

AGRICULTURAL AND BIOLOGICAL ENGINEERING

Learning Outcomes

Master of Science (M.S.)

1. **KNOW:** Graduates will be able to demonstrate mastery of core principles and methods of agricultural and biological engineering professional practice and in-depth mastery of a subfield.
2. **THINK:** Graduates will be able to critically and creatively conceptualize and evaluate engineering problem formulations, analyses, and solutions.
3. **APPLY/CREATE:** Graduates will demonstrate proficiency in engineering problem formulation, planning, organization and implementation of appropriate methods of analyses and solutions.
4. **COMMUNICATE:** Graduates will be able to effectively communicate technical knowledge, including ideas, data analysis, findings, or decision justification in written and oral presentation appropriate to the audience.
5. **PROFESSIONAL PRACTICE:** Graduates will demonstrate knowledge of, and ability to, practice the professional standards of engineering and professional behavior. Graduates will demonstrate a knowledge of ethics, equity, diversity and inclusivity and the application of these concepts and principles to the profession and to relevant social issues.

Doctor of Philosophy (Ph.D.)

1. **KNOW:** Graduates will demonstrate a deep knowledge of principles and methodologies of agricultural and biological engineering which may include the foundational mathematics, physics, chemistry, biology, engineering or communications.
2. **CREATE:** Graduates will be able to create new knowledge and develop new solutions to agricultural and biological engineering problems by developing an understanding of the scientific and engineering literature and engaging in scientific research.
3. **APPLY:** Graduates will be able to apply knowledge of the principles and methodologies of agricultural and biological engineering to the process of creating new knowledge and conducting original scientific research in the field of agricultural and biological engineering.
4. **THINK:** Graduates will be able to independently analyze and critique motivations for conducting research, the research process, research results, and the implications of research and its results to our world.
5. **COMMUNICATE:** Graduates will be able to actively listen, convey accurately and clearly ideas and results both orally and in writing, and engage in positive, effective deliberation.
6. **PROFESSIONAL PRACTICE:** Graduates will be prepared to become leaders in our society by being able to apply technical skills for effective decision making in agricultural and biological engineering fields. Graduates will demonstrate a knowledge of ethics, equity, diversity and inclusivity and the application of these concepts and principles to the profession and to relevant social issues.