Graduate Field of Biological and Environmental Engineering
Learning Proficiencies for graduate students

PhD Degree

A candidate for a **doctoral degree** is expected to demonstrate mastery of knowledge in biological or environmental engineering and to synthesize and create new knowledge, making an original and substantial contribution to their discipline in a timely fashion.

Proficiencies

- Make an original and substantial contribution to the discipline
  - Think originally and independently to develop concepts and methodologies
  - Identify new research opportunities within one’s field
- Demonstrate advanced research skills
  - Synthesize existing knowledge, identifying and accessing appropriate resources and other sources of relevant information and critically analyzing and evaluating one’s own findings and those of others
  - Master application of existing research methodologies, techniques, and technical skills
  - Communicate in a style appropriate to the discipline
- Demonstrate commitment to advancing the values of scholarship
  - Keep abreast of current advances within one’s field and related areas
  - Show commitment to personal professional development through engagement in professional societies, publication, and other knowledge transfer modes
  - Show a commitment to creating an environment that supports learning—through teaching, collaborative inquiry, mentoring, or demonstration
- Demonstrate professional skills
  - Advance ethical standards in the discipline
  - Listen, give, and receive feedback effectively
Research master’s degree

A candidate for a research master’s degree is expected to demonstrate knowledge in biological or environmental engineering and to synthesize and create new knowledge, making a contribution to their field in a timely fashion.

Proficiencies

- Make a contribution to the scholarship of the field
- Learn advanced research skills
  - Synthesize existing knowledge, identifying and accessing appropriate resources and other sources of relevant information and critically analyzing and evaluating one’s own findings and those of others
  - Apply existing research methodologies, techniques, and technical skills
  - Communicate in a style appropriate to the discipline
- Demonstrate commitment to advancing the values of scholarship
  - Keep abreast of current advances within one’s field and related areas
  - Show commitment to personal professional development through engagement in professional societies and other knowledge transfer modes
  - Show a commitment to creating an environment that supports learning—through teaching, collaborative inquiry, mentoring, or demonstration
- Demonstrate professional skills
  - Adhere to ethical standards in the discipline
  - Listen, give, and receive feedback effectively

Aspirational Goals

Cornell University and the Graduate Field of Biological and Environmental Engineering have expectations of Cornell graduates that defy explicit measurement scales. These aspirational goals are intended to encourage your growth and development but do not necessarily lend themselves to assessment as readily as the learning proficiencies.

- Be a researcher and scholar in their field of expertise
- Effectively engage in one’s broader community through various forms of outreach
- Explore interconnections
  - Focus on plural contexts and cultures
  - Respect research in other areas
  - Understand and articulate the impact of research on society