

**Course: SIO 10 (The Earth)**

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Textbook: "Earth: Portrait of a Planet" (5th or 6th editions) by Stephen Marshak.

Lectures: MWF 3:00~3:50, via Zoom (see Canvas for Zoom information)

Instructor Office Hours: Tuesdays 11:00~12:00 (via Zoom). Private discussions available upon request.

Grading: 25% viewing lectures (in person or online); 35% weekly assignments; 25% exams (format TBD); 15% end-term project

Schedule:

Date	Day	Lecture #	Textbook Chapter Covered	Required Reading (Marshak, 6th edition)	Required Reading (Marshak, 5th edition)
March 30	M	Lecture 1	Introduction	none	none
April 1	W	Lecture 2	Chapter 1 Cosmology and the Birth of Earth	1.2 (pp.17-19, 21-22), 1.4, 2.2 (pp.41-43)	1.2 (pp.13-15,17-18.5), 1.4, 2.2 (pp.37-38, 40)
April 3	F	Lecture 3	Chapter 2 Journey to the Center of the Earth I	2.3, 2.4 (but see below for details)	2.3, 2.4 (but see below for details)
April 6	M	Lecture 4	Chapter 2 Journey to the Center of the Earth II	2.5, 2.6, Box 2.2	2.5, 2.6, Box 2.2
April 8	W	Lecture 5	Chapter 3 Drifting Continents and Spreading Seas	3.1, 3.2, 3.3, 3.4 (pp.81-87)	3.1, 3.2, 3.4, 3.5
April 10	F	Lecture 6	Chapter 4 The Way the Earth Works: Plate Tectonics I	4.1, 4.2, 4.3	4.1, 4.2, 4.3
April 13	M	Lecture 7	Chapter 4 The Way the Earth Works: Plate Tectonics II	4.4, 4.5, 4.6	4.4, 4.5, 4.6
April 15	W	Lecture 8	Chapter 4 The Way the Earth Works: Plate Tectonics III	4.7, 4.8	4.7, 4.8
April 17	F	Lecture 9	Interlude A Introducing Rocks	A.1, A.2, A.3, Box 5.3	A.1, A.2, A.3, Box 5.3
			Chapter 6 Up from the Inferno: Magma and Igneous Rocks	6.1, 6.2, 6.4, 6.5, 6.7	6.1, 6.2, 6.4, 6.5, 6.7
April 20	M	Lecture 10	Interlude B A Surface Veneer: Sediments and Soils	B.1, B.2	B.1, B.2
			Chapter 7 Pages of Earth's Past: Sedimentary Rocks	7.1, 7.2 (p. 211) 7.4, 7.5	7.1, 7.2 (pp 203-204) 7.4, 7.5
April 22	W	Lecture 11	Chapter 8 Metamorphism: A Process of Change	8.1, 8.2, 8.5	8.1, 8.2, 8.5
			Interlude C The Rock Cycle in the Earth System	C.1, C.2, C.3	C.1, C.2, C.3
April 24	F	Lecture 12	Chapter 9 The Wrath of Vulcan: Volcanic Eruptions I	9.1, 9.2, 9.3, 9.4, 9.8	9.1, 9.2, 9.3, 9.4, 9.8
April 27	M	Lecture 13	Chapter 9 The Wrath of Vulcan: Volcanic Eruptions II	Box 9.1, 9.5, 9.6, 9.7	Box 9.1, 9.5, 9.6, 9.7
April 29	W	Lecture 14	Chapter 10 A Violent Pulse: Earthquakes (Tsunamis in Lecture 23) I	10.1, 10.2, 10.3, 10.4	10.1, 10.2, 10.3, 10.4
May 1	F	Lecture 15	Chapter 10 A Violent Pulse: Earthquakes (Tsunamis in Lecture 23) II	10.5, 10.6 (except Tsunamis), 10.7, Box 10.1	10.5, 10.6 (except Tsunamis), 10.7, Box 10.1
May 4	M	Mid-term	Short mid-term (format TBD)		
May 6	W	Lecture 16	Chapter 11 Crustal Deformation and Mountain Building	11.1, 11.2, 11.3, 11.4, 11.5	11.1, 11.2, 11.3, 11.4, 11.5
May 8	F	Lecture 17	Chapter 12 Deep Time	12.1, 12.2, 12.5, 12.6, 12.8	12.1, 12.2, 12.5, 12.6, 12.8
			Chapter 13 A Biography of Earth	Box 13.2, Geology at a Glance (pp. 514-515)	Box 13.2, Geology at a Glance (pp. 498-499)
May 11	M	Lecture 18	Chapter 14 Squeezing Power from a Stone: Energy Resources I	14.1, 14.2, 14.3, 14.4, 14.5, 14.6, Boxes 14.1, 14.2	14.1, 14.2, 14.3, 14.4, 14.5, 14.6, Boxes 14.1, 14.2
May 13	W	Lecture 19	Chapter 14 Squeezing Power from a Stone: Energy Resources II	14.7, 14.8, 14.9, Box 14.3	14.7, 14.8, 14.9, Box 14.3
May 15	F	Lecture 20	Interlude F Ever-Changing Landscapes and the Hydrologic Cycle	F.1, F.2, F.3, F.4, F.5, Box F.2	F.1, F.2, F.3, F.4, F.5, Box F.2
May 18	M	Lecture 21	Chapter 16 Unsafe Ground: Landslides and Other Mass Movements	16.1, 16.2, 16.3, 16.4, Box 16.2	16.1, 16.2, 16.3, 16.4, Box 16.2
			Chapter 10 Tsunamis	10.6 (Tsunami subsection)	10.6 (Tsunami subsection)
May 20	W	Lecture 22	Chapter 17 Streams and Floods: The Geology of Running Water I	17.1, 17.2, 17.3, 17.4, 17.5	17.1, 17.2, 17.3, 17.4, 17.5
May 22	F	Lecture 23	Chapter 17 Streams and Floods: The Geology of Running Water II	17.6, 17.7, 17.8, 17.9	17.6, 17.7, 17.8, 17.9
May 25	M	Holiday			
May 27	W	Lecture 24	Chapter 18 Restless Realm: Oceans and Coasts I	18.1, 18.2, 18.3, 18.4, 18.6	18.1, 18.2, 18.3, 18.4
May 29	F	Lecture 25	Chapter 18 Restless Realm: Oceans and Coasts II	18.5, 18.7, 18.9	18.5, 18.6, 18.8
June 1	M	Lecture 26	Chapter 21 Dry Regions: The Geology of Deserts	21.1, 21.2, 21.3, 21.4, 21.5, 21.6, Box 21.1	21.1, 21.2, 21.3, 21.4, 21.5, 21.6, Box 21.1
June 3	W	Lecture 27	Chapter 22 Amazing Ice: Glaciers and Ice Ages	22.1, 22.2, 22.3, 22.4, 22.6, 22.7, Box 22.1	22.1, 22.2, 22.3, 22.4, 22.6, 22.7
June 5	F	Lecture 28	Review of Course		
June 10	W	Final Exam	Short final (format TBD)		

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

	<p><b>*Chapter 2, Section 2.3:</b> do not read the list of Earth materials starting with "Organic Chemicals" and ending with "Volatiles." <b>Section 2.4</b> do not read "Clues from the Study of Earthquakes."</p>		<p><b>*Chapter 2, Section 2.3:</b> do not read the list of Earth materials starting with "Organic Chemicals" and ending with "Volatiles." <b>Section 2.4</b> do not read "Clues from the Study of Earthquakes."</p>
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