



Governing Iowa's Public Universities

In accordance with [Board of Regents policy 3.20](#), the following required information is available below:

Fall 2026

- I. Course title and number as designated in the institutional course catalog**
EARTHSCI 3300 Geomorphology
- II. A course description including learning objectives that students are expected to achieve by the end of the course**
 - A. Course Description:**
 1. Classification, description, origin, and development of landforms and their relationship to underlying structure and lithology; emphasis on geomorphic processes. Includes fluvial, glacial, periglacial, eolian, karstic, weathering, and mass-movement processes and features. Discussion, 3 periods; labs and field trips, 2 periods. Prerequisite(s): EARTHSCI 1300 (870:031) or GEOG 1210 (970:026); junior standing.
 - B. Course Level Learning Objectives:**
 1. Understand the relationships between the Earth's landforms and the processes responsible for their creation and variability over space and time.
 2. Develop the ability to estimate geomorphic rates, landform size/shape, and timing, by employing the laws of conservation (mass, momentum, etc.) through applied mathematics.
 3. Understand how geomorphic frequency-magnitudes and processes throughout Earth history, especially the Quaternary have influenced our modern landscapes.
 4. Gain an appreciation of how the Earth's Core/structural geology, the sun's energy/its uneven distribution and climatic variability work together to drive geomorphic processes and shape our landscapes.
 5. Work to understand the interrelationships between geomorphic processes and products as they relate to and are partially governed by anthropogenic activities.
 6. Gain an intermediate knowledge of applied Geographic Information Systems used to delineate and interpret the Earth's Surface.
 7. Gain an intermediate knowledge of field methods used to study fluvial and glacial systems in Iowa.
- III. A general outline of the topics to be covered throughout the course:**
 1. Earth's structure, energy, processes and time
 2. Hydrologic processes
 3. Pedologic processes



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4. Mass wasting processes
5. Fluvial processes
6. Glacial processes
7. Periglacial processes
8. Aeolian processes
9. Volcanic geomorphology
10. Coastal geomorphology
11. Tectonic geomorphology
12. Landscape Evolution
13. Geomorphology in your careers

IV. List of required textbooks, readings, and other materials necessary for the course

Key Concepts in Geomorphology by Bierman and Montgomery, 2nd Edition

V. General description of the types of assessments used in the course:

Quizzes, Exams, and labs/experiential learning