In the Department of Agricultural and Biological Engineering (ABE), our students learn engineering and scientific skills to design and/or manage technological solutions to problems in agricultural, food, and other biological systems.

Your ABE education will prepare you to develop and manage technology and systems that will ensure abundant and safe food, water, and energy; sustainable and innovative agriculture; and healthy and sustainable indoor and outdoor environments.

Ready to learn how you can make a difference with a degree from the Department of ABE?
Whether you choose our engineering (ABE) major or our technical systems management (TSM) major, you will be more than just a face in the crowd. Small class sizes and access to our internationally renowned faculty ensure you’ll receive personalized attention throughout your degree program. Our students get involved in hands-on research and take advantage of life-changing study abroad programs and industry-relevant internships.

Graduates from our nationally ranked department are equipped to address grand challenges related to food, water, energy, and the environment. In a world with finite resources and nearly 7.5 billion people, your skills will be highly sought-after on both the local and global scales.

100% of ABE graduates and 85% of TSM graduates have earned employment or continued their education within six months of graduation.
EXPERIENTIAL LEARNING.

In ABE, we believe doing is a crucial part of learning. Our engineering (ABE) majors start with a hands-on research or design project in our Introduction to ABE course, and top off their experience with an industry-sponsored design project in a capstone course. Technical systems management (TSM) majors choose from hands-on courses, such as material and construction systems; metallurgy and welding processes; wiring, motors, and control systems; and off-road equipment management.

Undergraduate Research
Our students are encouraged to take part in research projects in collaboration with our award-winning faculty and graduate students. As a student, you can build and test agricultural robots or design systems to clean water in urban settings, all while gaining valuable expertise in your field. Then share your research findings at professional conferences, along with your faculty mentors. These experiences prepare you for your next step, your successful career.

Study Abroad
Our students choose from nearly 400 study abroad programs in over 100 countries. We host faculty-led summer programs to Puerto Rico, South Africa, and China, including an opportunity to conduct research at Zhejiang University and visit Chinese industrial sites. We also sponsor semester-long exchange programs to Greece, Italy, Ireland, and Spain. ACES Study Abroad office, International Programs in Engineering, and the campus Study Abroad office will help you find the experience that best fits your interest.

Student Organizations and Design Competitions
Nearly 80% of our students participate in student organizations and design competitions in ABE and across campus. Join the Illinois Biodiesel Initiative, Student Chapter of the American Society of Agricultural and Biological Engineers, Illini Urban Farmers, or over 1,000 other student clubs and solve real-world problems while developing leadership, collaboration, and professional skills.

Technology Entrepreneur Center
Develop your entrepreneurial mindset with the TEC. Take courses and attend workshops on technology innovation and market adoption. TEC offers certificates in Innovation and Technology Commercialization, and engineering (ABE) majors can get a dual degree in ABE and Innovation, Leadership, and Engineering Entrepreneurship.
Degrees from the Department of ABE can take you anywhere in the world, from the local grain elevator to the top of a high-rise in Dubai to a California solar farm. With our two degree options and an 87% job placement rate college-wide, you’ll start making a difference in your community immediately.

Our engineering (ABE) majors graduate with a degree from The Grainger College of Engineering, and start in the workforce with an average salary of $69,067. Our graduates take on any number of engineering titles, including design, project, test, quality control, consulting, process, environmental, and more.

Our technical systems management (TSM) majors graduate with a degree from the College of ACES, and start with an average salary of $58,481. Our graduates work as control systems technicians, water quality specialists, grain elevator managers, parts operations supervisors, marketing representatives, appraisers, equipment dealers, golf course managers, international agriculture development specialists, and more.

Both paths lead to a wide range of career opportunities, including Fortune 500 companies, consulting firms, academia, government agencies, non-profit groups, and research institutions. Find out how you can channel your passions in one of our two degrees and many specializations.
As an engineering (ABE) major, you’ll take classes and interact with faculty in two highly respected colleges: the College of ACES and Grainger Engineering. Our ABET-accredited program combines fundamental engineering skills with training in the design and analysis of complex systems for food, agriculture, energy, and the environment. You can choose one of two concentrations—agricultural or biological engineering—and one of our seven specializations:

**Bioenvironmental Engineering**
Design systems and structures to ensure desired environmental conditions for animals, people, crop storage, and greenhouses. Complement your engineering skills with coursework in horticulture or animal sciences. You can also study abroad, perform undergraduate research, and obtain internships with government organizations or industry. Prepare for a career as a design engineer, structures engineer, or project engineer.

