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I. Program Overview

Introduction
Graduate students in Biological Systems Engineering (BSE) Department strive to better understand the current theories, principles, and issues in wide-ranging biologically related fields of engineering. 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 and to synthesize, analyze, and integrate ideas for decision-making and problem solving.

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

The departmental admission requirements are often more rigorous than the minimum set by the Graduate School. However, the department may be flexible on some requirements based on an individual student’s background and the faculty needs. This handbook provides an overview of the requirements, policies and resources for graduate study in the BSE Department at the University of Wisconsin-Madison.

Photo by Jeff Miller/University of Wisconsin-Madison
Graduate Faculty

Robert P. Anex  Ph.D. Professor, also Nelson Institute for Environmental Studies - Energy Analysis and Policy Program, Environment & Resources Program
Christopher Choi  Ph.D. Professor
Matthew Digman  Ph.D. Assistant Professor
Sundaram Gunasekaran  Ph.D. Professor, also Director of CALS Global, Food Science, Materials Science & Engineering
Krishnapuram Karthikeyan  Ph.D. Professor, also Civil & Environmental Engineering, Environmental Studies
Rebecca Larson  Ph.D. Associate Professor and Extension Specialist, also Nelson Institute for Environmental Studies
Brian Luck  Ph.D. Assistant Professor and Extension Specialist
Xuejun Pan  Ph.D. Professor
Douglas J. Reinemann  Ph.D. Professor and Extension Specialist and CALS Associate Dean for Outreach and Extension, also Dairy Science, Institute for Environmental Studies – Energy Analysis and Policy, Agroecology, Center for Integrated Agricultural Systems, American Indian Studies, Wisconsin Energy Institute
Troy M. Runge  Department Chair, Ph.D. Associate Professor, also Nelson Institute for Environmental Studies
Kevin J. Shinners  Ph.D. Professor, also Mechanical Engineering
John Shutske  Ph.D. Professor and Extension Specialist, also affiliate Professor in Department of Family Medicine, School of Medicine & Public Health
Paul Stoy  Ph.D. Assistant Professor
Anita M. Thompson  Ph.D. Professor, also Chair of Nelson Institute’s Water Management Program
Zhou Zhang  Ph.D. Assistant Professor

Adjunct Faculty
Mark R. Etzel  Ph.D. Professor, Food Science
Richard W. Hartel  Ph.D. Professor, Food Science
John Ralph  Ph.D. Professor, Biochemistry

Emeritus Faculty
David R. Bohnhoff  Ph.D. Professor
Brian Holmes  Ph.D. Professor
David W. Kammel  Ph.D. Professor and Extension Specialist
Richard J. Straub  Ph.D. Professor, also CALS Senior Associate Dean, Mechanical Engineering

Department Staff
Sue Reinen  Department Administrator
Julie Garvin  Graduate Coordinator
Betsy Wood  Student Services Coordinator and Undergraduate Advisor
Terry Meyer  Senior Financial Specialist
Pamela L. Spahn  Payroll & Benefits Specialist
Kody Habeck  Associate Instrumentation Innovation Instructor / Shop Supervisor
BSE Graduate Programs
BSE Department offers graduate programs leading to Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) degrees.

Master of Science: Two options are available for the M.S. degree in BSE: a thesis option and a non-thesis option (i.e., an independent study). If your objective is to pursue a Ph.D. degree or a 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. Admission to M.S. degree program typically requires a bachelor’s degree (B.S.) in an engineering or related discipline. See page 4 for more information.

Doctor of Philosophy: Students in the Ph.D. degree program prepare for an independent research careers in the public and private sectors. Admission to Ph.D. typically requires an M.S. degree in engineering or closely related field of science. Students with a B.S. degree can also be admitted to pursue a Ph.D. degree without earning an M.S. degree. See page 6 for more information.

II. Master’s Degree Program
Program Basics
Graduates of the M.S. program help fill the need for highly educated engineers in industry, consulting firms, government agencies, and educational institutions.

