PS 325 Learning Goals (modified from NCATE, NSTA, and NSES lists)

Historical development and perspectives on science, and the evolution of its major ideas and theories. These include contributions from significant historical figures and underrepresented groups.

Historical development and perspectives in biology, and the evolution of theories in biology.

Historical development and perspectives in chemistry, and the evolution of its theories.

Historical development and perspectives in Earth and space sciences, and the evolution of its theories.

Historical development and perspectives in physics and cosmology, and the evolution of their theories.

Behavior of organisms and their relationships to humans and human society.

Issues related to living systems such as genetic modification, uses of biotechnology, cloning, and pollution from farming.

Issues related to the environment such as personal and community health, population growth, natural resources and environmental quality, natural and human-induced hazards, and science and technology in local, national, and global challenges.

Issues related to physics such as disposal of nuclear waste, light pollution, shielding communication systems and weapons development.

Develop abilities to employ the technological design process

Distinguish between science, as investigation, and technology as design.

Develop understandings about science and technology

Understand the interrelationship between pure science, applied science, and technology.

Applications of physics and engineering in society, business, industry, and health fields.

Understand and successfully convey to students the unifying concepts of science as delineated by NSES.

Understand the historical and cultural development of science and the evolution of knowledge

Understand the philosophical tenets, assumptions, goals, and values that distinguish science from technology and from other ways of knowing the world.

Engage in studies of the nature of science, including critical analysis of false or doubtful assertions made in the name of science.

Nature of science: Fundamental processes in chemistry.

Gradual and catastrophic changes in the Earth.

Dating of the Earth and other objects in the universe.

Relate science disciplines to their local and regional communities.

Science as a human endeavor, the Nature of scientific knowledge, and Historical perspectives

Impact of science and technology on people and their community, and on personal and community health.