

Welcome!

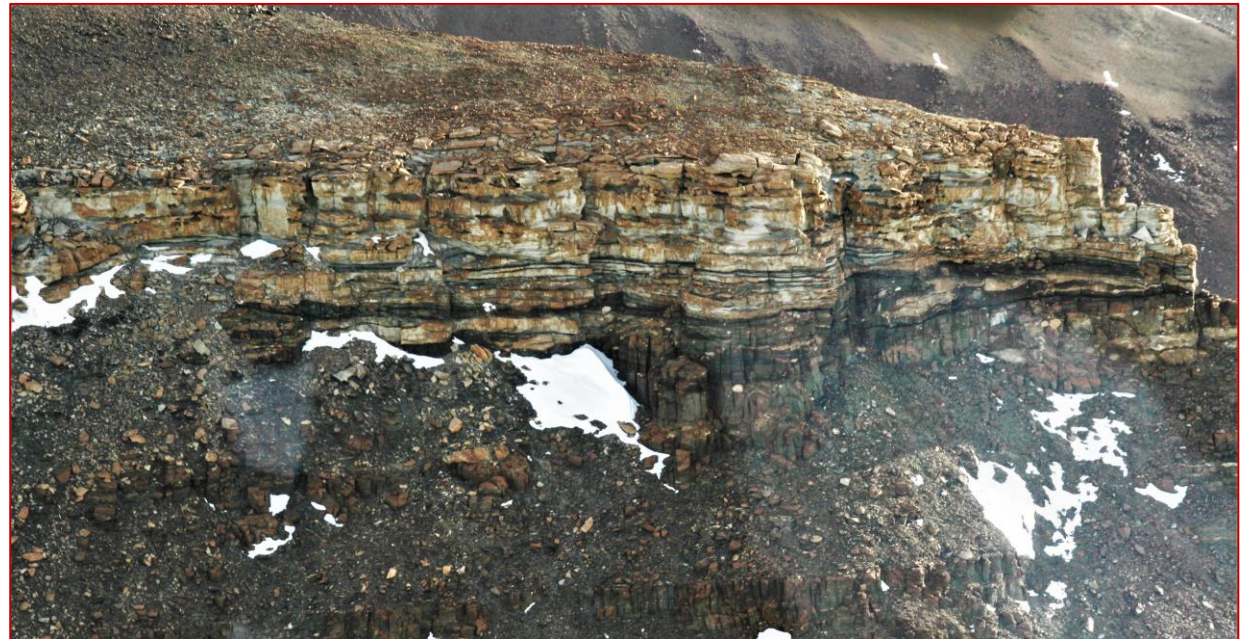
GEOSCI 511: STRATIGRAPHY AND SEDIMENTATION

SPRING 2020

LECTURE 1.2 (WEEK 1, LECTURE DAY 2)

Today's Agenda

- Introductions
- Questionnaire
- Go Over Syllabus
- Knowledge Survey
- Class Discussion



Outcrop of interbedded diamictites and sands overlain by amalgamated channel sands in Shackleton Glacier Region of Antarctica



Introductions

Syllabus

When and Where

Course Syllabus

GEO SCI 511: **Stratigraphy and Sedimentation** (U/G)

University of Wisconsin – Milwaukee • Spring 2020 • 4 credits

Lecture:	Monday and Wednesday	9:00 am – 10:15 am	Lapham Hall 275
Labs:	Monday or Wednesday	12:00 pm – 2:50 pm	Lapham Hall 275

Prerequisites: junior status; GEO SCI 102: Principles of Historical Geology



Interrogating bedforms
in an aggrading delta
sequence, Neuquén
Basin, Argentina

Syllabus

Office Hours



The
Andes!
Patagonia,
Argentina

LIBBY IVES INSTRUCTOR

- **Lapham Hall 356**
- Monday and Wednesday
3:00 pm – 4:00 pm
- Thursdays 10:00 am –
11:00 am
- Whenever my office door
is open
- By appointment