BSE students pursuing an M.S. degree are expected to achieve the following learning goals by the end of their degree work.
- Articulate, critique, or elaborate the theories, research methods, and approaches to inquiry or schools of practice in the field of study.
- Identify sources and assembles evidence pertaining to questions or challenges in the field of study.
- Demonstrate understanding of the primary field of study in a historical, social, or global context.
- Select and / or utilize the most appropriate methodologies and practices.
- Evaluate or synthesize information pertaining to questions or challenges in the field of study.
- Communicate clearly in ways appropriate to the field of study.
- Recognize and apply principles of ethical and professional conduct.
Admission Requirements

The BSE Department stipulates that all applicants should have a B.S. degree from an Accreditation Board for Engineering and Technology (ABET)-accredited engineering program. Applicants who do not have an ABET-accredited engineering B.S. degree 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.
  - Agro-based chemistry and materials: analytical, organic and physical chemistry and basic materials science.
- Upon the request by graduate advisor, up to six prerequisite course credits (from the above list) can be waived for students admitted without an ABET-accredited B.S. degree in engineering. The graduate advisor will decide which courses (for six credits) are being waived. This request should
be made at the time of admission and approved by the BSE Graduate Instruction and Research Committee (GIRC).

International students are required to submit English proficiency test scores in addition to meeting the academic requirements. For more information about English proficiency requirements, please visit https://grad.wisc.edu/apply/.

**Master’s Degree Requirements**
All students must meet BSE graduate program requirements in addition to those of the Graduate School, which include a minimum overall GPA of 3.0 and a minimum of 15 credits of graduate-level coursework.

<table>
<thead>
<tr>
<th>Minimum Credit Requirements</th>
<th>Thesis Option</th>
<th>Non-Thesis Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-F letter-graded UW-Madison courses(^1)</td>
<td>18</td>
<td>24</td>
</tr>
<tr>
<td>Graduate courses(^2)</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Thesis research</td>
<td>6</td>
<td>--</td>
</tr>
<tr>
<td>Independent study</td>
<td>--</td>
<td>3</td>
</tr>
<tr>
<td>Graduate seminars(^3)</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>BSE Courses(^4)</td>
<td>8</td>
<td>8</td>
</tr>
</tbody>
</table>

**Total** | 30 | 30 |

\(^1\) Not including course credits taken to satisfy admission requirements.
\(^2\) At least 6 credits must be from at the 500-level and above science/engineering classes; can include up to 6 credits of 400-level and above science/engineering classes taken as UW-Madison undergraduates.
\(^3\) BSE 900 (Fall semester only, typically taken during the first Fall semester of the graduate study) and BSE 901 (Spring semester only, typical during the last Spring semester before graduation).
\(^4\) Includes research/independent study and seminar credits

For other general requirements of completing your M.S. degree, visit https://grad.wisc.edu/current-students/masters-guide/#what-you-need-to-do.

BSE graduate students are required to be enrolled during *all three semesters*; fall, spring, and summer. However, summer enrollment may be waived with advisor approval.

**III. Doctoral Degree Program**

**Program Basics**
The department offers students opportunities to undertake independent research-based advanced study in different specializations, which include but not limited to the following: environmental quality and natural resource engineering, waste management, food and bioprocess engineering, machinery systems, bioresources and biorefining, and agricultural safety and health.

BSE students pursuing a Ph.D. degree are expected to achieve the following learning goals by the end of their degree work.
1. Articulates research problems, potentials, and limits with respect to theory, knowledge, or practice within the field of study.
2. Formulates ideas, concepts, designs, and/or techniques beyond the current boundaries of knowledge within the field of study.
3. Creates research, scholarship, or performance that makes a substantive contribution.
4. Demonstrates breadth with their learning experiences.
5. Advances contributions to the field of study to society.
6. Communicates complex ideas in a clear and understandable manner.
7. Recognize and apply principles of ethical and professional conduct.

**Doctoral Degree Program Requirements**

<table>
<thead>
<tr>
<th>Minimum Credit Requirements</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum graduate courses²</td>
<td>42</td>
</tr>
<tr>
<td>Thesis research</td>
<td>12</td>
</tr>
<tr>
<td>Graduate seminars³</td>
<td>2</td>
</tr>
<tr>
<td>BSE courses</td>
<td>8</td>
</tr>
<tr>
<td>Teaching preparatory/professional communications course⁴</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total** 72¹

