

## Machinery Systems Engineering Requirements



### General Studies 20 - 23 Credits

Social Sciences  
Humanities  
Ethnic Studies  
Economics  
International Studies  
Oral and written communication

### Basic Sciences 37 - 40 Credits

Biological Science  
Mathematics  
Chemistry  
Physics

### Engineering Sciences 21 Credits

Fluids  
Statics and Mechanics of Materials  
Thermodynamics  
Engineering Economics  
Material Properties  
Instrumentation

### Machinery Systems Option 44 - 50 Credits

Engineering Principles of Off-Highway Vehicles  
Engineering Principles of Ag Machinery  
Machine Element Design  
Manufacturing Processes  
Design capstone experience  
Technical electives

### Minimum Requirements for a Bachelor of Science Degree 128 credits

The curriculum changes from year to year. Updated curriculum sheets with exact requirements can be obtained from the department. For more details, please consult the university catalogue or visit our website.

■  
Biological Systems Engineering  
460 Henry Mall  
University of Wisconsin - Madison  
Madison, WI 53706

■  
(608) 262-3310  
fax: (608) 262-1228  
e-mail: [bse@facstaff.wisc.edu](mailto:bse@facstaff.wisc.edu)  
web site: <http://bse.wisc.edu>

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# Machinery Systems Engineering



## Technological Revolution

Over the past 50 years, engineers have designed machines and systems that have greatly improved society's quality of life. Machinery Systems Engineers have been key in moving society from the highly manual culture of the early 20<sup>th</sup> century to the highly mechanized and technical society we have at the start of the 21<sup>st</sup> century. Even with these advances, the job of the Machinery Systems Engineers is not complete. Concern for our natural environment and worker safety, and the constant need to reduce costs, improve efficiency and conserve energy, will continue to challenge Machinery Systems Engineers.



## Career Opportunities

Machinery Systems Engineers work in a variety of industries applying mechanical technology and knowledge of biological systems to solve equipment related problems. From design and manufacturing to testing and evaluation to sales and support, Machinery Systems Engineers provide the technical know-how to get the job done. Machinery System Engineers work in companies large and small that produce machines and systems for:



- agriculture
- food & fiber processing
- construction
- mining
- lawn- and ground-care
- materials handling
- forestry and paper industries

## Academic Preparation

If you enjoy math and science and are interested in agriculture, biology or mechanical systems - Machinery Systems Engineering will be a career for you. Your college prep curriculum should include at a minimum algebra, trigonometry, biology, chemistry, and physics. Advanced math and science courses are also quite helpful.

## The Biological Systems Engineering Department

Machinery Systems Engineering is a program option within the Department of Biological Systems Engineering (BSE) at the University of Wisconsin-Madison. In BSE we offer a wide variety of classes many with hands-on experience. One of the hallmarks of our program is the breadth of knowledge and experience that we offer our students. You will be able to take courses in a wide variety of disciplines to meet your individual interests. And, you won't be just another student in your Machinery Systems Engineering courses. We offer small class sizes taught by professors who know each student by name. This one-on-one interaction and personal attention is the cornerstone of our program.

## Financial Aid Resources

- College of Agriculture and Life Sciences Scholarship Program
- Biological Systems Engineering Department
- Work Study
- UW-Madison Financial Aid



## Learning Outside the Classroom

Prospective employers are looking for new hires who have had learning experience outside the classroom. In Machinery Systems Engineering, you'll have a wide variety of options to enhance your education beyond the classroom, including:

- Industry Co-ops and Internships - earn credits while working in industry
- Faculty Research Projects - work on cutting edge research projects
- Student Chapter of ASAE - take a leadership role in our student professional organization
- Engineering Expo - develop projects to display at this biannual event
- 1/4 Scale Tractor Team - help design and fabricate a 1/4 scale pulling tractor that competes in an annual national event

## Other Option Areas

The BSE Program has 3 other option areas

- Structural Systems Engineering
- Food and Bioprocess Engineering
- Natural Resources and Environmental Engineering

*Please visit our homepage at*

***<http://bse.wisc.edu>***

*to learn more about  
Machinery Systems Engineering at the  
University of Wisconsin-Madison.*

## Student Testimonials

“The classes are smaller so you can get more one-on-one interaction with the professors.”

“It's a great learning environment with great facilities.”

“The faculty takes a genuine interest in the well-being of the students.”

“The opportunity to work with great students and staff that are willing to give input in class or on outside projects.”