

## GEOLOGY 510-001 SEDIMENTARY ENVIRONMENTS (PART I)

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<b>Class Hours:</b>	MWF 9:00–9:50 a.m.
<b>Classroom:</b>	101 DeLoach
<b>Office Hours:</b>	MWF 10:00–12:00 & 1:00–2:20; or by appointment.
<b>Attendance:</b>	Class attendance is required. Call or e-mail if sick or an emergency arises.
<b>Grading:</b>	Part I (6-Jan to 26-Feb) = 50%; Part II (Dr. Kelley: 1-Mar to 26-Apr) = 50% Part I: Class participation, 10%; Class Reports, 15%; Midterm Exam 25%
<b>Honor Code</b>	The University's Honor Code is enforced in this class. If you are not familiar with the Code, complete details are in the current Student Handbook.
<b>Text:</b>	Davis , 1983 (see below) and readings from journal articles and reference texts below. Used copies of Davis can be obtained from AbeBooks.com: <a href="http://www.abebooks.com/servlet/SearchResults?an=Davis&amp;sts=t&amp;tn=depositional+systems&amp;x=60&amp;y=5">http://www.abebooks.com/servlet/SearchResults?an=Davis&amp;sts=t&amp;tn=depositional+systems&amp;x=60&amp;y=5</a>

### General Reference Books [highlighted books are on 4-hour reserve in Randall Library]

- Berg, R. M., 1986, Reservoir sandstones: Englewood Cliffs, N.J., Prentice-Hall, 481 p. [QE471.15.S25 B47 19]
- Bouma, A. H., Normark, W. R., and N. E. Barnes, 1985, Submarine fans and related turbidite systems: New York, Springer-Verlag, 351 p. [GC87.6.S92 S82 1985]
- Bush, D. A., 1974, Stratigraphic traps in sandstones - exploration techniques: American Association of Petroleum Geologists Memoir 21, 174 p. [QE651 .B83]
- Collinson, J. D. and D. B. Thompson**, 1982, Sedimentary structures: Boston, Allen and Unwin, 194 p. [QE472 .C64 1989]
- Davis, R. A., Jr.**, 1983, Depositional systems, a genetic approach to sedimentary geology: Englewood Cliffs, N.J., Prentice-Hall, 669 p. [QE581 .D38 1983]
- Conybeare, C. E. B. and K. A. W. Crook**, 1968, Manual of sedimentary structures: Canberra, Australian Bureau of Mineral Resources, Geology and Geophysics Bulletin 102, 327 p. [QE472 .C6]
- Galloway, W. E., 1983, Terrigenous clastic depositional systems: applications to petroleum, coal, and uranium exploration: New York, Springer-Verlag, 423 p. [QE571 .G27 1983]
- Lindholm, R. C., 1987, A practical approach to sedimentology: London, Allen & Unwin, 276 p. [QE471 .L534 1987]
- Miall, A. D., 2000, Principles of sedimentary basin analysis, 3<sup>rd</sup> ed.: New York, Springer-Verlag, 616 p. [QE615 .M3 2000]
- Newton, C. R., and Laporte, L. F., 1989, Ancient environments, 3<sup>rd</sup> ed.: Englewood Cliffs, N.J., Prentice-Hall, 178 p. [QH542 .L3]
- Pettijohn, F. J. and P. E. Potter**, 1964, Atlas and glossary of sedimentary structures: New York, Springer-Verlag, 370 p. [QE471 .P44]
- Pettijohn, F. J., Potter, P.E., and R. Siever, 1987, Sand and sandstone, 2<sup>nd</sup> ed.: New York, Springer-Verlag, 553 p. [QE471.2 .P47 1987]
- Potter, P. E., Maynard, J. B., and P. J. Depetris**, 2005, Mud and mudstones: New York, Springer, 297 p. [QE471.15.M83 P68]
- Prothero, D.R. and Schwab, F., 2004, Sedimentary Geology, 2nd ed., New York, W.H. Freeman and Company, 557 p.
- Reineck, H.-E. and I. B. Singh**, 1973, Depositional sedimentary environments; with reference to terrigenous clastics: New York, Springer-Verlag, 439 p. [QE471 .R425]

- Ricci Lucchi, F.**, 1995, *Sedimentographica: photographic atlas of sedimentary structures*, 2<sup>nd</sup> ed.: New York, Columbia University Press, 255 p. [QE472 .R5313 1995]
- Rigby, J. K., and Hamblin, W. K., eds., 1972, *Recognition of ancient sedimentary environments*: Tulsa, Society of Economic Paleontologists and Mineralogists Special Publication 16, 340 p. [QE471 .R39]
- Scholle, P. A., and Spearing, D.**, 1982, *Sandstone depositional environments*: Tulsa, Okla., American Association of Petroleum Geologists, 410 p. [QE571 .S2 1982]
- Selley, R. C., 1970, *Ancient sedimentary environments: a brief survey*: Ithaca, N.Y., Cornell University Press, 237 p. [QE471 .S42]
- Selley, R. C., 1982, *An introduction to sedimentology*: London, Academic Press, 417 p. [QE471 .S425 1982]
- Selley, R. C., 1988, *Applied sedimentology*: New York, Academic Press, 446 p. [QE471 .S425 1988]
- Shelton, J. W., 1973, *Models of sand and sandstone deposits: a methodology for determining sand genesis and trend*: Oklahoma Geological Survey Bulletin 118, 122 p.
- Stow, D. A. V.**, 2005, *Sedimentary rocks in the field, a color guide*: Burlington, MA, Elsevier Academic Press, 320 p. [QE471 .S76 2005]
- Tucker, M. E., 2003, *Sedimentary rocks in the field*: Hoboken, N.J., John Wiley & Sons, Inc., 234 p.
- Walker, R. G., ed.**, 1986, *Facies models*, 2nd ed.: Toronto, Geological Association of Canada, 317 p. [QE651 .F3 1986]

**Reading Assignments:** Course reading assignments must be read before class.

Week	Tentative Topic	Text Readings
Jan 6	Introduction Terrigenous Sedimentary Rocks	Notes on Gly510 website
Jan 11	Sedimentary Structures	Collinson & Thompson, 1982 Pettijohn & Potter, 1964 Ricci Lucchi, 1995 Stow, 2005
Jan 20	Facies and Facies Models	Walker, 1986
Jan 25	Fluvial & Alluvial Fan Systems	Davis, Chp. 8
Feb 1	Lacustrine Systems; Desert Systems	Davis, Chp. 5; Davis, Chp. 6
Feb 8	Deltaic Systems; Intertidal Systems	Davis, Chp. 9; Davis, Chp. 10
Feb 15	Estuarine Systems; Barrier Island Systems	Davis, Chp. 11; Davis, Chp. 12
Feb 22	Terrigenous Shelves and Shallow Seas	Davis, Chp. 13