¹ At least 32 credits of graduate credits must be completed in residence.
² At least 36 of the course credits must be taken in physical sciences. At least 9 credits must be from the 600- to 800-level classes from an engineering department and/or comparable technical area. A maximum of 18 course credits and 6 research credits can be used from an MS degree obtained elsewhere. All course credits should be letter-graded, unless course is only offered for credit/no-credit, which must get prior approval from advisor. Only 1 credit/no-credit of the 9 credits can be used to fulfill 600- to 800-level classes.
³ BSE 900 (Fall semester only, typically taken during the first Fall semester of the graduate study) and BSE 901 (Spring semester only, typical during the last Spring semester before graduation). BSE 900 is waived for students who have taken it for their M.S. degree.
⁴ Some possible courses are EPD 654 or BSE 799. The teaching course credits cannot 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 do not count towards the required 24 (42) course credits.
**Doctoral Minor**

A Ph.D. student may 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 student 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 9 credits in a minor program (single disciplinary or multi-disciplinary). Fulfillment of this option requires the approval of the minor program.

**Option B (distributed):** Requires a minimum of 9 credits in one or more programs forming a coherent topic and can include course work in the program. Fulfillment of this option requires the approval of the major 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.

**Examinations**

- **Qualifying examination:** It is an optional requirement for BSE students, required at the discretion of the student’s graduate advisor. Please discuss with your advisor to determine if it is required of you.

- **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 (Prelims). 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.

The Prelims 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 every semester).

The Prelims may not be taken until the student has:
1. Passes the Qualifying Examination, when required
2. Cleared all incomplete grades
3. Completed a minimum of two-thirds of the course work, but with advisor approval
4. Prepared and submitted a detailed research plan to the Guidance and Examination Committee at least four weeks before the examination.

**Note:** 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 four weeks prior to the examination.

- **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 Schools’ Deadlines. The Graduate School’s policies and procedures for the Final Oral Examination may be found in the *Academic Policies and Procedures* section entitled Final Oral Examination. Minimum Graduate School requirements for graduate committees are as follows:
  1. The chair or co-chair of the committee must be Graduate Faculty from the student's program. The UW-Madison Faculty Policies and Procedures 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.” Committee members who have retired or resigned from the University automatically retain Graduate Faculty status for one year; after one year they are permitted to serve as co-chair or another non-Graduate Faculty committee member.
  2. Doctoral committees/final oral examination committee (Ph.D. and DMA) must have at least 5 members representing more than one graduate program, 4 of whom must be UW–Madison graduate faculty or former UW–Madison graduate faculty up to one year after resignation or retirement. At least one of the 5 members must be from outside of the student’s major program or major field (often from the minor field).
  3. MFA final committees must have at least 4 members, 3 of whom must be graduate faculty or former graduate faculty up to one year after resignation or retirement.
  4. Master’s thesis committees must have at least 3 members, 2 of whom must be graduate faculty or former graduate faculty up to one year after resignation or retirement.
  5. Non-thesis master’s committees must have at least one graduate faculty member from the student’s program.
  6. The required 5th member of a doctoral committee/final oral examination committee, 4th member of an MFA committee, or 3rd 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, faculty from a department without a graduate program, academic staff (including emeritus faculty), visiting faculty, faculty from other institutions, scientists, research associates, and other individuals deemed qualified by the executive committee (or its equivalent).
  7. To receive a Ph.D. or Master’s degree, students must receive no more than one dissenting vote from their committee.
Guidance and Examination Committee
Committees advise and evaluate satisfactory progress, administer preliminary and final oral examinations, evaluate a thesis or dissertation, and/or sign a degree warrant. A student’s program arranges a committee with appropriate expertise to afford the breadth and depth needed in degree examinations. The responsibilities of individual committee members are determined by the program. The executive committee (or its equivalent) of a program/department is responsible for approving the composition of all graduate committees. The final warrant request which includes committee membership must be submitted to the Graduate School at least three weeks before the examination date. Students should consult their advisor and their program’s student handbook for the specific function of degree committees in their program. For more information about guidance and examination committees, visit the graduate school’s website at https://grad.wisc.edu/documents/committees/.

