PRINCIPIA COLLEGE Professor: Dr. Janis Treworgy

**Sedimentary Geology 330 – Course Schedule, Spring 2014**

GEOL 330, 4 semester hours Prerequisites: GEOL 111 and GEOL 242

Science Center Room 107 TuTh 1:30-4:10pm

Textbook: *Sedimentary Geology*, 2nd edition, 2003, by Donald R. Prothero and Fred Schwab

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**This schedule is subject to change with adequate notice.**

**Homework is due the next class session unless otherwise stated.**

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| Wk 1Day 11/21**HW**Day 2**HW**Wk 2Day 31/28**HW**Day 4**HW**WK 3 Day 52/4**HW**Day 6**HW**WK 4Day 72/11**HW**Day 8**HW** WK 5Day 9**HW**2/18Day 10SAT.WK 6 Day 11**HW**2/25Day 12**HW**WK 7Day 133/4**HW**Day 14WK 8WK 9 Day 15**HW**3/18Day 16**HW**WK 10 Day 173/25**HW**Day 18**HW**WK 11 Day 194/1**HW**Day 20**HW** WK 12 Day 21 4/8**HW** Day 22 **HW**WK 13Day 234/15**HW** Day 24**HW**WK 14Day 254/22**HW**Day 26**HW**WK 15 Day 27**HW**Day 28**HW**WK 16Mon. | **I Sedimentary Processes and Products**Pre-test of basic concepts from GEOL 111 and GEOL 242Introduction to Sedimentary Rocks – chp. 1; Describing a Sedimentary RockLab - sands***Read chp. 1 Introduction to Sedimentary Rocks (15p)*** ***Read chp. 2 Weathering and Soils (12p)***Weathering and Soils – chp. 2Clastic Transport and Fluid Flow – chp. 3Lab - sands***Type answers to questions 1-3 for 2 assigned sands on Sands Lab******Review chp. 3 Clastic Transport and Fluid Flow (24p)******Read chp. 4 Sedimentary Structures (20p) – as you read, answer all questions and write explanations for the Sedimentary Structures Lab where identification is not required***Sedimentary Structures – chp. 4Lab – sedimentary structures***Read chp. 5b Sandstones (p. 76-97)*****II Siliciclastic Sediments and Environments**Sandstone – chp. 5b Lab – finish sedimentary structuresLab – petrography of sands and sandstones I***Read chp. 5a Conglomerate and Breccia (p. 66-76)******Read chp. 6 Mudrocks (13p)***Conglomerate and Breccia – chp. 5aMudrocks – chp. 6Lab – petrography of sands and sandstones II***Read chp. 7 Siliciclastic Diagenesis (12p)******Read chp. 8a Terrestrial Sedimentary Environments (p. 127-144 to Lacustrine Deposits)***Siliciclastic Diagenesis – chp. 7Lab – petrography of sands and sandstones III***Read chp. 8b Terrestrial Sedimentary Environments (p. 144-158)******Read Box 15.1 p. 334-338 Measuring & Describing Stratigraphic Sections******Take-Home Exam 1*** *– due Thursday*Terrestrial Sedimentary Environments – chp. 8Measuring & Describing Stratigraphic Sections in the Field***Take-Home Exam 1*** *– due Thursday*Core lab I – describe Principia Cores #1 and #2***Read chp. 9 Coastal Environments (22p)***Coastal Environments – chp. 9Review siliciclastic thin sections***Take-Home Exam 2*** *– due Tuesday**of**Week 6*Field Work I – Measure & describe Jerseyville Hollow stratigraphic section, Hwy 100, Grafton ***Saturday* – all day Field Trip to Jackson County, IL, February 22nd** Field Work II–Measure & describe Jerseyville Hollow stratigraphic section, Hwy 100, Grafton ***Read chp. 10 Clastic Marine and Pelagic Environments (25p)***Clastic Marine and Pelagic Environments – chp. 10Core lab II***Read chp. 11 Carbonate Rocks (p. 212-234)*****III Biogenic, Chemical, and Other Nonsiliciclastic Sedimentary Rocks**Carbonate Rocks – chp. 11Lab – review fossil IDLab – petrography of carbonates I***Read chp. 11b Carbonate Rocks (p. 226-234)***Field Work III–Measure & describe Jerseyville Hollow stratigraphic section, Hwy 100, Grafton **\*\*\*\*\*\*\*\*\*\*\*\*\*\* WEEK 8 SPRING BREAK \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***Field Work IV–finish***Read chp. 12a Carbonate Environments (p.236-242 to Subtidal Shelf Carbonates)***Carbonate Environments – chp. 12aLab – petrography of carbonates II***Read chp. 12b Carbonate Environments (p.242-261)******Work on carbonate thin sections lab – describe #4-9***Carbonate Environments – chp. 12bLab – petrography of carbonates III; finish describing t.s.; discuss dep. env. & diagenesis***Work on carbonate thin sections lab – answer questions for #3* (review chp. 12), due Tu.*****Read chp. 15a Lithostratigraphy (p. 302-322)*****IV Stratigraphy**Lithostratigraphy – chp. 15aLab – draw graphic log of Jerseyville Hollow neatly on graph paper or in a draw program Lab – describe thin sections from Principia coresLab – correlations***Read chp. 15b Lithostratigraphy (p. 322-339)*****Finish carbonate lab; answer questions for #5, 6, 8, 9**Lithostratigraphy – chp. 15bDiscuss the Stratigraphic CodeCore Lab II – finish describing Principia cores & cf. to t.s. descriptions; draw graphic logs***Read chp. 16 Biostratigraphy (14p)******Read chp. 17a Geophysical and Chemostratigraphic Correlation (p. 356-361)***Biostratigraphy – chp. 16Geophysical and Chemostratigraphic Correlation – chp. 17aLab –correlate Principia cores to Jerseyville Hollow Section***Take-Home Exam 3*** *– thin section descriptions due Tues. Wk. 12; questions due Tues. Wk. 13* Lab – interpret wireline (geophysical) logsLab – draw cross sections with wireline logs***Read chp. 19a Sedimentary Rocks in Time and Space (p. 423-440)***Sedimentary Rocks in Time and Space – chp. 19aLab – structure & other maps and cross sections***Read chp. 19b Sedimentary Rocks in Time and Space (p. 440-459)******Mapping/Correlation assignment***Sedimentary Rocks in Time and Space – chp. 19bLab – structure & other maps and cross sections***Read chp. 17b Geophysical and Chemostratigraphic Correlation (p.361-376)******Read Sedimentary Record 10-1 article and answer questions***Geophysical and Chemostratigraphic Correlation – chp. 17bWork on Poster***Read chp. 13 Other Biogenic Sedimentary Rocks (11p)******Mapping/Correlation assignment***Other Biogenic Sedimentary Rocks – chp. 13Lab – structure & other maps and cross sections***Read chp. 14 Chemical and Nonepiclastic Sedimentary Rocks (22p)******Mapping/Correlation assignment***Chemical and Nonepiclastic Sedimentary Rocks – chp. 14Lab – poster of correlation of outcrop and core***Mapping/Correlation assignment***Lab – structure & other maps and cross sectionsPoster Session – **Monday evening 4/28*****Review for Exam 4***Review in class for Exam 4***Take-Home Portion of Exam 4*** *– due at final’s time*FINAL EXAM – **In-Class Portion of Exam 4** 1-3pm |