**GSCI 4110- Sedimentology**

**Spring 2017**

**Fridays**

 **9:05–9:55 am, 10:10-11:00 am, 11:15am-12.05 pm in Beach Hall Room # 233**

 **2.30 pm – 5.30 pm Beach Hall Room #101 or elsewhere**

**Instructor**

Anjali M. Fernandes, Ph. D.

Beach Hall #239

Email: anjali.fernandes@uconn.edu

Twitter: @climbing\_ripple

Office hours: Wednesday 3pm – 5pm

Meeting outside of office hours: Please feel free to email me to schedule a time to meet, if regular office hours do not work for you.

**Teaching Assistant**

Dawn Beamer

Beach Hall Rm #241

Email:  dawn.beamer@uconn.edu

Twitter: @Anthropocene\_is

Office hours: Mon. 2:30-4:30 or by appointment

**Course Aim and Goals**

You will develop a process-based understanding of the controls on siliciclastic sediment generation, transport and deposition in different environments. You will also learn how to analyze sedimentary strata to invert paleo-environmental conditions. A hands-on approach, comprised of a combination of physical experiments, numerical methods and field methods, will provide you with a practical skill-set that will serve you beyond the class-room.

**Pre-requisites**

[GSCI 1050](http://catalog.uconn.edu/gsci/#1050) or [GSCI 1051](http://catalog.uconn.edu/gsci/#1051), and GSCI[1052](http://catalog.uconn.edu/gsci/#1052). Recommended preparation: [GSCI 3020](http://catalog.uconn.edu/gsci/#3020). You will need to be comfortable with: a) the basic laws of physics, b) trigonometric and co-ordinate geometry, and c) algebra.

**Text-books and other required materials**

The Principles of Sedimentology and Stratigraphy by Sam Boggs will be our reference text. We will supplement this material with relevant published research articles.

Each student must be equipped with a 10X hand loupe, a grain-size card and a Rite-in-Rain notebook (for field and lab), all of which will be handed out on the first day of class. In addition to this notebook, please maintain a composition notebook for class notes. A summary of your thoughts after each lecture must be written out in the relevant notebook.

**Software**

We will use Excel, Word and Powerpoint on a regular basis. The lab exercise on Day 1 should give you an initial introduction to managing Excel.

**Attendance**

Historically there is a very strong correlation between grades and class participation. Time spent together in the lab. or classroom is vital for expanding the ideas and concepts outlined in the lectures.

**HuskyCT emails and announcements**

Automated emails sent out via HuskyCT will be my primary means of communicating with the whole class. You will be responsible for keeping track of updates sent to your UConn emails. Exercises, reading materials, homeworks and grades will be posted to the class website and an announcement sent out every time.

**Course Website**

Link: <http://sedimentology.uconn.edu>

The brand-new course website will house links to recorded lectures, various teaching materials, our class blog and our discussion forum. Hopefully this will be our one-stop-shop for all class related items except grades.

**Google Apps, You Tube, Twitter and Discussion Forum**

Each of you will be given access to a group folder where the whole class can work collaboratively. You will also have your own personal class folder shared with me where you will submit your homework assignments and written reports. We will show you how to use this collaborative platform on the first day of class.

Our group experiments will be broadcast on Google Hangouts, where you watch the experiment on your smart phone or laptop any time you like. You can also go to our class YouTube page to watch a replay of the whole experiment. More information on this during the semester.

We will discuss our experiments, field observations, etc. in real time on Twitter or our discussion forum (if you prefer a less public place to voice your opinion). The advantage of using twitter is that you can engage with scientists outside of our class.

**Assessments**

You will have one homework due every 3 weeks (total of 4), though the homework assignment may be released well ahead of time. These will include straightforward essay questions, as well as problem sets involving sediment transport calculations or processing of field or experimental data. Please plan to approach us for help well in advance of the submission date. All homeworks will be due by 11.59pm on the Wednesday before class meets. Post your assessment to your personal Google Drive folder and email me once you have done so. No late submissions will be accepted.

**Classroom and lab exercises, Unit Reports, Blogs and Social Media**

Group exercises in class and lab. must be completed and checked by me in at the end of each session. This material will not be graded directly but will feed into a 1-2 page, single spaced summary, including figures, for each week. Please do not lose your worksheets. Plan to provide a tidy Excel in your write-ups report. Please emphasize observations made in the lab, and linkages to concepts brought up in lectures or applied in your exercises.