IV. Timelines and Deadline Requirements
The Warrant Process
A warrant is a document issued to your program by the Graduate School at your program’s request after you have met all degree requirements. Warrants are valid for one semester, and are signed by the program chair, advisor, or your committee. By signing the warrant, programs indicate that all program degree requirements have been met. It is crucial that all students allocate enough time for themselves to complete the warrant process and graduate on time. A warrant is required for MS and PhD thesis defense as well as for PhD preliminary examination.
This is the BSE department process for obtaining a warrant and a general timeline of the process:

1. Send a draft of thesis to your advisor at least six weeks prior to warrant request
2. After the draft is reviewed by your advisor, fill out a warrant request form (Appendix A) available from the BSE Graduate Coordinator
3. Have your advisor sign it
4. Hand in the warrant request document to BSE graduate coordinator at least four weeks before your intended exam date
5. After the BSE Graduate Committee Chair approves the warrant request, it will be submitted to the Graduate School at least three weeks before the exam date
6. BSE receives the warrant in time for the student to pick up for thesis committee signature
7. Return signed warrant to BSE Graduate Coordinator

The BSE Department follows Graduate Schools guidelines. Students are encouraged to consult the following links. Questions should be directed to their advisor and/or BSE Graduate Coordinator.

M.S. degree students: https://grad.wisc.edu/current-students/masters-guide/
Ph.D. degree students: https://grad.wisc.edu/current-students/doctoral-guide/
The Graduate School degree deadlines: https://grad.wisc.edu/deadlines/
V. Advising

Advisor / Advisee Roles

Advisor: The advisor serves a dual role: first, assists the student in acquiring the highest level of knowledge and competence in the field that is possible; and second, chairs the committee that will determine whether the student has performed acceptably at each of his/her degree milestones. Advisors may often play a role in tracking the student’s progress toward degree completion, assisting with course selection and academic planning, and helping students identify possible research mentors, committee members, and opportunities.

Advisee: The main roles of the advisee are to absorb their advisor’s information in order to complete their degree(s). Since the advisor's role can vary, students should discuss roles and expectations with their advisors or prospective advisors. Additionally, the department requires a written annual progress report for all graduate students. This reflection and discussion allow for graduate students to receive valuable feedback from their advisors.

Both the student and the advisor have a responsibility to make their expectations clear to each other.
Additional Advising Contacts
The BSE Graduate Coordinator serves as an excellent resource for graduate students on various matters of BSE Graduate Program and UW Graduate School policies. To set up an appointment with our Graduate Coordinator, use Starfish on MyUW or email BSEGradCoordinator@mailplus.wisc.edu. Drop-in appointments are also welcome. Students are should first refer to the BSE Graduate Program website (https://bse.wisc.edu/graduate-studies/), this Handbook, the UW Graduate School website (https://grad.wisc.edu/), and the Graduate School’s Academic Policies and Procedures (https://grad.wisc.edu/academic-policies/) for answers on various program-related questions.

Career Advising Resources
The University of Wisconsin-Madison offers a wide variety of career advising and professional development resources. For more information about these resources, please see pg. 17.

VI. Satisfactory Progress – Academic Expectations
As stated above, 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.

In addition to grading standards, students will be evaluated by their advisor using a graduate evaluation form. Discuss the standards and expectations in greater detail with your advisor. This form can be found in the appendix (Appendix E).

VII. Satisfactory Progress – Conduct Expectations
The Department of Biological Systems Engineering is a professional learning environment where all students can prosper in academics and advance their careers. ALL students are expected to proceed in a dignified manner in terms of academia, communication, and professionalism. Failure to act in this manner will result in disciplinary action and/or dismissal from the program.

VIII. Disciplinary Action and Dismissal
Misconduct in the Department of Biological Systems Engineering Department is treated very seriously. Any evidence of misconduct discovered during a graduate student’s tenure in the department will result in immediate disciplinary action and/or dismissal from the graduate program. For more information about disciplinary policy, please visit the graduate school’s website for a comprehensive list of policies and procedures (https://grad.wisc.edu/academic-policies/).

IX. Grievance Procedures & Reporting Misconduct and Crime
Grievance Procedures
If a student feels unfairly treated or aggrieved by faculty, staff, or another student, the University offers several avenues to resolve the grievance. Students’ concerns about unfair treatment are best handled directly with the person responsible for the objectionable action. If the student is uncomfortable making direct contact with the individual(s) involved, they should contact the advisor or the person in charge of the unit where the action occurred (program or department chair, section chair, lab manager,
Many departments and schools/colleges have established specific procedures for handling such situations; check their web pages and published handbooks for information. If such procedures exist at the local level, these should be investigated first. For more information see the Graduate School Academic Policies & Procedures for grievances & appeals: [https://grad.wisc.edu/academic-policies/#grievancesandappeals](https://grad.wisc.edu/academic-policies/#grievancesandappeals)