EDUARDO TA – MONDAY LAB

- **Lapham Hall 242**
- Monday 3:00 – 4:00 pm
- Wednesday 11:00 am –
12:00 pm

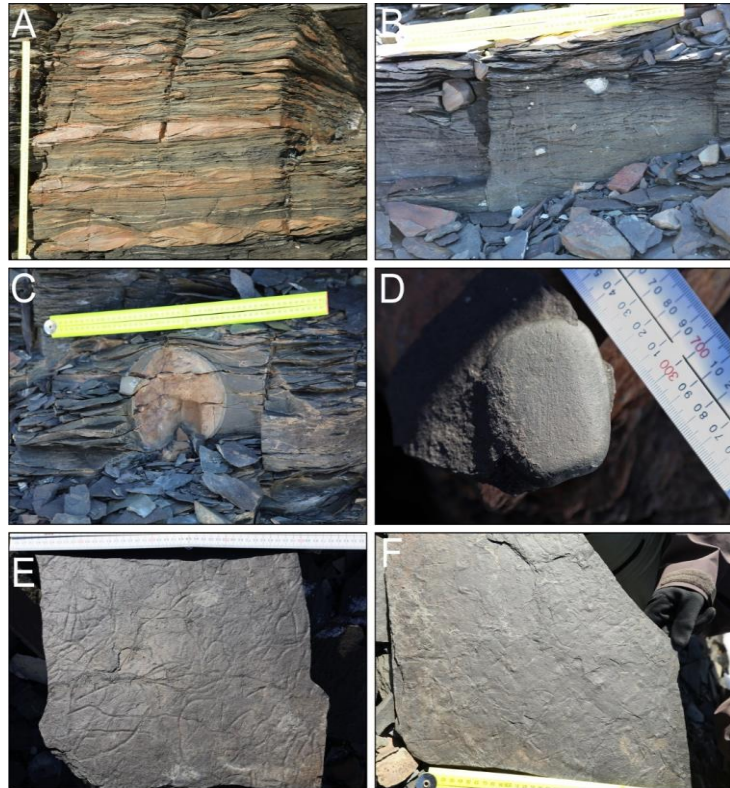
SCOTT TA – WEDNESDAY LAB

- **Lapham Hall 242**
- Tuesday 1:30 – 2:30 pm
- Thursday 1:00 – 2:00 pm

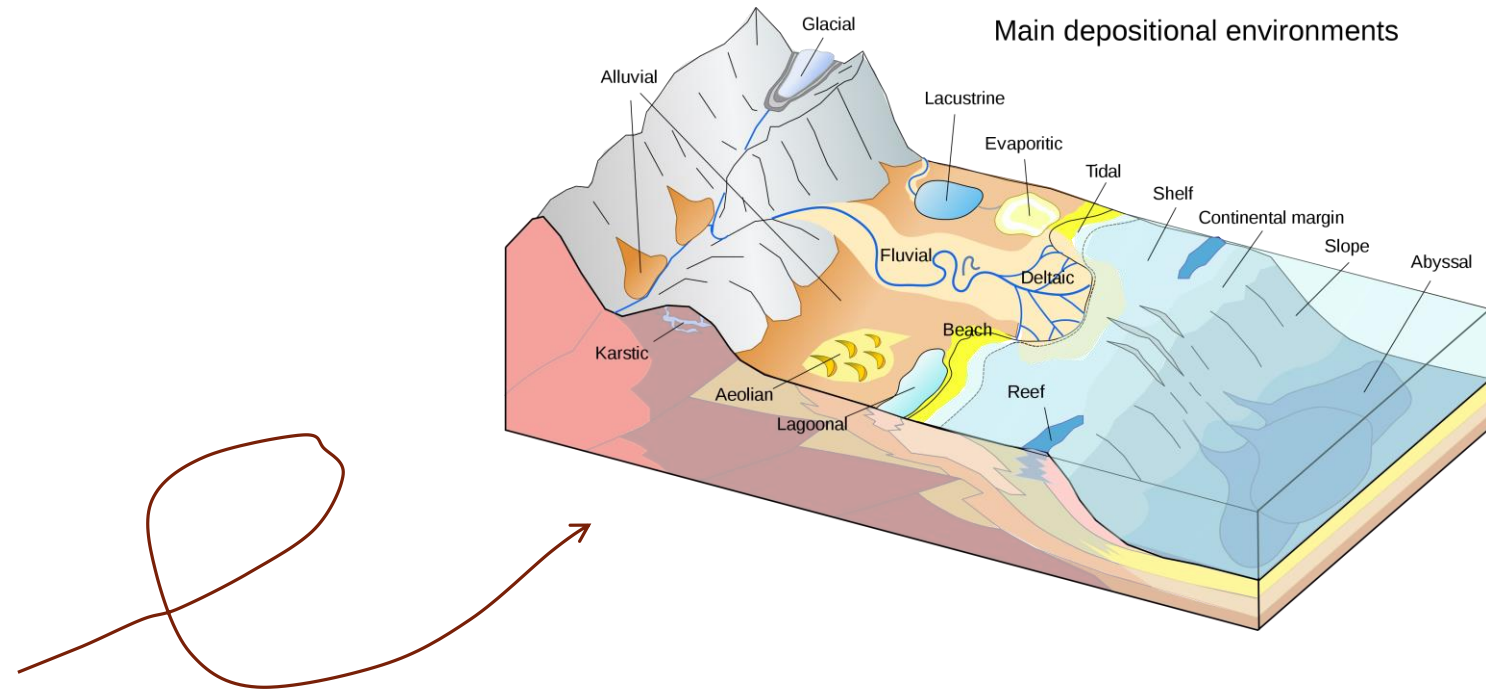
Syllabus

Course Goals

Sedimentary Rock (or sediment) → Depositional Environment and/or Geologic Context



Facies from the Mackellar Fm, Transantarctic Mountains



Syllabus

Course Schedule

- Small Scale → Large Scale

(this is not the final version of the syllabus. See the printed one in class or on Canvas)

Course Schedule

Subject to change. Changes will be announced in class and via CANVAS in a timely manner.

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3 Feb 2 - 8	M: Origins of sediments - carbonate W: Fluid Flow	Week 3 Due February 5, 9am	2. Fluid Transport and Sorting	Lab 1
4 Feb 9 - 15	M: Sedimentary Structures W: Sedimentary Structures	-----	3. Siliciclastic Structures	Lab 2
5 Feb 16 - 22	M: Source to Sink & Sediment Provenance W: Diagenesis 1	Week 5 Due February 19, 9am	4. Siliciclastic Classifications	Lab 3
6 Feb 23 - 29	M: Diagenesis 2 W: Catch-Up Lecture and Exam Review	Week 6 Due February 26, 9am	5. Carbonate Textures & Classifications	Lab 4
7 March 1 - 7	M: Exam 1 (Week 1 - 6 Topics) W: Intro Depositional Systems, Facies, and Walther's Law	Week 7 (Grad only) Due March 4, 9am	6. Carbonate Structures and Cements	Lab 5
8 March 8 - 14	M: Terrestrial Depositional Environments 1 W: Terrestrial Depositional Environments 2	Week 8 Due March 11, 9am	7. Concept Sketches and Graphical Communication	Lab 6 & 7 (in class)
