

The Earth: Its Physical Environment

ASTR/GEOL 1070

Major Topics Outline

(not necessarily in order or inclusive - adjusted with each offering)

Unit 1: Understanding the Universe

- Doing Science
 - A Brief History of Science
 - The Scientific Method
 - Observation vs Interpretation
 - Science and Human Interactions
 - Cosmology
 - The Tools of Astronomy
- Universe, Galaxy, Solar Systems
 - The Nature of Light
- Stars
 - Origins of Stars and the Elements
 - The Life Cycle of Stars
 - Beyond Our Galaxy
 - Our Sun
- The Solar System
 - The Fringes
 - Asteroids, Comets, Meteorites
 - The Jovian Planets
 - The Terrestrial Planets

Unit 2: Solid Earth

- Navigating Our Planet
 - Aerial Imagery
 - Grid Systems
 - Latitude/Longitude
 - UTM
 - Navigational Tools
 - Topographic Maps
 - Global Positioning Satellites (GPS)
- Deep Time
 - Evolving Life and Earth

- Earth Materials
 - Earth Layers
 - Core, Mantle, Crust
 - Lithosphere, Asthenosphere, Mesosphere
 - Minerals
 - The Atom and Periodic Law
 - Crystals and Composition
 - Rocks
 - Igneous, Metamorphic, Sedimentary
 - Soils
- Earth Processes
 - Plate Tectonics
 - Volcanoes, Earthquakes and Mountains
 - The Rock Cycle
 - Climate and Weathering

Unit 3: Fluid Earth

- Interactions of Solid and Fluid Earth
 - The Water Cycle
- Oceans
 - The Seafloor
 - Ocean Composition and Layering
 - Currents, Waves & Tides
 - Shorelines
 - Surface and ground waters
- Atmosphere
 - Composition and Layering of the Atmosphere
 - Clouds
 - Winds
 - Storms
 - Climate Change
- Human Interaction
 - Resources
 - Population
 - Pollution
 - Hazards