Procedures for proper accounting of student grievances:

1. The student is encouraged to speak first with the person toward whom the grievance is directed to see if a situation can be resolved at this level.
2. Should a satisfactory resolution not be achieved, the student should contact the program’s Grievance Advisor or Director of Graduate Study to discuss the grievance. The Grievance Advisor or Director of Graduate Study will facilitate problem resolution through informal channels and facilitate any complaints or issues of students. The first attempt is to help students informally address the grievance prior to any formal complaint. Students are also encouraged to talk with their faculty advisors regarding concerns or difficulties if necessary. University resources for sexual harassment, discrimination, disability accommodations, and other related concerns can be found on the UW Office of Equity and Diversity website: [https://oed.wisc.edu/](https://oed.wisc.edu/).
3. Other campus resources include
   a. The Graduate School - [https://grad.wisc.edu/](https://grad.wisc.edu/)
   b. McBurney Disability Resource Center - [https://mcburney.wisc.edu/](https://mcburney.wisc.edu/)
   c. Employee Assistance Office - [https://hr.wisc.edu/employee-assistance-office/](https://hr.wisc.edu/employee-assistance-office/)
   d. Ombuds Office - [https://ombuds.wisc.edu/](https://ombuds.wisc.edu/)
   e. University Health Services – [https://www.uhs.wisc.edu/](https://www.uhs.wisc.edu/)
   f. Office of Equity and Diversity - [https://oed.wisc.edu/](https://oed.wisc.edu/)
4. If the issue is not resolved to the student’s satisfaction the student can submit the grievance to the Grievance Advisor in writing, within 60 calendar days of the alleged unfair treatment.
5. On receipt of a written complaint, a faculty committee will be convened by the Grievance Advisor to manage the grievance. The program faculty committee will obtain a written response from the person toward whom the complaint is directed. This response will be shared with the person filing the grievance.
6. The faculty committee will determine a decision regarding the grievance. The Grievance Advisor will report on the action taken by the committee in writing to both the student and the party toward whom the complaint was directed within 15 working days from the date the complaint was received.
7. At this point, if either party (the student or the person toward whom the grievance is directed) is unsatisfied with the decision of the faculty committee, the party may file a written appeal. Either party has 10 working days to file a written appeal to the School/College.
8. Documentation of the grievance will be stored for at least 7 years. Significant grievances that set a precedent will be stored indefinitely.

The Graduate School has procedures for students wishing to appeal a grievance decision made at the school/college level. These policies are described in the Graduate School’s Academic Policies and Procedures: [https://grad.wisc.edu/academic-policies/#grievancesandappeals](https://grad.wisc.edu/academic-policies/#grievancesandappeals).
**Reporting Misconduct and Crime**
The campus has established policies governing student conduct, academic dishonesty, discrimination, and harassment/abuse as well as specific reporting requirements in certain cases. If you have a grievance regarding unfair treatment towards yourself, please reference the procedures and resources identified above. If you learn about, observe, or witness misconduct or other wrongdoing you may be required to report that misconduct or abuse. Depending on the situation, it may be appropriate to consult with your advisor, Graduate Program Coordinator, or other campus resources (such as the UW Office of Equity and Diversity, Graduate School, McBurney Disability Resource Center, Employee Assistance Office, Ombuds Office, and University Health Services).

**Research Misconduct Reporting**
The University of Wisconsin-Madison strives to foster the highest scholarly and ethical standards among its students, faculty, and staff. Graduate students and research associates are among the most vulnerable groups when reporting misconduct because their source of financial support and the progress in their careers may be at risk by raising questions of wrongdoing. They are also often the closest witnesses to wrongdoing when it occurs and therefore must be appropriately protected from the consequences of reporting wrongdoing and be informed of their rights. Please find full details at [https://research.wisc.edu/compliance-policy/research-ethics/](https://research.wisc.edu/compliance-policy/research-ethics/).

**Academic Misconduct Reporting**
Being part of a university community, you are expected to uphold the standards of the university. Academic misconduct negatively impacts the integrity of students and the entire graduate program. Please report any evidence of misconduct immediately.