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12 April 12 - 18 Field Trip	M: Exam 2 (Week 7 - 11 Topics) W: The "Stratigraphies": Bio-, litho-, chemo-, magneto-, etc.	-----	Field Trip Prep	Lab 9
13 April 19 - 25	M: Sequence Stratigraphy 1 W: Sequence Stratigraphy 2	Week 13 Due April 15, 9am	10. Delta Box Models	Field Trip Assignment Due April 24
14 April 26 - May 2 SEPM	M: Sedimentary Basins W: Interdisciplinary Topics in Sed/Strat		11. Seismic Stratigraphy	Lab 10
15 May 3 - May 9	M: Practical Applications of Sed/Strat W: Assignment of Final Project	-----	Class Time to Work on Final Project	Lab 11
EXAM WEEK May 10 - 16		FINAL PROJECT DUE: Wednesday, May 13, 2020, End of Day		

Syllabus

Course Schedule

- Lecture Part 1:
**Building Blocks/Parts
of a Sedimentary
Rock**

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Syllabus

Course Schedule

- Lab Part 1: How to describe a sedimentary rock

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Syllabus

Course Schedule

- Lecture Part 2:
Depositional Environments

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Syllabus

Course Schedule

- Lab Part 2:
**Depositional
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Syllabus

Course Schedule

- Lecture Part 3: Intro to Stratigraphy and Practical Applications

Course Schedule				
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EXAM WEEK May 10 - 16	FINAL PROJECT DUE: Wednesday, May 13, 2020, End of Day			

Syllabus

Course Schedule

- Lab Part 3:
Stratigraphy

Course Schedule				
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Syllabus

