sanders, etc., have a specific place in the research shop and you are expected to put them back when you are finished with them. If you can't find the proper storage place for a tool, ask research shop personnel or the instructor in charge of the laboratory to help you.

Gasoline shall not be used for cleaning. Cleaning solvents are available for inside use. Don't leave open pans of cleaning fluids in the research shop or any laboratory. Used cleaning fluids must be disposed of in barrels near the southwest corner of the laboratory, Room 130. **DO NOT PUT ANY CLEANING FLUID OR OTHER SOLVENTS, ACIDS, PAINT OR PAINT THINNER INTO DRAINS.** For proper disposal of laboratory chemicals, check with research shop personnel.

Junk and rubbish are to be picked up and deposited in barrels or rubbish containers outside. Ask research shop personnel for proper disposal locations for biological materials such as hay or similar materials.

Workbenches and all machines used must be left clean. Air should not be used to clean equipment parts. Brushes or vacuum cleaners should be used. Useable parts left over at project completion or reclaimed from a salvage operation should be returned to stock.

Tools in boxes or bench drawers in the research shop (Room 140A) are either personal property or permanently assigned to a staff member or employee. You should obtain permission before using such tools. If you need tools or bench space assigned to you, make such arrangements through your major professor.

LATHES, MILLING MACHINE, BORING MILL, SHAPER, SURFACE GRINDER, AND LINCOLN T.I.G. WELDER ARE TO BE OPERATED ONLY BY SPECIAL PERMISSION OF STAFF OR RESEARCH SHOP PERSONNEL.

If you damage a tool, report that fact to your supervisor. Don't store non-functioning equipment. In order to have tools available for use, any damaged tool needs to be turned in promptly so that it can be repaired or replaced. Eye protection is required by University regulations when you are working in the research shop (Rooms 140 and 140A) or at any other location when you are using power or hand tools such as a cold chisel or punch which may produce chips or flying particles. You must wear safety glasses whenever you are working in the research shop.

IF YOU ARE INVOLVED IN A SHOP OR VEHICLE ACCIDENT, REPORT IT IMMEDIATELY TO THE RESEARCH SHOP SUPERVISOR OR THE DEPARTMENT ADMINISTRATOR!

6.1 Laboratory Instrumentation

Much of our instrumentation and equipment is purchased for specific classroom or research projects and is, therefore, the responsibility and under the supervision of the instructor or project leader. However, in the interests of our total departmental program, it is often desirable for equipment to be loaned and shared between projects, between research and instruction, etc.

Every effort should be made to return the instrumentation without damage to its designated location in the laboratory. Report malfunctions of any instrument immediately to the instructor in charge of the laboratory or to research shop personnel so it can be checked or repaired before it is to be used again.

6.2 Laboratory and Research Shop Supplies

Some expendable supplies are kept in the research shop. These may be used after checking with research shop personnel. These may be used as needed for research. Large quantities of these items will not usually be available. If you need a large quantity of some item, check with your major professor to determine how it should be obtained. If you find the stock of some item depleted, report this to research shop personnel so it can be restocked.

Your major professor must approve supplies and equipment needed for your research. For procedures for obtaining such items, see your major professor. Plan ahead and allow time for the materials to be received. Processing times may take from one to four weeks. If emergency items are needed, consult with your major professor.

**Biological Systems Engineering Department
Graduate Student Certification**

The student should complete this form, including appropriate signatures at least 3 weeks prior to requesting warrant.

Purpose: Please check appropriate box

M.S. Thesis Examination	Ph.D. Preliminary Examination *
M.S. Independent Study Examination	Ph.D. Thesis Examination

- If any requirements are missing please explain in the comments section.

Prerequisite at time of Admission:

1. _____
2. _____
3. _____

Proposed Date of Exam: _____

Total graduate course credits _____ **UW GPA** _____

Must complete both BSE 900 and BSE 901* prior to final exam:

List of courses (500-level and above) and grades (Please also attach UW transcript).

Course #	Course Title	Credits	Grade

*Petition GRIC committee for wavier of 901 in case of graduation earlier than 901 offered.

Student's Name: _____ **Signature:** _____

Major Professor: _____ **Signature:** _____

Comments:

Please write any special message to the Graduate Instruction and Research Committee.