**Sexual Assault Reporting**
UW-Madison prohibits sexual harassment, sexual assault, dating violence, domestic violence, and stalking. These offenses violate UW-Madison policies and are subject to disciplinary action. Sanctions can range from reprimand to expulsion from UW-Madison. In many cases, these offenses also violate Wisconsin criminal law and could lead to arrest and criminal prosecution.

Students who experience sexual harassment, sexual assault, domestic violence, dating violence, and/or stalking have many options and services available to them on and off campus, including mental health counseling, victim advocacy and access to the criminal and campus disciplinary systems. For a list a confidential support and reporting options, please visit [https://www.uhs.wisc.edu/prevention/violence-prevention/resources/](https://www.uhs.wisc.edu/prevention/violence-prevention/resources/).

Faculty, staff, teaching assistants, and others who work directly with students at UW-Madison are required by law to report first-hand knowledge or disclosures of sexual assault to university officials for statistical purposes. In addition, disclosures made to certain university employees, such as academic advisors or university administrators, may be forwarded to the campus Title IX coordinator for a response. For more information, please visit [https://doso.students.wisc.edu/sexual-assault-dating-and-domestic-violence/](https://doso.students.wisc.edu/sexual-assault-dating-and-domestic-violence/).
Reporting and Response to Incidents of Hate / Bias
The University of Wisconsin-Madison values a diverse community where all members can participate fully in the Wisconsin Experience. Incidents of Bias/Hate affecting a person or group create a hostile climate and negatively impact the quality of the Wisconsin Experience for community members. UW-Madison takes such incidents seriously and will investigate and respond to reported or observed incidents of bias/hate. Please find full details at https://doso.students.wisc.edu/bias-or-hate-reporting/.

Specific Statement Example – Extensions Requests
Students who have not completed the degree on schedule may request extensions. Requests for a one-semester/year extension can be made to the Exceptions Committee. The Exceptions Committee is authorized to approve these requests upon written justification from the student and their advisor. The student must describe the reasons for the request and provide a proposed timetable for completing all program requirements. The major professor must sign the request form and write comments endorsing the request. The request should be made as soon as the need for an extension becomes apparent. The Exceptions Committee may request additional documentation as needed. Appeals or requests for additional extensions must be approved by the full program faculty.

X. Funding and Financial Information
Research and/or Teaching Assistantships:
Research Assistantships
Appointment as a Research Assistant (RA) is the most common type of appointment in BSE. RAs are generally appointed on an annual basis for a 12-month period with compensation established on a university-wide basis each year. Research Assistantships range anywhere from 33.33% to 50%. The renewal of assistantship is contingent upon satisfactory progress made both in coursework and research responsibilities, as determined by the student’s graduate advisor. RAs are required to carry a full graduate load of at least eight credits in Fall and Spring semesters and two credits in the Summer.

Teaching/Project Assistantships
When available, BSE may offer teaching assistantships or project assistantships. The teaching assistants (TA) or project assistants (PA) assist in classroom instruction under the direction of a faculty member with duties that include preparing of instructional materials, directing labs, grading lab exercises and exams, etc.
Funding for Conference / Research Travel
The Graduate School provides a limited amount of funding for dissertators whose research has been accepted for presentation at a conference. For more information about this funding, visit the Student Research Grants Competition website (https://grad.wisc.edu/funding/grants-competition/).
In addition, the Graduate School runs the Travel Research Grants competition which provides funds to support travel related to your dissertation/thesis research. Students must be dissertators. For more information about this funding, visit the Student Research Grants Competition website (https://grad.wisc.edu/funding/grants-competition/).

XI. Professional Development and Career Planning
There is a plethora of on-campus resources for graduate students to assist with professional development outside of the department. We encourage all our students to take advantage of these options, as they complement the development of students quite well. DiscoverPD is an online program that assesses graduate students’ strengths and weaknesses and offers useful feedback for students. Along with DiscoverPD, you can find resources like The Versatile Ph.D. (for doctoral students), National Center for Faculty Development & Diversity (NCFDD) and more.
For more information, visit the graduate school’s website for professional development: https://grad.wisc.edu/professional-development/
Additionally, be sure to check out these other options for supplemental development:
- UW Writing Center: http://www.writing.wisc.edu/
- Grants Information Collection: http://grants.library.wisc.edu/
- Student Technology Training (STS): http://sts.doit.wisc.edu
- Delta Program: http://www.delta.wisc.edu
- UW Center for the Humanities: http://humanities.wisc.edu

