



FRANKLIN UNIVERSITY PROFICIENCY EXAM (FUPE) STUDY GUIDE

Course Title:	<i>SCIE 114- Earth Science</i>
Recommended Textbook(s):	<i>Earth Science, Tarbuck and Lutgens, 10th Edition</i>
Number & Type of Questions:	79 Total Questions: Total of 770 points 50 Multiple Choice: 4 points each: Total of 200 points 3 Matching: 4 points each: Total of 60 points 26 Short Essays: variable points: Total of 510 points
Permitted Materials:	#2 Pencil, Pen
Time Limit:	4 Hours
Minimum Passing Score:	80% (616 points)

Topics Covered:

1. Be familiar with the structure of atoms and isotopes, properties of minerals, the Rock Cycle, and the formation and characteristics of igneous, sedimentary, and metamorphic rocks. Also be familiar with the processes of mechanical and chemical weathering, types of mass wasting, and the formation and types of soils and soil horizons.
2. Be familiar with the Hydrological Cycle, movement of surface water, along with features created by moving water (depositional and erosional), and the causes of flooding (regional and flash). Understand the movement of groundwater and the mechanism of erosion and features created.
3. Be familiar with the features created by glaciers, both erosional and depositional.
4. Be familiar with earthquake terminology, P and S waves, Modified Mercalli scale and Richter scale, types of volcanoes, and associated lavas. Also be familiar with the Theory of Plate Tectonics, plate boundaries, their relationship to earthquakes and volcanoes, and the vertical layers of the Earth.
5. Be familiar with the mechanisms by which mountains are built, including faulting, folding, and dome formation. Also be familiar with the Principle of Uniformitarianism, the scientific age of the Earth, eras of geologic time, relative dating, fossils, and radioactive half-life.
6. Be familiar with ocean currents (deep and surface), gyres, tsunamis, types of ocean sediments, and volcanic island arcs. Also be familiar with marine life zones, hard stabilization and alternatives to hard stabilization.

7. Be familiar with the vertical layers of the atmosphere, the gaseous composition of the atmosphere, and the gasses possibly responsible for Global Warming and protecting the Earth from the ultraviolet radiation, and ozone depletion. Also be familiar with the three movements of the Earth, the Coriolis Effect, the reason the Earth has seasons, the significance of the solstices and the equinoxes.
8. Be familiar with the types of clouds, relative humidity, dew point temperature, environmental lapse rate, fronts, anticyclones, cyclones, hurricanes, isotherms, and isobars. Also be familiar with the factors controlling the Earth's climate.
9. Be familiar with sources of groundwater contamination.
10. Be familiar with the greenhouse effect.
11. Be familiar with astronomy; the planets, solar system formation, solar life cycle, the Milky Way, the universe and the Big Bang theory.

Suggested Study Activities:

1. Obtain a copy of the text. Skim the text and make use of the list of **Terms** and the **Review Questions** at the end of each chapter as a guide.
2. Feel free to e-mail Dr. Kody Kuehnl (lead faculty) at **kuehnlk@franklin.edu** if you have any questions about the information included in this study guide.