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 (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.