XII. Opportunities for Student Involvement
Student organizations provide plenty of opportunities for graduate students to enhance their academic experience while gaining professional development. The Department of Biological Systems Engineering hosts a chapter of the American Society for Agricultural and Biological Engineers, better known as ASABE. More information can be found here: https://win.wisc.edu/organization/asabe. Additionally, follow them on Facebook at https://www.facebook.com/asabestudentchapterofuwmadison/
For more information about student organizations on campus, visit the Wisconsin Involvement Network at https://win.wisc.edu/. Graduate students pursuing Food and Bioprocess Engineering research may also find it useful to connect with food industry and the academia through the Institute of Food Technologists (IFT). Follow Wisconsin Section IFT activities here: http://wisconsinift.org/

XIII. Student Health and Wellness
UW-Madison has a holistic resource for everything wellness related called “UWell”. The site includes information and opportunities for wellness for your work/school, financial, environmental, physical, emotional, spiritual, and community. More information can be found at https://uwell.wisc.edu/.
Students who pay segregated fees are eligible for University Health Services (https://www.uhs.wisc.edu). There is no charge to students for many basic services including counseling sessions, because services are paid through tuition and fees. Personal health and wellness services are also available in addition to medical services.

University Health Services (UHS) is the primary mental health provider for students on campus. UHS Counseling and Consultation Services offers a wide range of services to the diverse student population of UW-Madison. UHS offers immediate crisis counseling, same day appointments and ongoing treatment. Go to https://www.uhs.wisc.edu/mental-health or call 608-265-5600. UHS service costs are covered for students through tuition and fees.

There are many mental health resources throughout the Madison community, but UHS Counseling and Consultation Services is the best resource for referrals to off-campus providers. Call 608-265-5600 for assistance in finding an off-campus provider.

Photo by Bryce Richter/University of Wisconsin-Madison
### Warrant Request Form – Master’s Degree in Biological Systems Engineering

<table>
<thead>
<tr>
<th>Student Name:</th>
<th>Campus ID#:</th>
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</thead>
<tbody>
<tr>
<td>Defense Date:</td>
<td>Circle One: Thesis / Non-Thesis</td>
</tr>
<tr>
<td>Thesis/Independent Study title:</td>
<td></td>
</tr>
</tbody>
</table>

Will you be continuing for a PHD in this department? YES_______ NO_______ (check one)
If you earned a B.S. degree in engineering from UW-Madison, you can list courses up to 6 credits you want to count. Please also attach a student copy of your UW Transcript:

<table>
<thead>
<tr>
<th>Term</th>
<th>Course #</th>
<th>Course Title</th>
<th>Grade</th>
<th>Credits</th>
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</table>

Please list your thesis committee members (Full name, rank, department or affiliation):
1. Advisor: ________________________________________________________________
2. Other faculty: _________________________________________________________
3. Other: __________________________________________________________________
4. (optional) __________________________________________________________________

Before submitting this form to the Graduate Coordinator, please have your advisor initial signifying that you have given him/her draft of your thesis: ____________________ Date ______________

Grad Committee Approval: __________________________________________ Date ______________

Warrant Requested by Grad Coordinator on Date: ________________________________
Appendix B – Warrant Request Form (Ph.D.)

Warrant Request Form – Doctoral Degree in Biological Systems Engineering

<table>
<thead>
<tr>
<th>Student Name:</th>
<th>Campus ID#:</th>
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</thead>
<tbody>
<tr>
<td>Exam/Defense Date:</td>
<td>Circle One: Prelim Exam / Final Defense</td>
</tr>
<tr>
<td>Proposed thesis title:</td>
<td></td>
</tr>
</tbody>
</table>

[ ] For Prelim only: Ph.D. Minor: ______________________ Date Completed ______________________
(Distributed, or if Specific, name the department. Date completed is last day of the term you took the final class.)

[ ] If you intend to count credits from another Master’s degree, please name the School: ___________

*Also list courses below.

[ ] If you want to count up to 6 credits from your UW-Madison undergraduate engineering degree, list courses.

<table>
<thead>
<tr>
<th>Term</th>
<th>Course #</th>
<th>Course Title</th>
<th>Grade</th>
<th>Credits</th>
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</table>

[ ] Please also attach student copy of your UW Transcript.

