

**GEOSC 479 - Advanced Stratigraphy  
Fall 2006**

[http://hydro.geosc.psu.edu/Sed\\_html/strat\\_class.html](http://hydro.geosc.psu.edu/Sed_html/strat_class.html)

**DRAFT, SUBJECT TO CHANGE**

**Instructors:** Peter B. Flemings  
307 Deike Building  
Office: 865-2309  
flemings@geosc.psu.edu  
office hours: by appt.

Mark Patzkowsky  
539 Deike Building  
Office: 863-1959  
brachio@geosc.psu.edu  
office hours: by appt.

**Class:** Monday and Wednesday  
9:05 – 11:00 AM, 124 Walker  
**Lab:** Monday  
3:35 – 5:30 PM, 341 Deike  
**Field Trip** to Book Cliffs, Utah  
9/28-10/2

**Textbook:** Coe, A. L., (ed.) *The Sedimentary Record of Sea-level Change, 2003*, The Open University and Cambridge University Press, 288 p. It is at the bookstore or at Amazon.

**Books on reserve in EMS Library:**

- (1) *Siliciclastic Sequence Stratigraphy in Well Logs, Cores, and Outcrops* by J.C. Van Wagoner, R.M. Mitchum, K.M. Campion, and V.D. Rahmanian
- (2) *Ancient Sedimentary Environments* by R.C. Selley
- (3) *Sequence Stratigraphy* by D. Emery and K.J. Myers
- (4) *The Sedimentary Record of Sea-Level Change* by Angela L. Coe
- (5) *Sea Level Changes: An Integrated Approach* by Cheryl K. Wilgus, Bruce S. Hastings, Christopher G. St. C. Kendall, Henry W. Posamentier, Charles A. Ross, John C. Van Wagoner

---

<b>Grading Policy:</b>	<b>Exams</b>	<b>20%</b>
	<b>Mid Term Project</b>	<b>30%</b>
	<b>Homework/Labs</b>	<b>20%</b>
	<b>Final Project</b>	<b>30%</b>

---

**Week 1**

Lect. 1    W    9/6            Course Overview: Fundamentals of Carbonates (9:00-11:00)  
              F    9/8            Carbonate Outcrop (to be arranged)

**Week 2**

              M    9/11            Carbonate Dep. Env.    (MP out of town)  
              M    9/11            Carbonate Outcrop    (MP out of town)  
Lect. 2    W    9/13            Carbonate Cycles      (MP out of town)  
              F    9/15            *Measured Section and Write-UP due*

**Week 3**

Lect. 3 M 9/18 Fisher Plots and Accomodation  
 Lab M 9/18 Siliciclastic Outcrop  
 Lect. 4 W 9/20 Accomodation (PBF& MP)

**Week 4**

Lect. 5 M 9/25 Cretaceous Western Interior Overview (PBF&MP)  
*Fisher Plot Due*  
 Lab M 9/25 Siliciclastic Outcrop  
 Lect. 6 W 9/27 Book Cliffs Field Trip Overview  
*Siliciclastics Due*

**Field Trip to Book Cliffs****9/28 (early am) – 10/2 (late pm)****Week 5**

Lect. 7 M 10/2 No class  
 Lab M 10/2 No Lab  
 Lect. 8 W 10/4 Summary of Field Project Expectations (MP and PBF)

**Week 6**

Lect. 9 M 10/9 No Lecture-MP in class to answer questions (PBF out of town)  
 Lab M 10/9 No Lab (PBF out of town)  
 Lect. 10 W 10/11 No Lecture-MP in class to answer questions (PBF out of town)

**Week 7**

Lect. 11 M 10/16 2D Strat-Subaerial Uncon & Condensed Sections  
*Book Cliffs Sections and Depositional Envs. due*  
 Lab M 10/16 Two Dimensional Stratigraphy Model-(hand drawn)  
 Lect. 12 W 10/18 2D Stratigraphy and Accomodation

**Week 8**

Lect. 13 M 10/23 Controls on Accomodation 1D  
 (MP out of town)  
*2D Hand Drawn Strat model due*  
 Lab M 10/23 Strata Modeling (MP out of town)  
 Lect. 14 W 10/25 Controls on Accomodation 2D (MP out of town)

**Week 9**

Lect. 15 M 10/30 Factors controlling the distribution and abundance of fossil species  
 (PBF out of town)  
 Lab M 10/30 Graphic Correlation (PBF out of town)  
 Lect. 16 W 11/1 Species ranges and stratigraphic architecture (PBF out of town)  
 F 11/3 BOOK CLIFFS PROJECT DUE AT 4:30pm

**Week 10**

Lect. 17	M	11/6	Paleobiology and Sequence Architecture <i>Book Cliffs Projects due</i>
Lab	M	11/6	Seismic Lab #2
Lect. 18	W	11/8	Final Project Discussion and Plan

**Week 11**

Lect. 19	M	11/13	Eustatic curve
Lab	M	11/13	Project Week 1
Lect. 20	W	11/15	Baltimore Canyon Eustatic Curve/Ridge Volume arguments

**Week 12**

Lect. 21	M	11/20	Paleobiology in the ice house world
Lab	M	11/20	Project Week 2
Lect. 22	W	11/22	No Class--Thanksgiving

**Week 13**

Lect. 23	M	11/27	Paleobiology in the ice hous world Project Lecture
Lab	M	11/27	Project Lecture
Lect. 24	W	11/29	Exam -2D Stratigraphy

**Week 14 LAST WEEK**

Lect. 25	M	12/4	Project Lecture
Lab	M	12/4	Project Week 4
Lect. 26	W	12/6	Final Project Presentation

**Week 15 NO CLASS**

Lect. 27	M	12/11	No Class (PBF out of town)
Lab	M	12/11	No Class (PBF out of town)
Lect. 28	W	12/13	Final Project Write-up Due (PBF out of town)

**Week 16 NO FINAL**

## Statement of Academic Integrity:

Academic integrity is the pursuit of scholarly activity in an open, honest and responsible manner. Academic integrity is a basic guiding principle for all academic activity in the College, and all members of the University are expected to act in accordance with this principle. Consistent with this expectation, all students should act with personal integrity, respect other students' dignity, rights and property, and help create and maintain an environment in which all can succeed through the fruits of their efforts.

Academic integrity includes a commitment not to engage in or tolerate acts of falsification, misrepresentation, or deception. Such acts of dishonesty violate the fundamental ethical principles of the EMS community and compromise the worth of work completed by others.

With regard to the above statement and how it relates to this course, if it is discovered that you have violated the above principles on a certain assignment or examination, you will receive a score of zero on the paper in which the violation occurred. A second incident would result in an F grade (failure) in the course.