Proposed Minor: _____

(Option A Option B Distributed) Proposed date of completion

Proposed Thesis Title:

MS candidates, do you intend to pursue a Ph.D. in the department? yes / no

MS and Ph.D. Candidates, list your thesis committee members

Name	Department	Rank

Approved: YES

NO

Signature: _____ Chair,
Graduate Instruction and Research Committee

Graduate School Degree and Dissertator Deadlines 2009-2010

Fall 2010

September 1 Dissertator Eligibility
November 27* Request for all Masters and Ph.D. Degree Warrants
December 18 Degree Deadline
December 21 - January 15 Spring Degree Window**

** For master's students only: If you want your name to be printed in the commencement program, your department must submit your warrant request before **November 6**.*

Spring 2010

January 15 Dissertator Eligibility
April 23* Request for all Masters and Ph.D. Degree Warrants
May 14 Degree Deadline
May 17- June 11 Summer Degree Window**

** For master's students only: if you want your name to be printed in the commencement program, your department, must submit your warrant request before **April 1**.*

Summer 2010

June 11 Dissertator Eligibility
July 30 Request for all Masters and Ph.D. Degree Warrants
August 20 Degree Deadline
August 23-
September 1 Fall Degree Window**

****Window Period:** This is the time between the end of one degree period and the beginning of the next. If you were registered in the previous semester and all degree requirements were met by the end of the window period, your degree will be granted at the end of the next semester and you will not have to register or pay fees for the next semester.

Helpful Links:

For Master's:

1. Expecting Your Master's Degree? Procedures to Help:
<http://info.gradsch.wisc.edu/education/completedegree/mdegree.html>
2. A Guide to Preparing Your Master's Thesis:
<http://info.gradsch.wisc.edu/education/completedegree/mguide.html>

For Ph.D.:

1. The 3-D's: Deadlines, Defending, Depositing Your Doctoral Dissertation:
<http://info.gradsch.wisc.edu/education/completedegree/ddd.html>
2. A Guide to Preparing Your Doctoral Dissertation:
<http://info.gradsch.wisc.edu/education/completedegree/pguide.html>

Master's Degree Warrant Request From

Degree Deadlines:

Fall: **December 18, 2009**

Spring: **May 14, 2010**

Summer: **August 20, 2010**

Fall 2009

Spring 2010

Summer 2010

(Circle session you expect student to complete the degree requirement and graduate.)

Warrant must be requested a minimum of 3 weeks before the defense/exam or the degree deadlines

Date of request:

Date of defense/exam:

Student's Name:

10-Digit ID Number:

(Last, First, Middle)

Student's Program for degree expected:

Degree expected: _____
(Example: MA, MS, MPA, MIPA, MBA, ME, MM)

Is this student in or will they continue for a PhD in the same program? Yes No Undecided

Is this student required to deposit a thesis in Memorial Library? Yes No

Committee Member Names (if applicable):

(Last, First, Middle & Rank)

1. _____
2. _____
3. _____
4. _____
5. _____

Name/Address/Phone Number/Email of Coordinator making this request:

Please send the request form to **217 Bascom Hall**. For a warrant to be issued, the following requirements must have been met when the warrant is requested. If these requirements have not been met, the request will be returned with no action taken.

1. Graduate registration for a minimum of 2 graduate level credits (300 level or above for a grade, no audits, or pass/fail) or degree completion fee must be approved and paid.
2. Students have met the credit requirement for the appropriate degree & has a graduate GPA of at least 3.00.
3. All incomplete and unreported grades, or progress grades in anything other than research/thesis (usually 690, 790, 990) must have been cleared. Independent study (usually 699, 799, or 999) must be given a grade (not progress) each semester.
4. Students receiving a second (or third) master's degree from UW-Madison, & students receiving two degrees during the same semester, must submit official (signed by appropriate advisers or departmental chairs) lists of courses used for *each degree*. See double degree in [Academic Guidelines](#).

The University of Wisconsin-Madison
The Graduate School

Request for Preliminary Warrant

Submit request at least three weeks before exam to the PhD Office, 229 Bascom Hall

Grades and current registration may be checked on GASP or SREC. You will want to check GASP to know when the warrant has been issued, check credit requirement status, dissertator eligibility, or to identify other problems.

Remember that a warrant will not be issued if there are incomplete grades or progress grades in anything other than research/thesis (usually 990). Independent study (usually 699 or 999) must be given a grade (not progress) each semester.

Student's Name:

10-Digit ID Number:

(Last, First, Middle)

Student's Major:

Proposed Date of Exam:

Proposed Minor:

Proposed Date of Completion:
(Must be 6 digit)

(Option A—Name It. For example: Option A Music) (Option B Distributed)

PhD Coordinator Making Request:

Address/Phone Number/Email of PhD Coordinator:

The University of Wisconsin-Madison
The Graduate School
PHD FINAL ORAL COMMITTEE APPROVAL FORM

Please submit at least three weeks prior to exam. Type or print clearly.