Please list your thesis committee members (Full name, rank, department or affiliation):
1. Advisor: ________________________________________________________________

2. Other faculty: _________________________________________________________

3. Other faculty: _________________________________________________________

4. Other: ________________________________________________________________

5. (optional) ____________________________________________________________

Before submitting this form to the Graduate Coordinator, please have your advisor initial signifying that you have given him/her draft of your thesis: __________________________ Date __________________

Advisor initial

Grad Committee Approval: ___________________________ Date __________________

Warrant Requested by Grad Coordinator on Date: ____________________________
Appendix C – Post-Thesis Exam Assessment Form (M.S.)

Department of Biological Systems Engineering

MS Degree Graduating Student Assessment Questionnaire

To be filled in by the student’s thesis/independent study committee

Please indicate the level of student’s competency in his/her field of study with regards to following learning goals by checking boxes 1 through 5, with 5 being the best.

<table>
<thead>
<tr>
<th>Learning Goal</th>
<th>Competency*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Articulates, critiques, or elaborate the theories, research methods, and approaches to inquiry or schools of practice in the field of study.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>2. Identifies sources and assembles evidence pertaining to questions or challenges</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>3. Demonstrates understanding of the primary field of study in a historical, social, or global context</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>4. Selects and/or utilizes the most appropriate methodologies and practices</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>5. Evaluates or synthesizes information pertaining to questions or challenges in the field of study.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>6. Communicates clearly in ways appropriate to the field of study</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>7. Recognizes and apply principles of ethical and professional conduct</td>
<td>1 2 3 4 5</td>
</tr>
</tbody>
</table>

Additional Comments (optional):

Student Name: ___________________________   Date of assessment: _________________

*Descriptors for the scoring rubric

1 *Needs improvement* -- the student is lacking in many aspects
2 *Developing* -- the student has a grasp on the required elements, but needs to make additional progress
3 *Satisfactory* -- the student has adequately met the minimum expectations
4 *Above average* -- the student’s performance has exceeded minimum expectation in many aspects
5 *Excellent* -- the student’s performance far exceeded expectations in all aspects
# Appendix D – Post-Thesis Exam Assessment Form (Ph.D.)

**Department of Biological Systems Engineering**

**PhD Degree Graduating Student Assessment Questionnaire**

To be filled in by the student’s thesis examination committee

Please indicate the level of student’s competency in his/her field of study with regards to following learning goals by checking boxes 1 through 5, with 5 being the best.

<table>
<thead>
<tr>
<th>Learning goal</th>
<th>Competency*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Articulates research problems, potentials, and limits with respect to theory, knowledge, or practice within the field of study</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>2. Formulates ideas, concepts, designs, and/or techniques beyond the current boundaries of knowledge within the field of study</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>3. Creates research, scholarship, or performance that makes a substantive contribution</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>4. Demonstrate understanding of the primary field of study in a historical, social, or global context</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>5. Advances contributions of the field of study to society</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>6. Communicates complex ideas in a clear and understandable manner</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>7. Fosters ethical and professional conduct</td>
<td>1 2 3 4 5</td>
</tr>
</tbody>
</table>

Additional Comments (optional):

*Descriptors for the scoring rubric*

1 *Needs improvement* -- the student is lacking in many aspects
2 *Developing* -- the student has a grasp on the required elements, but needs to make additional progress
3 *Satisfactory* -- the student has adequately met the minimum expectations
4 *Above average* -- the student’s performance has exceeded minimum expectation in many aspects
5 *Excellent* -- the student’s performance far exceeded expectations in all aspects
Appendix E – Annual Graduate Student Performance Review Form

Department of Biological Systems Engineering
Annual Graduate Student Performance Review

Student name: _____________________ Degree: MS/PhD   Date: _________________

1. What motivates you to pursue graduate studies? If you are in your second year or later, describe if there have been any changes since you started your work, and how?

2. How do you find your classes in terms of their relevance, workload etc.? Would you like additional or different set of classes, if yes what are they?

3. How do you find the research climate in the lab, department, and on campus?

4. What are your goals for your thesis research for the coming year?

5. What are your professional growth and career aspirations? How have you explored those opportunities?

6. Is the student making satisfactory progress towards degree? (be descriptive and provide suggestions for improvement)

Overall progress/performance score (circle one): 1    2    3    4    5
1: Needs improvement; 2: Developing; 3: Satisfactory; 4: Above average; 5: Excellent