Blog posts can be the result of group work (1-2 pages). This is an exciting and enjoyable way of exercising the less technical language in your vocabulary. The purpose of each post is to pick something exciting related to what we have seen or discussed in lab./class and write a concise, well-illustrated blurb about it. [Here](https://offtheshelfedge.wordpress.com/) is a link to a sedimentary geoscience blog that is often an enjoyable read. Imagine you are writing this blog for your non-scientist friends. The ability to communicate about science in a simple and concise way is just as important a skill as technical writing.

We will use social media to the extent that you are comfortable with. I maintain a twitter account only for science and networking, and I encourage you to do the same (ie: an account that you are comfortable with future colleagues and employers associating with your professional identity). Tweeting about exciting science in short concise sentences is a useful skill to have today. Tweets about our experiments, field-work and modelling will be common place in this class. In the past, class experiments have been followed by scientists around the world. If you are uncomfortable with a twitter discussion, you can post your comments to our discussion thread as well. My twitter handle is @climbing\_ripple.

**Paper Presentations**

You will work independently to critique and present a paper selected by me once during the semester. Each student will present the paper before the class in 15-minute conference-style presentations. You will each receive constructive feed-back on your presentations from your class mates, myself and the TA.

**Field Trips**

We will try and spend as much time in the field as the weather allows. One all-day weekend trip is planned for April 15. A second half –day week-end trip is a possibility- depending on group interest.

**Research Project**

The class project will be the most exciting part aspect of the class. You will work in groups of 4-5 to pose a hypothesis you would like to test experimentally and propose the outline of the experimental design for us to do so. Individual groups with write a one paragraph (0.5 page) proposal and present their experimental design in a five minute presentation. The class as a unit will evaluate all proposals and vote on it. The two most popular ideas will be selected for our group experiment. The class will once again divide into groups to work on the data generated from our experiment. This will give you the opportunity to bring to bear the full range of tools and knowledge you have gathered during the semester. The final deliverable will be a 15-minute conference-style presentation and a 10 page.

**Breakdown of Grades**

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| --- | --- |
| Entrance Interview with Anjali during week 1 | 1 |
| quizzes (best 10 scores) | 10 |
| field and lab notebook (2 checks) | 10 |
| twitter / discussion threads (10) | 10 |
| Science Blogs (4) | 12 |
|  Weekly Summaries (12) | 12 |
| Homeworks (4)  | 12 |
| 10 minute paper presentation (1) | 5 |
| **Research Project** |   |
|  Design and present experimental project (5 minutes + discussion) | 2 |
|  Project Participation (2-4 hours to collect experimental data) | 2 |
|  Project proposal (written) | 3 |
|  Abstract (written) | 2 |
|  Project Presentation (15 minutes) | 6 |
|  Collegiality points (feedback and questions on class mates presentations) | 2 |
|  Written Project Paper | 10 |
| Exit Exam with Anjali | 2 |
| Total | 101 |
| Extra Credit (4 points- for seminar attendance- 1 per seminar) | 4 |

**Academic Integrity**

A fundamental tenet of all educational institutions is academic honesty; academic work depends upon respect for and acknowledgment of the work and ideas of others. Misrepresenting someone else's work as one's own is a serious offense in any academic setting and it will not be condoned. Academic misconduct includes, but is not limited to, providing or receiving assistance in a manner not authorized by the instructor in the creation of work to be submitted for academic evaluation (e.g. papers, projects, examinations and assessments - whether online or in class); presenting, as one's own, the ideas, words or calculations of another for academic evaluation; doing unauthorized academic work for which another person will receive credit or be evaluated; and presenting the same or substantially the same papers or projects in two or more courses without the explicit permission of the instructors involved. A student who knowingly assists another student in committing an act of academic misconduct shall be equally accountable for the violation, and shall be subject to the sanctions and other remedies described in The Student Code. Sanctions shall include, but are not limited to, a letter sent to the Dean of Students of the University; a grade of 0 on the assignment, quiz or exam; a grade of F for the course*. (From the UConn Policy on Academic Misconduct)*