

EES Learning Outcomes *Approved fall 2016*

The learning outcomes below are grouped into three broad categories, content, skills, and citizenship.

The successful EES major will:

CONTENT:

- Demonstrate basic core competency by supporting with evidence the following Earth science literacy principles earth literacy principles (www.earthscienceliteracy.org/):
 - Earth scientists use repeatable observations and testable ideas to understand and explain our planet.
 - Earth is 4.6 billion years old.
 - Earth is a complex system of interacting rock, water, air, and life.
 - Earth is continuously changing.
 - Earth is the water planet.
 - Life evolves on a dynamic Earth and continuously modifies Earth.
 - Humans depend on Earth for resources.
 - Natural hazards pose risks to humans.
 - Humans significantly alter the Earth.
- Demonstrate understanding of fundamental Earth systems and cycles.
- Outline the broad physical and biological history of the planet, evidence for that history and how the past can be used to anticipate future change.
- Understand the time and spatial scales of Earth and environmental processes, and differentiate between processes acting at local, regional, and global scales.
- Make inferences about Earth and environmental processes from observations of the natural world, experimentation, and modeling.

SKILLS:

- Use scientific methods, quantitative analysis, technology, and evidence based decision making as individuals and in teams to explore complex issues and analyze problems in earth and environmental science.
- Locate, interpret, synthesize, and apply relevant data and information sources to address questions in Earth and environmental science.
- Use time series, and data in 3D and 4D to explore and interpret Earth and environmental processes.
- Communicate clearly in visual, verbal and written modes and use new media as appropriate to convey Earth and environmental content and information to public and professional science audiences.

CITIZENSHIP:

- Understand the value of high ethical standards in one's professional conduct and stewardship of the Earth and its resources.
- Value how earth science knowledge and skills can be used to address the grand challenges facing human society, including climate change, biodiversity, energy, water resources, and hazards.