Course Schedule

- Other columns and due dates for lab a reading assignments

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Syllabus

Other important dates

Field Trip will be May 2 – 3 (Saturday and Sunday)



Tidal succession, Neuquén Basin, Argentina



Holocene Glacio-fluvial and Marine Sediments, Nordauslandet, Svalbard



Buried MIS2 forest and paleosol, Two Rivers, WI

Syllabus

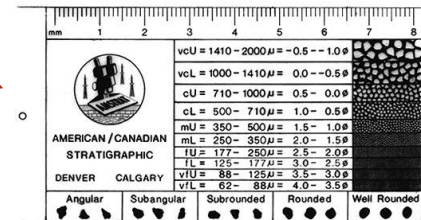
Recommended Materials

- **Lecture:**

- Pen or pencil...
- No text book required – reading online

- **Lab:**

- **10x hand lens or “loupe”** (American Sciences and Surplus, Forestry Suppliers Inc., Amazon...) **\$5 - \$50**
- **Grain-Size Comparator/Card; Sand Gauge; Geotechnical Gauge**(cgs mule.com; usgeosupply.com; www.shop-esp.com; Forestry Suppliers Ince) **\$2 - \$25**
- **Pencils w/ good erasers**
- **Colored Pencils**



Syllabus

Grading Philosophy

- Our goal is to align your grade with the level at which you understand the material.

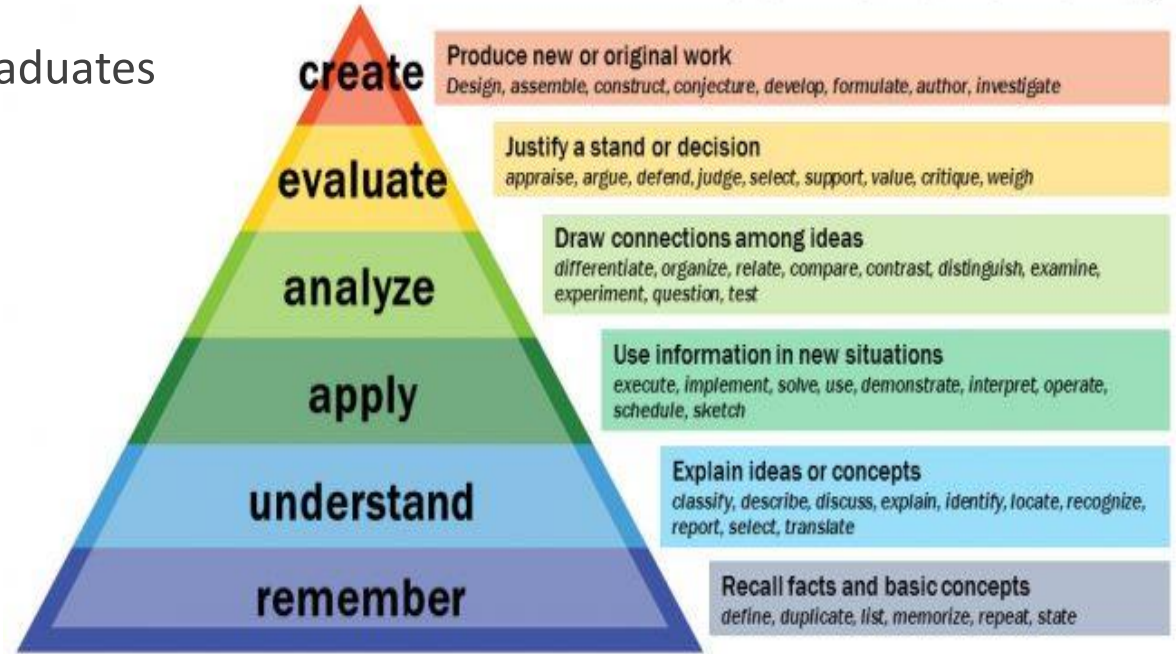
Graduate Students

Letter	
A	A
	A-
B	B+
	B
	B-
C	C+
	C
	C-
D	D+
	D
	D-
F	F

Undergraduates

Letter	
A	A
	A-
	B+
B	B
	B-
	C+
C	C
	C-
	D+
D	D
	D-
	F

Bloom's Taxonomy



 Vanderbilt University Center for Teaching

Syllabus

Grading Structures and Policies

Undergraduate – 1000 Total Points

<u>Lecture</u>	<u>500 Points</u>
Exam 1	150
Exam 2	150
Reading Assignments	150 (15/ea.)
In-class Participation	50
<u>Lab</u>	<u>500 Points</u>
“Regular” Labs (x9)	180 (20/ea.)
Depo. Environ. Labs (x3)	120 (40/ea.)
Field Trip Assignments	100
Cumulative Project	100

