Technical Systems
MANAGEMENT
Graduate Program

COLLEGE OF
ACES

TECHNICAL SYSTEMS MANAGEMENT

A graduate degree in Technical Systems Management (TSM) combines the knowledge of agricultural, biological, and physical sciences with managerial and technical skills. Prepare yourself for careers in the production, processing, and manufacturing of food, fiber, feed, and fuel by studying science, systems management, and applications engineering. Students focus on applying engineering principles, studying the technologies used in agriculture, and integrating business concepts in the food and agricultural industries.

You can pursue two degree paths in our TSM graduate program:

- M.S. (Thesis or Non-thesis)
- M.S. with Professional Science Master's (PSM)

The Department of Agricultural and Biological Engineering—ABE@Illinois—coordinates both degrees in cooperation with the Graduate College and the Illinois PSM program.

ADMISSIONS AND FINANCIAL ASSISTANCE

Admissions

You may submit your application for admission online, using the University of Illinois Graduate College website (grad.illinois.edu/admissions/apply) or the PSM Program website (psm.illinois.edu/apply). You may also download and print an application.

Admission requirements include the following:

- Bachelor's degree from a regionally accredited U.S. institution or a comparable degree from a recognized institution abroad
- Grade point average of 3.0 or higher for the last 60 hours of undergraduate work and for any graduate work
- GRE (Graduate Record Examination)
- TOEFL (Test of English as a Foreign Language) for non-native speakers of English

Financial Assistance

ABE offers a limited number of graduate fellowships and assistantships on a competitive basis to TSM master's students pursuing the thesis option. A fellowship provides a monetary stipend, a tuition waiver, and a partial fee waiver. An assistantship provides a stipend plus a tuition waiver and partial fee waiver in exchange for employment in research.

For students pursuing the Professional Science Master's program, loans are the principal source of financial aid. As a professional program, the Illinois PSM cannot provide financial support, and Illinois PSM students may not hold assistantships or other appointments providing waivers of tuition or fees.

Visit the Illinois Office of Student Financial Aid for additional information (osfa.illinois.edu).

MASTER'S OF SCIENCE

The master's program in TSM prepares students for challenging careers with consulting firms, government agencies, industry, and research.

This degree introduces you to research methodology while providing advanced coursework. The curriculum combines the best of new technology for agriculture with sound business principles to help students become technically proficient business people equipped for today's global economy. In consultation with an advisor, you will design and execute a research plan, analyze the resulting data, and write a thesis. (The non-thesis option is allowed only with departmental approval at or before graduate study begins, and a final report is required.)

Students who enter our program usually have a bachelor's degree in an agricultural, science, technical, or business field. The requirements for completing an M.S. degree in TSM include these:

- 25 hours of coursework (minimum)
- 8 hours of thesis research
- 18 to 24 months beyond the bachelor's degree

"The professors were wonderful mentors that were constantly engaged to ensure my success and showed genuine interest in me as a person, not just the work that I could do."

JUSTIN MAUGHAN, M.S. TSM '13

MASTER'S OF SCIENCE WITH PROFESSIONAL SCIENCE MASTER'S

Merging technology with management in a systematic approach to problem-solving is the foundation of the Professional Science Master's program in TSM. Graduates are equipped with the advanced knowledge, abilities, and skills to apply physical and natural sciences to solve some of the world's most pressing problems. Our rigorous, hands-on program combines science knowledge with business know-how to prepare students for technical and leadership careers in managing agricultural and biological systems.

PSM applicants must have a bachelor's degree comparable to the University of Illinois undergraduate TSM degree. The PSM program is built around four integrated learning components:

- Science – 32 hours in a specific field of study; this is the core of the program
- Business – 10 hours in essential business knowledge and skills
- Industry seminar series – weekly discussion of business concepts and examination of current and emerging business issues, often including interaction with business experts
- Internship – hands-on work experience to support your personal and professional goals

The PSM degree is a full-time, on-campus program which is completed in 16 months (three semesters and one summer term). A thesis is not required.

SPECIALIZATIONS

Construct a program of study that best fits your personal and professional objectives. You may focus on one or more of the following specializations.

Agricultural Safety and Health

Develop an emphasis in agricultural safety and health by taking three 400-level core courses and a variety of complementary electives. This specialization establishes a strong base for understanding the occupational safety and health hazards and issues facing production agriculture. It also familiarizes you with the injury-control methodologies of behavioral persuasion, engineering design, and regulation or enforcement and how they affect injury and occupational illness rates among agricultural populations. Graduate students selected for an agricultural safety and health traineeship receive a stipend and some tuition assistance.

Construction Management

Focus on managing residential, agricultural, and industrial construction technologies by studying those related to bioenvironmental engineering, including ventilation and controls, air quality, and manure management. You may pursue research and development of alternative housing as well as nutrient management issues associated with animal agriculture.

Environmental Systems

Advance your knowledge and skills in the development and stewardship of natural systems, especially those relating to land and water resources. You will 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, and managing stormwater; implement the best available technology for optimal irrigation use, water management, and drainage; and utilize GIS and other software to help develop and implement environmental systems.

Mechanization, Marketing and Technology Management Systems

In this specialization, you will be equipped to test, analyze, and manage off-road machinery and systems, including costing and selection. You also learn to troubleshoot and solve problems associated with agricultural and construction equipment.

Processing Systems

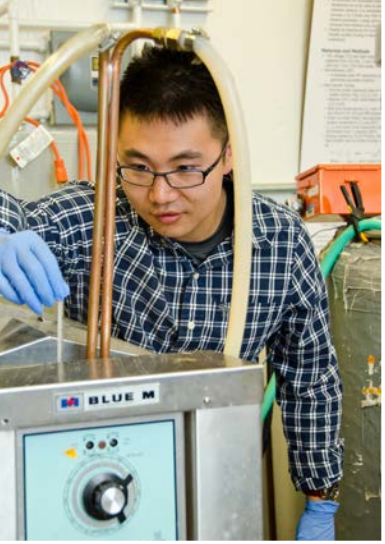
As a student involved with bioprocessing, you will learn how to process and convert agricultural and biological materials into useful co-products. Each bioprocess results in a series of co-products that can be used for human, animal, and industrial purposes. You will understand how the inherent variability of raw materials can affect the operation of commercial processes, co-product quality, and profitability. You will also learn how bioprocesses work on a daily basis and how future development of bioproducts and biofuels will impact the industry.

Renewable Energy Systems

Understand the fundamental science behind harnessing renewable energy from sunlight, wind, geothermal, and biomass, and learn how to perform an economic analysis of proposed systems. You will also learn management skills for solar, wind, and hybrid energy to blend appropriate energy sources into reliable, cost-effective, and long-lasting systems. This can include the development, construction, and operation of large-scale, grid-connected renewable energy projects.

"The PSM/TSM program is very flexible which allows students with different backgrounds to find the goals they are passionate about and build a curriculum toward those goals."

YU-TIEN (CASEY) CHENG, M.S. PSM/TSM, '12




FOR MORE INFORMATION OR TO SCHEDULE A VISIT, CONTACT:

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