

BIORENEWABLE SYSTEMS

Learning Outcomes

Master of Science (M.S.)

1. **KNOW:** Graduates will demonstrate knowledge of sustainable, renewable biologically-based systems including their life-cycle assessment and technoeconomic analyses.
2. **THINK:** Graduates will be able to critically and creatively conceptualize and evaluate biorenewable industry problem formulations, analyses, and solutions.
3. **APPLY/CREATE:** Graduates will demonstrate proficiency in biorenewable industry 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 be able to apply analytical skills for effective decision making in the biorenewable resource industries. Graduates will demonstrate a knowledge of ethics, equity, diversity and inclusivity and the application of these concepts and principles to the profession.

Doctor of Philosophy (Ph.D.)

1. **KNOW:** Graduates will demonstrate knowledge of sustainable, renewable biologically-based systems, including their life-cycle assessment and technoeconomic analyses.
2. **APPLY/CREATE:** Graduates will demonstrate knowledge of one or more of the following: technologies and systems analysis, science, safety, marketing, business, or management principles and methodologies as they pertain to biorenewable systems.
3. **APPLY/CREATE:** Graduates will be able to communicate, both orally and in-writing, business and/or technical concepts within the context of biorenewable industries. Graduates will be able to analyze and interpret data and demonstrate an ability to draw sound conclusions from data.
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 the skills acquired to engage in effective decision making in the operations and/or management of biorenewable resource industries. Graduates will demonstrate a knowledge of ethics, equity, diversity and inclusivity and the application of these concepts and principles to the profession.