

Seminar in Earthquake System Science (CERI 7701/8701)  
TR 9:40-11:05, CERI House 3 Classroom  
<http://www.ceri.memphis.edu/people/egdaub/ceri7701.html>

**Instructor:** Eric Daub, [egdaub@memphis.edu](mailto:egdaub@memphis.edu), x4830, office in house 3. You are welcome to stop by whenever I am there and my door is open (except right before class).

**Description:** This seminar focuses on current topics in earthquake science through reading and discussing the primary scientific literature. We will cover six broad themes in studying and understanding earthquake effects: Earth and Fault Structure (S), Strain Accumulation and Earthquake Rates (A), Fault Monitoring (M), Earthquake Interactions (I), Physics-Based Modeling (P), and Forecasting (F). Each student will be required to lead several class discussions during the course of the semester. Because this course is discussion-based, attendance is mandatory, and all absences must be cleared in advance with the instructor.

**Materials:** The course will use articles from the primary literature. I will provide you with one paper for discussion during each class, but when you are in charge of a class discussion you will be expected to find additional papers for your classmates to read for discussion.

**Evaluation:** Presentations 40%, class participation 40%, final research proposal 20%.

**Presentations:** Each student will be in charge of several class meetings over the course of the semester. When you are in charge, you will be expected to (a) identify at least 2 additional papers to be read, and (b) create slides showing important points to be discussed. You should identify the papers for the following class by the preceding class at the latest. I will provide an example of how to make slides for discussion.

**Final Proposal:** There is no final exam for this class. Instead, all students will write a short, 5 page research proposal based on a real call for proposals (the 2018 SCEC RFP). You are free to choose any topic that you like (it can certainly be related to your own research interests), but it should fit within the scope of both this class and the RFP. Proposals will be due the final week of class, and should include references (references are not part of the 5 page limit). During final exams, the class will form an “evaluation panel” that will read the proposals submitted by the other members of the class and provide feedback on the proposed research.

Schedule	
1/16/18	1/18/18
No class (weather)	Intro
1/23/18	1/25/18
Reading Papers	Velocity Models (S)
1/30/18	2/1/18
Fault Models (S)	Fault Zone Structure (S)
2/6/18	2/8/18
Strain Accumulation (A)	Geodynamic Models (A)
2/13/18	2/15/18
Paleoseismology (A)	Slow Slip and Tectonic Tremor (A/M)
2/20/18	2/22/18
No class (I am away)	
2/27/18	3/1/18
Earthquake Swarms (M)	Ambient Noise Monitoring (M)
3/6/18	3/8/18
Spring Break	
3/13/18	3/15/18
Post-Seismic Slip and Aftershocks (I)	Pre-Seismic Slip and Foreshocks (I)
3/20/18	3/22/18
Static Triggering (I)	Dynamic Triggering (I)
3/27/18	3/29/18
Laboratory Friction Experiments (P)	Friction Constitutive Laws (P)
4/3/18	4/5/18
Dynamic Rupture (P)	Ground Motion Models (P)
4/10/18	4/12/18
Ground Motion Simulation (P)	Statistical Seismicity Models (F)
4/17/18	4/19/18
Earthquake Forecasts (F)	Earthquake Early Warning (F)
4/24/18	Week of 4/30/18
Earthquake Prediction (F)	Panel Meeting