



**MCKENDREE**  
**UNIVERSITY**

*The mission of McKendree University is to provide a high-quality educational experience to outstanding students.*

*~Responsible Citizenship ~Engagement ~Academic Excellence ~Lifelong Learning~*

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### **ES 110 Earth and Astronomical Science (3)**

This course will cover principles of modern geology and astronomy. Topics will include the origin and structure of the universe, as well as the origin of the solar system. Other topics will include plate tectonic theory, the geological history of the earth, and the fossil records. This course counts as general education, non-lab science and nature credit. Three one-hour lectures per week.

#### **Student Learning Outcomes**

*Students will:*

1. Explain the general character of the Earth's internal and external processes; and recognize the effects and products of these processes.
2. Explain the basic steps and process that lead to the formation of planets, stars, solar systems, and galaxies.
3. Explain the tools, methods, and limitations used in the study of Earth and Astronomical Science.
4. Appreciate the immensity of astrologic and geologic time, and the nature of the changes that have occurred since the beginning of Earth's history.
5. Appreciate the vast range of size and energy found in our Universe with an understanding that our daily experience with the extents of this range are limited.
6. Understand and apply scientific inquiry to investigate and interpret the natural universe.
7. Apply the science, tools, or methods from one scientific field to another.

#### **Course Topics**

1. Geological history and systems of the Earth
2. Rocks and minerals
3. Plate tectonics
4. Oceans and atmosphere – Climate change
5. Earthquakes, volcanoes, and mountains
6. The night sky basics
7. The history of Astronomy (scientific
8. revolution)
9. The formation of the solar system
10. Planets
11. Our Sun
12. A brief introduction to galaxies and cosmology