

## One Full Survey Course and Four Course Modules

**Teaching Earth and Space Science** is set of courses designed to enhance educators' understanding and teaching of earth and space science. These courses begin with the principles of constructivist learning and exploration-based



science and work through content and methodology to give teachers a comprehensive understanding of earth and space science to encourage the learning success of students.

### Course Objectives

- Develop content knowledge about Earth as a system, landform processes, Earth's history, the Sun-Earth-Moon system, and weather and climate
- Introduce teachers to the constructivist learning model
- Provide teachers with a range of effective teaching methodologies and strategies for use in teaching science concepts
- Introduce teachers to a media-rich learning environment they can use with their students
- Provide models to illustrate ways to teach beyond the textbook.
- Guide teachers in understanding and utilizing the scientific process

*"This class has given me information and motivation. That was what I was looking for. Thank you. When I can get a projection device, I plan to use video clips to demo and explain concepts."*

—Middle School Science Teacher  
Madison, GA

# Course Syllabus: Teaching Earth and Space Science

## Full Survey Course (*Individual modules address similar objectives*)

### Session 1: Energy Transfer and Earth System Cycles

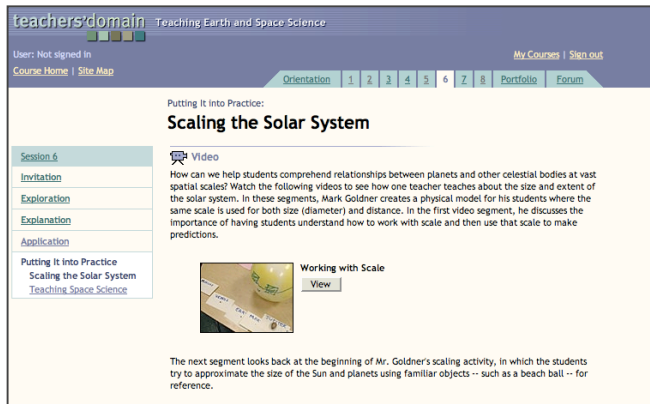
Participants look at Earth as a system and explore how this system functions to create the physical world around us.

### Session 2: Inquiry into Earth System Science

Participants examine Earth system science in the context of research about how people learn and inquiry-based instructional models.

### Session 3: Plate Tectonics and Landform Processes

Participants examine the fundamental internal and surface processes that explain Earth's ever-changing appearance, and investigate how the rock cycle connects to these processes.



### Session 4: Using Data Sets and Mapping Tools

Participants investigate how mapping data can help students explore Earth processes such as plate tectonics, and their connection to extreme Earth events such as earthquakes.

### Session 5: Earth's History

Participants look at deep time and explore how the geological record helps us understand the long history of the Earth  
Session

*Courses introduce teachers to media-rich learning environments and optimize teaching experiences with streaming video, interactive activities, videos of exemplary practice, readings, and online peer discussions.*

### 6: Broad Temporal and Spatial Scales

Participants investigate how the Sun-Earth-Moon system affects our world and examine ways to help students understand the vast scales associated with the solar system and universe.

### Session 7: Weather

Participants investigate the causes of weather and explore technological advances that help us monitor daily weather patterns.

### Session 8: Climate Change

Participants look at climate change and consider whether human activity is inducing climate change.

## Additional Course Information

- 45 contact hours
- A series of course modules on these topics and teaching strategies is also available:
  - 1st course: [Introduction to the Earth System](#)
  - 2nd course: [Structure of the Earth System](#)
  - 3rd course: [Earth in Time and Space](#)
  - 4th course: [Weather and Climate](#)

For more information about Teachers' Domain Professional Development courses, visit [www.teachersdomain.org/courseinfo](http://www.teachersdomain.org/courseinfo)