

OCEN 613 - Geochemistry of Marine Sediments*

Dates	Topics	Chapters
2 weeks	Introduction; major sedimentary components	1, 2
	Introduction to stable isotope geochemistry	3
2 weeks	Sediment properties	4
	Introduction to transport processes	5
2 weeks	Organic matter mineralization; Microbial mediation of geochemical processes	8.1 7.1 – 7.4, 7.6
	The distribution of remineralization processes in marine sediment	7.5
2 weeks	Organic geochemistry of marine sediments	9.1 – 9.7, 11.1 9.9 (opt.), 10 (opt.)
	Organic matter-mineral interactions	15.1
2 weeks	Mathematical modeling of geochemical processes - steady-state systems	6, 8
1 week	Bioturbation and sediment-water interface processes	12
1 week	Linking diagenesis and organic geochemistry	11.2
1 week	Carbon Preservation in sediments	9.8, 15.2-15.6 Burdige (2007, Chem. Rev.)
1-2 weeks	Biogeochemical processes in pelagic sediments; Carbonate and opaline silica in pelagic sediments	13
1 week	Non steady-state diagenesis in marine sediments	14
2 weeks	Biogeochemical processes in continental margin sediments (including coastal and estuarine sediments)	16, 17.1 - 2
1 weeks	Trace metal cycling in marine sediments	17.3
1 week	Linking sediment diagenesis and global elemental cycles	18

* In a typical 14 week semester, you obviously could not cover all of the topics listed here. One option is cover all of the topics up to “Carbon preservation” and choose one of the remaining topics to cover in the last week