Technical Systems Management
Undergraduate Program
The Technical Systems Management (TSM) curriculum in the Department of Agricultural and Biological Engineering at the University of Illinois combines the best of new technology with sound management principles to help you acquire the technical excellence you need for today’s global economy. Learn how to problem-solve and troubleshoot within systems involving agriculture, food, energy, water, and the environment.

Focus on applying engineering principles, studying the technology used in these systems, and integrating business management concepts in the food, feed, and agricultural industries. Discover how to manage abundant and safe supplies of food, feed, water, and energy to maintain healthier, more sustainable indoor and outdoor environments. Learn how to operate new technology within the systems you are studying. In a world with finite resources and nearly 7.5 billion people, develop skills that will make a difference on both local and global scales.

The Department of Agricultural and Biological Engineering – ABE@Illinois – is part of the College of Agricultural, Consumer and Environmental Sciences (ACES) and the College of Engineering.
University of Illinois admissions decisions are based on a holistic review of each student's application, including test scores, course rigor, grades, leadership and volunteer experiences, and essays. For more information, contact admissions.illinois.edu.

TOP 5 Reasons to join TSM

1. Be part of a respected program in the world-renowned College of ACES.

2. Take advantage of the benefits of a Big Ten campus while enjoying the department’s community atmosphere, where faculty know you by name.

3. Enjoy a flexible curriculum that allows you to personalize your degree.

4. “Learn by doing” in a variety of experiential learning settings.

5. Discover wide-ranging options after graduation – from professional or graduate school to job opportunities in industry, government, academia, and non-profit and consulting work.

SCHOLARSHIPS AND FINANCIAL AID

- ABE@Illinois offers over $45,000 in scholarships to continuing students.
- The College of ACES provides more than $3 million in financial support to incoming and continuing students each year.
- The U of I Office of Student Financial Aid awards assistance from federal, state, university, and private resources. For more information, visit osfa.illinois.edu.

“My TSM degree exposed me to a mix of business and science classes. Since I wanted to work in fuel, it gave me the skills to understand commodities and finance while also allowing me to understand the chemical structure of the fuel and how it’s produced.”

- CATE GAGLIARDO, '12
BENEFITS OF JOINING A TOP-RATED DEPARTMENT

- An undergraduate student-to-faculty and student-to-advisor ratio of 19:1
- Average class size of fewer than 20 students in upper-level courses
- Average lab section size of 20 students
- Two-thirds of faculty members ranked excellent by students in the past five years, with many winning campus and national teaching awards
- Field trips and social gatherings for new students to meet other TSM students, advisors, and faculty
- Professional and peer mentoring offered as early as the first semester

ADVANTAGES OF A VIBRANT CAMPUS

- A breadth of academic programs with broad academic excellence
- Internationally renowned faculty
- World leadership in research, teaching, and public engagement
- Big Ten athletic events and a variety of recreational facilities
- Top-notch library system
- Wide-ranging artistic, musical, and cultural events

A PERSONALIZED CURRICULUM

- Establish your technical foundation through core math and science courses
- Develop an expertise by selecting TSM courses in your area of interest
- Enhance this expertise with relevant courses in other ACES and management disciplines
- Obtain one or more minors in related fields
- Enrich your education with general education courses
- Find the right combination of courses for your career and educational goals
ONE MAJOR, FIVE PATHS

Construction Management
Manage residential, agricultural, and industrial construction technologies; maintain systems to handle and treat biowaste; operate and manufacture systems that provide desired environmental conditions for animals, people, crop storage, and greenhouses; develop alternative housing and nutrient management practices.

Environmental Systems
Utilize GIS and other technology to develop and manage practices to control the transport of agricultural and other non-point sources of pollution; implement systems for sustaining and improving water quality, maintaining ecosystems, managing stormwater, and developing optimal irrigation use and drainage systems.

Mechanization, Marketing, and Technology Management
Test, analyze, manufacture, and manage off-road machinery and specific machine components; understand equipment control systems for automating machinery; troubleshoot and solve problems associated with agricultural, construction, and mining equipment.

Processing Systems
Process and convert agricultural and biological materials into useful co-products for human, animal, and industrial purposes; understand the variability in raw materials and its effects on the operation of commercial processes, co-product quality, and profitability.

Renewable Energy Systems
Understand the science behind renewable energy from sunlight, wind, geothermal, and biomass sources; perform economic analysis of proposed systems; manage energy systems to blend appropriate sources into reliable, cost-effective, and long-lasting systems; develop, construct, and operate large-scale, grid-connected renewable energy projects.

“Hands-on experience in technical TSM courses and industry experience in your field of interest are invaluable when you’re starting a career.”

– DELAYNE DURDLE, ’13
On campus
Undergraduate Research

Our students are encouraged to participate as undergraduates in research with our award-winning, world-renowned faculty while earning credit hours or pay for part-time employment. You can submit posters, papers, or presentations on your research findings at international meetings.

Student Clubs and Competitions

More than 1,000 student organizations are active across campus. Nearly 80 percent of our students gain leadership experience in club activities, including these:

- American Society of Agricultural and Biological Engineers (ASABE)
  » ¼-scale tractor design competition (Illini Pullers)
  » Fountain wars
  » Robotics competition
- Innovation Immersion Program
- Illini Algae
- Solar Decathlon
- Illini Agricultural Mechanization Club

EXPERIENTIAL LEARNING

“A lot of my internship with Cargill AgHorizons was self-driven. I had the opportunity to do so many different things, mostly because I just asked. When I returned to campus, I received a full-time job offer from Cargill, and I accepted it the next day.”

– APRIL-HOPE WAREHAM, ’15
In the classroom

Learn not only the theory but also the application and practice in our classes. Over half of our courses have a laboratory component, and you can expect personal attention from our faculty.

A highlight for many TSM students is the opportunity to take a series of hands-on courses at the sophomore level. These courses include lab sections supervised by a faculty member and one or two upperclassmen and cover the following topics: Materials and Construction Systems; Metallurgy and Welding Processes; Wiring, Motors, and Control Systems; and Off-Road Equipment Management.

In the real world

Study Abroad

Nearly 400 programs are available to TSM students to study abroad, with programs in over 100 countries ranging from 10-day to year-long experiences. Learn more from the College of ACES Education Abroad Programs Office or the campus Study Abroad Office. Most recently, TSM faculty have led summer programs to Puerto Rico, Brazil, China, Greece, and South Africa. We also sponsor semester-long exchange programs to Brazil, Greece, Italy, Ireland, and Spain. Don’t miss out on applying for departmental and college scholarships to support your study abroad experience.

Internships and Placement

More than 80% of our students land at least one internship, with many interning each summer. Through internships, you can apply what you have learned in the classroom and become competitive for the job market or graduate school.

The average starting salary for TSM graduates is $50,000. Our students work as control systems technicians, water quality specialists, grain elevator managers, parts operations supervisors, marketing representatives, appraisers, equipment dealers, golf course managers, and international agriculture development specialists. They are employed by Fortune 500 companies, consulting firms, academia, government agencies, non-profit groups, and research institutions.
FOR MORE INFORMATION OR TO VISIT ABE@ILLINOIS, CONTACT:

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