	Letter	GPA	Total Points	Point Percent
A	A	4.000	≥ 930	≥ 93%
	A-	3.670	900 to <930	90% to <93%
	B+	3.330	870 to <900	87% to <90%
B	B	3.000	830 to <870	83% to <87%
	B-	2.670	800 to <830	80% to <83%
	C+	2.330	770 to <800	77% to <80%
C	C	2.000	730 to <770	73% to <77%
	C-	1.670	700 to <730	70% to <73%
	D+	1.330	670 to <700	67% to <70%
D	D	1.000	630 to <670	63% to <67%
	D-	0.670	600 to <630	60% to <63%
F	F	0.000	<600	<60%

Syllabus

Grading Structures and Policies

- Reading Assignments
- In-class participation
- Exams
- Labs
- Cumulative Project
- Field Trip Project



Syllabus

Extra-Credit Opportunities

UNDERGRADUATES

- Graduate Student Reading Assignments
- Graduate Student Portion of Exams
- Geoscience Colloquium
- Attend Barry's Science Bag
- Attend Geoscience Career Day
- Attend Office Hours



Measuring Sed Sections at Tepuel Hill, Patagonia, Argentina

Syllabus

Absences and Late Assignments

We will be accommodating as long as you communicate with us!

- Let us know ahead of time if you can't make it, and we will work with you!
- You are welcome to attend the other lab, but you must let both TA's know ahead of time
- Let me know ASAP if you can't make the field trip! We will arrange a one-day, make-up trip and assignment based your availability



Crossbeds overridden by Des Moines Lobe Till, Southern Minnesota



Knowledge Survey

15 minutes

What can sedimentary rocks tell us about the history of our planet that no other type of rock can?

What are some characteristics of sedimentary rocks that we can describe and use to infer their origin?

What are the commercial uses for sedimentary rocks – both extracted and *in situ* (in place)?

Before you go:

- Still *limited* room in: **GEOSCI 588 – Conducted Field Trip** (3 credits)
- Sed/Strat Seminar and Field Trip w/ Dr. John Isbell
- Semi-regular seminar during semester
- 2- week field trip to Utah and western Colorado:
 - Book Cliffs
 - Arches NP
 - Unaweep Canyon
- End of exams through end of May
- **Field-trip Fee: \$300 - \$400**
- This class is a pre-req
- Fulfills upper-level GEO SCI Requirement (Geo BA, Geo BS, Geo minor, CES majors/minors should check with advisors)
- Contact jisbell@uwm.edu if you're interested!!



Book Cliffs, Utah (not my picture...)

Before you go:

- **First Reading Assignment** is up on Canvas and is **due next Wednesday before the start of class!**

▼ Week 2: Jan. 26 - Feb. 1

Lecture: Intro to Sed/Strat & Origin of Sediments

To Do:

- 🚀 Reading Assignment: Week 2
Jan 29 | 15 pts
- 📎 NICHOLS Chap 1.pdf
- 📎 **Pettijohn Week1.pdf**
- 🚀 [Extra Credit] Week 2: Extra-Credit Reading Assignment
Jan 29 | 10 pts
- 📎 Chamberlin MWH.pdf



Before you go:

First Extra-Credit Opportunity of the Semester:

Colloquia Attendance and Summary (Due Monday, Jan 27)

Event Details:

Date: Thursday, January 23, 2020

Time: 4:00 pm - 5:00 pm

Location: Lapham Hall N103

Speaker: Jennifer Breceda, J.D., Executive Director, Milwaukee Riverkeeper

Title: Issues Impacting Milwaukee's Waterways: 'How do we get to 'Swimmable, Fishable, Drinkable?'

Host: Dr. Charlie Paradis

*Reception follows with snacks in the Green Gallery – great chance to talk to the speakers and practice your networking skills!

*Volunteer and
(unpaid) Internship Opportunities*