

| | | | | |
|----------------------------|--|--|--|---|
| SEDIMENTARY GEOLOGY | Dr. Ken Miller (5-3622) Room 246 Wright Labs kgm@eps.rutgers.edu | Dr. James Browning (5-2044) Room 250 jvb@eps.rutgers.edu | Required Text: Prin. of Sedimentology and Stratigraphy Boggs (any version) | T.A.: Anya Hess Room 243C anya.hess@rutgers.edu |
|----------------------------|--|--|--|---|

| LECTURE | DATE | LECTURE TOPIC <small>Wright Labs Rm. 231 Tues. and Thu. 1:40-3:00</small> | READINGS | LAB. WEEK | LABORATORY TOPIC <small>Wright Labs Room 339</small> | Field trips |
|---------|--------|--|-----------|--------------|---|---|
| 1 | Sep 3 | Introduction and Earth Materials & NJ provinces | kgm & jvb | | | |
| 2 | Sep 5 | Physical Stratigraphy | kgm | Ch. 12 | 6-Sep | Earth Materials |
| 3 | Sep 10 | Weathering and Soils | jvb | Ch. 1 | | |
| 4 | Sep 12 | Grain characteristics: size, shape, composition | jvb | Ch. 3 | 13-Sep | Coarse grained sediments Island Beach trip Sat. 9/14 9-5 |
| 5 | Sep 17 | Rock classification (Siliciclastic) | jvb | Ch. 5 | | |
| 6 | Sep 19 | Transport and Deposition of Siliciclastic Sediment | jvb | Ch. 2 | 20-Sep | Clastic rocks / fine grained sediment demo |
| 7 | Sep 24 | Sedimentary Structures and Bedding | ah | Ch. 4 | | |
| 8 | Sep 26 | Diagenesis and Provenance | jvb | Ch. 5 | 27-Sep | Sedimentary structures |
| | Oct 1 | Hour Exam I | | | | |
| 9 | Oct 3 | Facies Models | kgm | Ch. 12 | 4-Oct | Field trip instead of lab 9-5 PM Coastal Plain trip Fri. 10/4 9-5 |
| 10 | Oct 8 | Groundwater and Rivers | jvb | Ch 8.1, 8.2 | | Core description and |
| 11 | Oct 10 | Lakes & Introduction to the Newark Basin | kgm & jvb | Ch. 8.4 | 11-Oct | Newark Basin outcrop Newark Basin trip Sat. 10/12 8-5 |
| 12 | Oct 15 | Deserts and Glaciers | jvb | Ch. 8.3, 8.5 | | |
| 13 | Oct 17 | Chemical Sedimentary Rocks | jvb | Ch. 6 | 18-Oct | Chemical Sedimentary Rocks |
| 14 | Oct 22 | Marginal Marine Environments | kgm | Ch. 9 | | |
| 15 | Oct 24 | Marginal Marine Environments | kgm | Ch. 9 | 25-Oct | Facies correlation Valley & Ridge trip Sun. 10/27 8-5 |
| 16 | Oct 29 | Shelf, Slope, Marine Environments | kgm | Ch. 10 | | |
| 17 | Oct 31 | Deep Marine Environments | kgm | Ch. 10 | 1-Nov | Core Repository coastal plain cores |
| | Nov 5 | Hour Exam II | | | | |
| 18 | Nov 7 | Biostratigraphy | jvb | Ch. 14 | 8-Nov | Biostratigraphy |
| 19 | Nov 12 | Geophysical Logs and Magnetics | kgm | | | |
| 20 | Nov 14 | Geochronology | jvb | Ch. 13.4 | 15-Nov | Gamma Logs |
| 21 | Nov 19 | Magnetics and Timescales | kgm | Ch. 15 | | |
| 22 | Nov 21 | Carbon, Oxygen, Strontium Isotopes | kgm | | 22-Nov | Magnetics and Isotopes |
| 23 | Nov 26 | Climate and Milankovitch | kgm | | | |
| | Nov 28 | Thanksgiving – NO CLASS | | | 29-Nov | Black Friday, no class |
| 24 | Dec 3 | Seismics and Sequence Stratigraphy | kgm | Ch. 13 | | |
| 25 | Dec 5 | Sequence Stratigraphy and Eustasy | kgm | Ch. 13 | 6-Dec | Seismics and Mapping |
| 26 | Dec 10 | Basin Evolution | jvb | Ch. 16 | | |

FINAL EXAM: December 16, 2019; 8-11 PM

Final course grade: Hour Exam 1 (20%) + Hour Exam 2 (20%) + Final Exam (25%) + Homework(10%) + Lab (25%); Note: Final Exam is NOT cumulative

There will be 4 all day field trips 14 Sept. (Sat., Island Beach), Oct. 4 (Fri., Coastal Plain), 12 Oct. (Sat., Newark Basin), and 27 Oct. (Sun., Valley and Ridge).

The field trips are a critical component of the course; if you cannot attend for any reason, submit a 5-7 page term paper (1.5 line spacing, 2000-2500 words, 3-7 figures, 3-5 references).

Laboratory grade: 60% Labs (12 @ 5% each), 24% Field Trips (4 @ 6% each), and 16% Quizzes (2 @ 5% and 1 @ 6%)