**Ecological Engineering**
Design and manage sustainable ecosystems and service to reduce human impacts to the natural environment. Supplement your foundational engineering expertise with classes in ecology and conservation biology or natural resources conservation. You can leverage your internships and other co-curricular experiences to secure full-time employment as an environmental engineer, ecological engineer, design engineer, or research scientist.

**SCHOLARSHIPS AND FINANCIAL AID.**
The College of ACES and Grainger Engineering provide more than $5 million in financial support to incoming and continuing students each year.
Food and Bioprocess Engineering
Develop and manage equipment and systems for processing of food and biologically-based materials. Enhance your engineering experience with courses in chemistry or material science and engineering. Your career opportunities include process engineer, food engineer, product engineer, or research and design scientist with food and feed companies.

Nanoscale Biological Engineering
Develop technologies at the nanoscale for biological applications, such as biosensors. Complement your foundational engineering expertise with courses in bioengineering or molecular and cellular biology. You could find full-time employment as a project engineer, design engineer, or research scientist in biotechnology or related fields.

Off-Road Equipment Engineering
Design, manufacture, and test equipment and control systems for off-road industries, including agriculture and construction. Supplement your engineering experience with coursework in crop and soil management or food and agribusiness management. You’ll be prepared to enter the workforce as a mechanical engineer, project engineer, design engineer, or product engineer, working with equipment manufacturers and other companies.
Renewable Energy Systems Engineering
Design and evaluate renewable energy systems, including solar, wind, and geothermal energy. Enhance your engineering skills with classes in electrical and computer engineering or sustainability, energy, and environment. You could start your career as a mechanical engineer, project engineer, design engineer, or product engineer with government agencies or major companies.

Soil and Water Resources Engineering
Design sustainable systems to manage and conserve water and soil resources, control erosion and sediment, improve water quality, and minimize pollution. Complement your engineering experience with courses in environmental economics and law or geography and GIS. You’ll find employment opportunities as a water quality engineer, sustainability engineer, civil engineer, or conservation engineer with government agencies or industry.

OUR GRADUATES MAKE MORE MONEY.
On average, our highly sought-after graduates earn 21% more than their peers at most universities with comparable programs over a 20-year period. They earn more than double what their peers from other Illinois universities with similar programs earn during that same period‡.

‡ Payscale.com
Our TSM degree combines the best of new technology with sound management principles to help our students lead in today’s global economy. You will apply engineering principles, study the technology used in these systems, and integrate business management concepts in the food, feed, agricultural, environmental, energy, and construction industries. Our students may choose to hone specific skills and interests through one of our five specializations:

**Construction Management**
Manage construction projects for agricultural, residential, commercial, and industrial purposes; develop alternative nutrient management practices. You may supplement your hands-on technical skills with coursework in architectural studies or urban planning. Prepare for a career as project manager, field engineer, construction inspector, or project engineer with construction and engineering firms.

**Environmental Systems**
Manage systems for improving water and soil quality, maintaining ecosystems, managing stormwater, and developing optimal irrigation and drainage systems. You will enhance your applied engineering abilities with classes in environmental economics and law or spatial and quantitative methods in natural resources. Become a data applications paraprofessional, management trainee, or technician with government agencies and environmental consulting firms.

MAJOR IN TECHNICAL SYSTEMS MANAGEMENT.

More than 80% of our graduates work, volunteer, or pursue internships before completing their degrees.
Mechanization, Marketing, and Technology Management

Test, evaluate, and manage off-road machinery for agricultural, construction, and related industries. Complement your practical mechanical expertise with courses in crop and soil management or food and agribusiness management. You’ll be ready for a career as technical marketing representative, product service manager, engineering technician, dealer business specialist, or seed representative with agricultural companies.
Processing Systems
Manage processing technology for converting agricultural and biological materials into useful coproducts for human, animal, and industrial purposes. Supplement your applied engineering expertise with coursework in food science or horticulture. Become a production engineer, production supervisor, grain merchandiser, information systems analyst, sales associate, supply chain manufacturing resource, or superintendent trainee with major companies.

Renewable Energy Systems
Manage renewable energy projects involving solar, wind, geothermal or biomass sources. You will enhance your practical mechanical skills with classes in natural resource conservation or sustainability, energy, and environment. Secure full-time employment as a project engineer, field engineer, lead installer, or project manager with energy production companies.

OUR STUDENTS GRADUATE IN 4 YEARS.
Our 4-year graduation rate is 74%. We are No. 1 among universities with comparable programs when it comes to the amount of time it takes our students to graduate†.

SCHEDULE A VISIT

ABE Undergraduate Programs
abe@illinois.edu
Agricultural Engineering Sciences Building
217-333-3570
Visit myillini.illinois.edu to create a myIllini account.