

Course: SIO 10 (The Earth)

Instructor: Dr. Adrian Borsa (aborsa@ucsd.edu)

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Textbook: "Earth: Portrait of a Planet" by Stephen Marshak (6th or 7th edition)

Lectures: MWF 2:00~2:50, The Jeannie (North Torrey Pines LLC)

Instructor Office Hours: Wednesdays 3:15-4:00 pm, Scripps Undergraduate Office, 2nd floor Galbraith Hall. Also by appointment.

Grading: 40% homework assignments; 15% end-term project; 25% final exam; 20% midterm

Date	Day	Lecture #	Textbook Chapter Covered	Required Reading (Marshak, 6th and 7th editions)
April 1	M	Lecture 1	Introduction	none
April 3	W	Lecture 2	Chapter 1 Cosmology and the Birth of Earth	1.2: All; 1.4: All; 2.2: All
April 5	F	Lecture 3	Chapter 2 Journey to the Center of the Earth I	2.3: All; 2.4: All
April 8	M	Lecture 4	Chapter 2 Journey to the Center of the Earth II	2.5: All; 2.6: All; Box 2.2
April 10	W	Lecture 5	Chapter 3 Drifting Continents and Spreading Seas	3.1: All; 3.2: All; 3.3: All; 3.4: All except "Polar Wander"
April 12	F	Lecture 6	Chapter 4 The Way the Earth Works: Plate Tectonics I	4.1: All; 4.2: All; 4.3: All
April 15	M	Lecture 7	Chapter 4 The Way the Earth Works: Plate Tectonics II	4.4: All; 4.5: All; 4.6: All
April 17	W	Lecture 8	Chapter 4 The Way the Earth Works: Plate Tectonics III	4.7: All; 4.8: All
April 19	F	Lecture 9	Interlude A Introducing Rocks	A.2: All
			Chapter 6 Up from the Inferno: Magma and Igneous Rocks	6.1: All; 6.2: All; 6.4: All except "Fractional Crystallization"; 6.5: All; 6.7: All
April 22	M	Lecture 10	Interlude B A Surface Veneer: Sediments and Soils	B.2: "Physical Weathering" only
			Chapter 7 Pages of Earth's Past: Sedimentary Rocks	7.2: All except "Clastic classification, Biochemical Rocks, Travertine, Dolostone, Chemical Chert"; 7.3: All; 7.4: All
April 24	W	Lecture 11	Chapter 8 Metamorphism: A Process of Change	8.2: All; 8.5: "Thermal and Burial Metamorphism"; Box 8.3
			Interlude C The Rock Cycle in the Earth System	C.1: All; C.2: All
April 26	F	Lecture 12	Chapter 9 The Wrath of Vulcan: Volcanic Eruptions I	9.1: All; 9.2: All; 9.3: All; 9.4: All
April 29	M	Lecture 13	Chapter 9 The Wrath of Vulcan: Volcanic Eruptions II	9.5: All; 9.7: All; Box 9.1
May 1	W	Lecture 14	Chapter 10 A Violent Pulse: Earthquakes I	10.1: All; 10.2: All; 10.3: All; 10.4: All
May 3	F	Lecture 15	Chapter 10 A Violent Pulse: Earthquakes II	10.5: All; 10.6: All, but omit "Tsunamis"; 10.8: All; Box 10.1
May 6	M	Lecture 16	Chapter 11 Crustal Deformation and Mountain Building	11.1: All; 11.2: All; 11.3: All; 11.5: "Subduction" and "Collision" sections only
May 8	W	Mid-term	Mid-term (in-person exam during class, covers Lectures 2-13)	
May 10	F	Lecture 17	Chapter 12 Deep Time	12.1: All; 12.5: All except "Geological Maps"; 12.8: All; Also: Look up definition of "unconformity"
			Chapter 13 A Biography of Earth	Box 13.2
May 13	M	Lecture 18	Chapter 14 Squeezing Power from a Stone: Energy Resources I	14.1: All; 14.2: All; 14.3: All
May 15	W	Lecture 19	Chapter 14 Squeezing Power from a Stone: Energy Resources II	14.4: All; 14.5: All; Box 14.1, 14.2
May 17	F	Lecture 20	Chapter 14 Squeezing Power from a Stone: Energy Resources III	14.9: All; Box 14.3
May 20	M	Lecture 21	Interlude F Ever-Changing Landscapes and the Hydrologic Cycle	F.1: All; F.2: All; F.3: All; F.4: All; F.5: All; Box F.2
May 22	W	Lecture 22	Chapter 16 Unsafe Ground: Landslides and Other Mass Movements	16.1: All; 16.2: All; 16.3: All; 16.4: All; Box 16.2
			Chapter 10 Tsunamis	10.6: "Tsunamis"
May 24	F	Lecture 23	Chapter 17 Streams and Floods: The Geology of Running Water I	17.1: All; 17.2: All; 17.3: All; 17.4: All; 17.5: All
May 27	M	Holiday		
May 29	W	Lecture 24	Chapter 17 Streams and Floods: The Geology of Running Water II	17.6: All; 17.8: All; 17.9: All
May 31	F	Lecture 25	Chapter 18 Restless Realm: Oceans and Coasts I	18.3: All; 18.4: All; 18.6: All
June 3	M	Lecture 26	Chapter 18 Restless Realm: Oceans and Coasts II	18.5: All; 18.7: All; 18.9: All
June 5	W	Lecture 27	Chapter 21 Dry Regions: The Geology of Deserts	21.1: All; 21.2: All; 21.3: All; 21.4: All; 21.6: All
June 7	F	Lecture 28	Chapter 22 Amazing Ice: Glaciers and Ice Ages	22.2: All except "Movement of Glacial Ice"; 22.5: "Sea Level Changes"; 22.6: All; 22.7: "Causes"
June 14	F	Final Exam	Short final (in-person exam at 3:00 pm, The Jeannie)	

	Introduction
	The Rocky Earth
	The Dynamic Earth
	The Giving Earth
	The Water Earth