Sedimentology

Sedimentology addresses the study of modern sediments such as sand, silt, and clay, and the processes that result in their formation (erosion and weathering), transport, deposition and diagenesis.

- **Book: Introduction to Fluid Motions and Sediment Transport (Southard)**

This course introduces students to aspects of fluid dynamics relevant to transport and deposition of particulate sedimentary materials. Emphasis is on the structure of turbulent shear flows and the forces exerted by fluid motions on bed of loosed sediment. With fluid dynamics as background, the course deals with sediment movement as bed load and suspended load, and with the geometry, kinematics, and dynamics of ripple and dune bed forms.

- Front Matter
- 1: Introduction
- 2: Flow Past a Sphere I - Dimensional Analysis, Reynolds Numbers, and Froude Numbers
- 3: Flow Past a Sphere II - Stokes' Law, The Bernoulli Equation, Turbulence, Boundary Layers, Flow
Separation

- 4: Flow in Channels
- 5: Open-Channel Flow
- 6: Oscillatory Flow
- 7: Flow in Rotating Environments
- 8: Sediments, Variables, and Flumes
- 9: Threshold of Movement
- 10: Movement of Sediment by Water Flows
- 11: Movement of Sediment by the Wind
- 12: Bed Configurations Generated by Water Flows and the Wind
- 13: The Sediment Transport Rate
- 14: Mixed-Size Sediments
- 15: Deposition
- 16: Cross Stratification
- 17: Planar Stratification
- Back Matter