

COURSE SCHEDULE

L = Lecture; D = Discussion

See <http://earthscope-sem.asu.edu/presentations> for all Reading Materials

Week	Date	Topic	Notes
1	01/20/2010	Course organization and team selection	Lecturer: MF, EG
2	01/26/2010	L1a: Overview of the EarthScope Project and Facilities L1b: Seismic tomography using body waves	Lecturer: MF Reading: Guidelines document; EarthScope website; Dalton, Nature (2000); Jackson, Leading Edge (2003); Kerr, Science (2009) Reading: Sigloch et al., NatGeo (2008); Burdick et al., SRL (2008); Roth et al., GRL (2008); Schmandt and Humphreys, unpub (2009)
3	02/02/2010	NO CLASS	
4	02/09/2010	D1: Earth structure, chemistry, & dynamics I: the upper mantle L2: Seismic tomography using surface waves	Discussion Leaders: MF, EG Lecturer: EG Reading: Bensen et al., GJI (2009); Lin et al., GJI (2008); Moschetti et al., G ³ (2007); Yang and Ritzwoller, GRL (2008), Courtland, Nature (2008); Ritzwoller, YST (2008)
5	02/16/2010	D2: Earth structure, chemistry, and dynamics II L3: Magnetotellurics and conductivity	Discussion Leaders: MF, EG Lecturer: STUDENT TEAM 1 Reading: Patro and Egbert, GRL (2008); Hill et al., NatGeo (2009)
6	02/23/2010	D3: Imaging fluids in the crust and mantle L4: Upper mantle seismic anisotropy	Discussion Leader: STUDENT TEAM 1 Lecturer: STUDENT TEAM 2 Reading: Zandt and Humphreys, Geology (2008), West et al., NatGeo (2009); Liu, G ³ (2009); Becker et al. (2006)
7	03/02/2010	D4: Mapping upper mantle flow, fabric, and chemistry L5: Seismic reflectance & receiver functions	Discussion Leader: STUDENT TEAM 2 Lecturer: STUDENT TEAM 3 Reading: Gilbert et al., JGR (2004); Frassetto et al., EPSL (2006); Ligorria and Ammon, BSSA (1999); Abt et al., JGR (2010)
8	03/09/2010	D5: Mapping chemical & phase discontinuities in the crust & upper mantle L6: Surface motions and deformation	Discussion Leader: STUDENT TEAM 3 Lecturer: STUDENT TEAM 4 Reading: Davis et al., Nature (2006); McCaffrey et al., (GRL 2000); Kreemer, JGR (2009); Hammond and Thatcher, JGR (2007)
	03/16/2010	NO CLASS – Spring Break	
9	03/23/2010	NO CLASS	
10	03/30/2010	D6: Linking deformation between the surface, crust, and mantle L7: Episodic tremor and slip (ETS)	Discussion Leader: STUDENT TEAM 4 Lecturer: STUDENT TEAM 1 Reading: Brudzinski and Allen, Geology (2007); Ghosh et al., GRL (2009); Kao et al., JGR (2009); Rogers and Dragert, Science (2003)
11	04/06/2010	D7: The nature and diversity of earthquake fault behavior, fluids in fault zones L8: Earthquake triggering	Discussion Leader: STUDENT TEAM 1 Lecturer: STUDENT TEAM 2 Reading: Velasco, Gomberg, Magee papers, others?

12	04/13/2010	D8: Nature of fault loading, earthquake cycles L9: Science using EarthScope's San Andreas Fault Observatory at Depth (SAFOD)	Discussion Leader: <i>STUDENT TEAM 2</i> Lecturer: <i>STUDENT TEAM 3</i> Reading: SAFOD papers
13	04/20/2010	D9: Rheology of fault rocks at depth L10: TBD (<i>new discoveries this semester</i>)	Discussion Leader: <i>STUDENT TEAM 3</i> Lecturer: <i>STUDENT TEAM 4</i>
14	04/27/2010	D10: TBD (<i>new discoveries this semester</i>) L11: Synthesis / Highlights	Discussion Leader: <i>STUDENT TEAM 4</i> Lecturer: <i>MF, EG</i>
15	05/04/2010	D11: Future Directions	Discussion Leaders: <i>MF, EG, CLASS</i>