Date: _____ This is an: (Circle one) Original Form Revised Form

Student's Full Name: (Last, First, Middle) _____

Student's 10-digit ID Number: _____

Student's Major: _____ & Minor _____

The PhD final oral exam committee must consist of at least 5 current graduate faculty members from the University of Wisconsin-Madison who are of either assistant, associate, or full professional rank; with at least one of the five from outside the major department.

This form, signed by the adviser/major professor and department chairperson, should be returned to the Graduate School (217 Bascom) **3 weeks before the final oral exam**. The warrant and other degree completion materials will then be sent to the department. If any changes are made in the membership of the committee, a revised final oral exam committee form must be submitted **before the exam**. Changes in dissertation title or date **do not** require a revised form.

The following faculty members have agreed to serve on the Final PhD Oral Exam Committee for the above named student:

	NAME: (Last, First, Middle)	RANK	DEPARTMENT/MAJOR REPRESENTED (Full Name)
Adviser	1. _____	_____	_____
	2. _____	_____	_____
	3. _____	_____	_____
	4. _____	_____	_____
	5. _____	_____	_____
(Optional)	6. _____	_____	_____

Proposed Dissertation Title: _____

_____ **Proposed** Date of Final Oral Exam

Signature: Adviser/Major Professor

Signature: Department Chairperson

Name/Address/Phone Number/Email of Coordinator making this request:

Return both copies to the Graduate School. The second copy will be returned to the major department upon approval.
For Graduate School Use Only

Date Approved: _____

By: _____

Completion Fee: \$ _____

Sample Title Page

THE DEVELOPMENT OF MADISON
AS AN INTERESTING PLACE

By

Iam A. Student

A dissertation submitted in partial fulfillment of the requirements for the degree of

Doctor of Philosophy

(Chemistry)

At the

UNIVERSITY OF WISCONSIN-MADISON

2009

A dissertation entitled

Submitted to the Graduate School of the
University of Wisconsin-Madison
in partial fulfillment of the requirements for the
degree of Doctor of Philosophy

by

Date of Final Oral Examination:

Month and Year Degree to be awarded: **December** **May** **August**

Approval Signatures of Dissertation Committee

_____	_____
_____	_____
_____	_____

Signature, Dean of Graduate School

Graduate Committee Composition

In response to an increasing number of requests, and on the recommendation of the Graduate Faculty Executive Committee (GFEC), I am providing departments and programs with greater flexibility when constituting graduate student advisory committees at the master's and doctoral levels. This change will leave the responsibility for graduate student advisory committees in the hands of the graduate programs, while at the same time serving students' interests by allowing the most qualified committee members to read their theses and dissertations.

Effective immediately, decisions about the composition of graduate committees will be made at the department or program level, as long as Graduate School minimum requirements, as outlined below, are met. All members hold voting rights on the committee, thus programs may allow an individual who is not Graduate Faculty to serve as a full voting member of a committee. This could include an academic staff member, an outside expert, postdoctoral scholar, or any other qualified individual, as determined by the program Executive Committee or its equivalent. This individual may serve in any capacity on the committee, including co-chair. In most cases, we assume that current practice will continue.

New Policy:

1. The Executive Committee or its equivalent of a program/department is responsible for approving the composition of all graduate committees. (As in the past, the Chair must sign the "Ph.D. Final Oral Committee Approval Form," thus representing the approval of the program/department.)
2. Minimum Graduate School requirements for graduate committees are as follows:
 - a. The chair or co-chair of the committee must be Graduate Faculty from the student's major program.
 - b. Doctoral committees (PhD and DMA) must have at least five members, four of whom must be Graduate Faculty or former Graduate Faculty up to one year after resignation or retirement. At least one of the five members must be from outside of the student's major field (often from the minor field). MFA committees must have at least four members, three of whom must be Graduate Faculty or former Graduate Faculty up to one year after resignation or retirement.
 - c. Master's thesis committees must have at least three members, two of whom must be Graduate Faculty or former Graduate Faculty up to one year after resignation or retirement.
 - d. Non-thesis master's committees must have at least one Graduate Faculty member from the student's major program.
3. The required fifth member of a doctoral committee, fourth member of an MFA committee, or third member of a master's thesis committee, as well as any additional members, all retain voting rights. They may be from any of the following categories, as approved by the program Executive Committee or its equivalent: Graduate Faculty; Tenure-track faculty from a department without a graduate program; Academic Staff (including emeritus faculty); Visiting professors; Faculty from other institutions; Externally-funded researchers (USGS, USDA, etc.); Postdoctoral scholars; Other individuals deemed qualified by the Executive Committee or its equivalent.

