

Sedimentary Geology

This course is intended to provide an introduction to sedimentary geology for students in Geological Sciences, Environmental Sciences, Marine Sciences, Anthropology and other fields requiring background knowledge in sedimentary processes and products. The classroom and laboratory components will focus on Earth surface materials and processes relevant to geological applications in the related fields.

Instructor: Craig S. Feibel feibel@rci.rutgers.edu
 238 Wright Labs, Busch Campus 732 445-2721
 207 Biological Sciences Building, DC 732 932-8853
 Office Hours: MW 4:00 – 5:00 in 207 BioSci, or by arrangement.

Class Meetings: Monday & Wednesday, 2:15 – 3:55 (CHM 206, DC)

Lab: Wednesday, 10:55 - 12:15 (206 CHM, DC)

Text (required): Boggs, S. Jr. 2001. Principles of sedimentology and stratigraphy. 4th edition. Prentice Hall, Upper Saddle River, NJ. 662 pp.

Course Requirements: Students will be expected to attend class and lab regularly and to participate in discussions. Grades will include both class (60%) and laboratory (40%) components. Grades will be determined on the basis of weekly assignments (problem sets and quizzes), weekly laboratory exercises, a midterm exam and a final exam.

Tentative Schedule

(Chapter numbers for readings in parentheses)

Week 1	5 Sept	Introduction: Principles of Stratigraphy and Sedimentology (1)
Week 2	10 Sept 12 Sept	Sedimentary Particles: Weathering, Composition and Decomposition Sedimentary Particles: Mineralogy and Reactions (1, 3, 5, 6 & 7) Lab 1: Sediments and Sedimentary Rocks
Week 3	17 Sept 19 Sept	Sedimentary Textures and Rock Classification Fluid Dynamics (2 & 3) Lab 2: Sedimentary Rock Classification
Week 4	24 Sept 26 Sept	Sediment Entrainment and Deposition Sedimentary Structures and their Interpretation (2 & 4) Lab 3: Particle Size Analysis
Week 5	1 Oct 3 Oct	Facies Models and Architectural Analysis Lacustrine Systems (8 & 12) Lab 4: Fluid Flow, Hydrodynamics and Bedforms
Week 6	8 Oct 10 Oct	Wetlands Systems Fluvial Systems (8)

Lab 5: Wet Site Sampling and Core Analysis

Week 7	15 Oct 17 Oct	Soils and Paleosols Eolian and Glacial Systems (1 & 8) Lab 6: Soil Profiles
Week 8	22 Oct 24 Oct	Marginal Marine Systems Deep Marine and Carbonate Systems (9, 10 & 11) Lab 7: Soil Sampling and Description
Week 9	29 Oct 31 Oct	Mid-Term Exam Nature of the Stratigraphic Record and Geological Time (12) No Lab This Week
Week 10	5 Nov 7 Nov	Lithostratigraphy Geochronology and Magnetostratigraphy (12, 13 & 15) Lab 8: Geological Sections FT
Week 11	12 Nov 14 Nov	Biostratigraphy Borehole Stratigraphy: Logs (13 & 14) Lab 9: Biostratigraphy
Week 12	19 Nov 21 Nov	Seismic and Sequence Stratigraphy NO CLASS – Thanksgiving Schedule No Lab This Week
Week 13	26 Nov 28 Nov	Phanerozoic Stratigraphy and Sedimentation (13, 15 & 16) Integrated Stratigraphy and Sedimentology Lab 10: Well-log Interpretation
Week 14	3 Dec 5 Dec	Environmental Applications I Environmental Applications II Lab 11: Correlation and Fence Diagrams
Week 15	10 Dec 12 Dec	Geoarchaeological Applications Summary and Review Lab 12: Site Interpretation

Friday Dec 21 8:00 AM - Final Exam