

SLO Presentation

ESCI

Date: 09/11/2019

SCIENCE, ENGINEERING & MATH
ESCI
PSLO No PSLOs
CSLO ESCI104 - Oceanography <ul style="list-style-type: none">• Critique mankind's changing relationship with the ocean system.• Synthesize the role of gravity, pressure, chemistry and density in the Earth-moon system, Earth's atmosphere, Earth's ocean, and Earth's interior.• Recall the dynamic processes involved in tectonic plate motions, including the geographic landforms associated with continental margins, ocean basins and mid-ocean ridges.• Combine an understanding of oceanic properties and processes with the biotic relationships found in the ocean's ecosystems.• Differentiate between the types of tides, sediment types and distribution, erosional and depositional landforms, types of estuaries, wave dynamics, coastal currents, rocky and sandy beaches, and vertical ocean zones.• Explain the patterns of seasons and insolation, sea surface temperatures, prevailing global winds, ocean salinity, ocean surface currents, deep ocean currents, el Nino and La Nina, and climate change. ESCI104L - Oceanography Laboratory <ul style="list-style-type: none">• Students apply knowledge of the scientific method and an ability to apply it in critical evaluation of oceanographic observations, data and trends in ocean science.• Students synthesize the role of gravity, pressure, chemistry and density in the Earth-moon system, Earth's atmosphere, Earth's ocean, and Earth's interior.• Students interpret bathymetry and navigation information from a NOAA marine chart.• Students describe the seasonal patterns of insolation, phytoplankton productivity, salinity, sea surface temperatures, and ocean circulation.• Students combine an understanding of oceanic properties and processes with the biotic relationships found in the ocean's ecosystems.• Students differentiate between the types of tides, sediment types and distribution, erosional and depositional landforms, types of estuaries, wave dynamics, coastal currents, rocky and sandy beaches, and vertical ocean zones. ESCI106 - Weather and Climate <ul style="list-style-type: none">• Describe the basic techniques used by meteorologists (and other scientists) to gather and interpret atmospheric data.• Recall the typical vertical variation of the basic variables used to quantify the atmospheric state, including temperature, pressure, humidity, winds, and natural and anthropogenic particles.• Identify basic cloud types and discuss their formation mechanisms, together with the precipitation types and other materials that precipitation cleanses from the air.• Describe a variety of large-scale atmospheric phenomena, including the extratropical cyclone, the jet stream, and the general circulation.• Describe a variety of mesoscale and small-scale atmospheric phenomena, including tropical storms, severe thunderstorms, and tornadoes.• Discuss climate and climate change, together with the possible influences that humans have on diverse climate phenomena. ESCI110 - Introduction to Earth Science <ul style="list-style-type: none">• Demonstrate an understanding of the role of gravity and density in the formation of galaxies and solar systems.• Differentiate between the constructive and destructive forces that shape Earth's topography and discuss the internal and external processes that drive these forces these forces.• Demonstrate an understanding of how streams, groundwater, glaciers, and ocean currents act to weather, erode, and deposit earth materials• Synthesize the atmospheric processes that heat and cool the atmosphere, drive wind, generate clouds and precipitation, and cause storms.• In laboratory, apply the scientific method.• In laboratory, use physical properties to identify minerals and rocks.• In laboratory, describe the relative movement of Earth's tectonic plates at each of the three types of plate boundaries and the type of crust

involved, provide an example of a specific landform created near each type of boundary, and locate on a map where each boundary could be found on Earth.

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- In laboratory, describe the Earth–Sun relationship and its influence on Earth's seasons.

ESCI180 - Earth Science Materials and Preparations

- Students apply knowledge from ESCI 110, GEOL 101, GEOG 101, or GEOG 101L in the preparation of a laboratory course.
- Students critique mankind's changing relationship with the ocean system.
- Students knowledge of the scientific method and an ability to apply it in critical evaluation of oceanographic observations, data and trends in ocean science.
- Students work with a mentor professor to learn stockroom organization, assisting, or leadership skills.
- Students synthesize the role of gravity, pressure, chemistry and density in the Earth-moon system, Earth's atmosphere, Earth's ocean, and Earth's interior.

ESCI298 - Directed Studies

- Students apply scientific method to research project.
- Students demonstrate ability to compose a "college-level" scientific research report.
- Students demonstrate ability to conduct independent research.