History:

FP&P 3.05A stipulates that "the faculty of the Graduate School includes all university faculty defined in 1.02 holding professional rank (professor, associate professor, assistant professor or instructor) in any department with graduate program authority, including those with zero-time appointments in such departments." FP&P 3.05G determines that the Dean of the Graduate School has final authority to grant graduate faculty-like privileges to individuals other than those expressly listed as able to receive temporary graduate faculty status (academic staff in specific), upon the recommendation of the department's executive committee.

Graduate School guidelines in the past have limited the practice of allowing non-graduate faculty to serve on graduate committees, and the Dean of the Graduate School has not been inclined to make exceptions. Instead, programs were encouraged to expand committees beyond the minimum size in order to accommodate other individuals.

After requests from several parts of campus and lengthy discussion over the course of three separate meetings, the members of the GFEC voted unanimously (with one abstention) on April 11, 2008 to adopt the new policy outlined above.

For questions please feel free to contact Judith Kornblatt, jkornblatt@bascom.wisc.edu , 262-1044.

FIRST SEMESTER ENROLLMENT FOR INTERNATIONAL STUDENTS

As your new students start to arrive for the summer term, International Student Services just wanted to remind you that, in compliance with federal regulations, all new international students must be enrolled FULL-TIME during their first semester of study. Therefore, if students are being admitted to begin their academic program during the summer 2008 term, they must be enrolled for a full credit load. Full-time enrollment in summer for immigration purposes is considered as follows:

6 credits for undergrads

4 credits for grads

33% TA/PA/RA* = 3 credits

50% TA/PA/RA* = 2 credits

3 credits for dissertators

* RA's are included in the lower credit allowances for summer, but ONLY for summer. RA's must be enrolled for 8 credits during the Fall and Spring semesters.

In addition, for the summer only, ISS is having students check in with us individually, rather than holding group orientation sessions. Therefore, you may direct new students to our office anytime during walk-in advising hours, Monday through Friday from 11am to 3pm. They can each stop in individually after they arrive at a time during walk-ins that best fits their schedule.

For more information, they can visit our website at <http://www.iss.wisc.edu/summercheckin.asp>.

Summer Enrollment

Students must be enrolled if they are using university facilities (including faculty and staff time).
Course Work and Program

Non-Dissertators

- A full-time program for non-dissertators is four to eight graduate-level credits (300 and above) for the summer (four to nine graduate-level credits for master's students in business and social work). Audit and pass/fail courses do not satisfy this enrollment requirement. You may not enroll for more credits than there are weeks in a session.
- Non-dissertators who hold summer appointments as research assistants, trainees, and fellows must enroll in the eight-week general session for at least two graduate-level credits (300 and above). Audit and pass/fail courses do not satisfy this enrollment requirement. This constitutes sufficient enrollment for loan deferral.
- Non-dissertators expecting an August Ph.D. degree must enroll in the eight-week general session for at least two graduate-level credits (300 and above). Audit and pass/fail courses do not satisfy this enrollment requirement
- Non-dissertators who have an obligation to be enrolled (because of loans or other funding sources for example) should enroll for the appropriate credit load.
- Master's candidates, who expect to graduate in August but cannot complete degree requirements during the summer window period, must enroll for at least two graduate-level credits (300 and above) in any session (short session or eight-week general). Audit and pass/fail courses do not satisfy this enrollment requirement.

Dissertators

- Dissertators who hold summer appointments as research assistants or trainees must enroll in the eight-week general session for three graduate-level credits (300 and above). Audit and pass/fail courses do not satisfy this enrollment requirement.
- Dissertators who expect to graduate in August must enroll in the eight-week general session for three graduate-level credits (300 and above). Audit and pass/fail courses do not satisfy this enrollment.

Graduate students who hold summer appointments as TAs or Pas need not be enrolled in the summer if they do not fall into one of the categories above. In these situations the decision whether a graduate student should enroll is left to the advisor and department chair, following college/school policies.

Option A Minor Approval Form for Biological Systems Engineering

Name: _____

ID Number: _____

Option A Department: _____

The purpose of the minor is to add breadth to a Ph.D. major. Monitoring the course content and credit requirements for Ph.D. minors is the responsibility of the minor department/program. Major departments/programs are responsible for indicating the expected minor (either Option A or B, see below) at the time of the preliminary warrant request.

Option A (external): Requires a minimum of 10 credits in a single department/program. Selection of this option requires the approval of the minor department/program.

Department & Course Number	Instructor	Course Title	Grade	Cr. #

Grades Verified By: _____
(Signature) (Date)

I approve the above graduate courses for use in satisfying the Ph.D. Option A Minor Agreement.

Advisor Printed Name

Advisor Signature _____ **Date** _____

Minor Department Approval _____ **Date** _____

**Please return this completed form to the Student Services Office in 115 Agricultural Engineering Building.*