

CE 60 PROPERTIES OF CIVIL ENGINEERING MATERIALS
COURSE OUTLINE

<u>Date</u>	<u>Lectures</u>	<u>Reading Assignment</u>
Aug. 27	Introduction	
Sept. 1	Atomic Structure and Bonding	L.Notes+
Sept. 3	Crystal Structures	CE 60* Chapters 3.1-3.10
Sept. 8	Mechanical Properties (Elastic vs Plastic Behavior, Fracture)	CE 60 Chapters 6.2-6.6 Chapter 4.4.2
Sept. 10	Alloys and their Solid Solutions	CE 60 Chapters 4.3
Sept. 15	Phase Diagrams	CE 60 Chapters 8.0-8.7
Sept. 17	Equilibrium Microstructure of Steel Alloys	CE 60 Chapter 9.2
Sept. 22	Phase Transformations	CE 60 Chapter 4.1
Sept. 24	Heat Treatment of Steel Alloys	CE 60 Chapter 9.3
Sept. 29	Quenched and Tempered Steel	
Oct. 1	FIRST MIDTERM EXAMINATION	
	<i>E 47 Students join CE 60 Lectures and Labs</i>	
Oct. 6	Introduction to Concrete	CSPM# pp. 1-16
Oct. 8	Concrete Aggregates and their Properties	CSPM pp. 56-58; 253-258
Oct. 13	Proportioning of Concrete	CSPM pp. 317-323
Oct. 15	ACI Mix Design	CSPM pp. 323-333
Oct. 20	Hydration of Portland Cement	CSPM pp. 203-228
Oct. 22	Structure and Strength of Concrete	CSPM pp. 49-76
Oct. 27	Elasticity and Failure of Concrete	CSPM pp. 85-95
Oct. 29	Permeability of Concrete	CSPM pp. 125-130
Nov. 3,5	Durability of Concrete	CSPM pp. 130-152
Nov. 10	SECOND MIDTERM EXAMINATION	
Nov. 12	Volume Changes and Creep of Concrete	CSPM pp. 95-109
Nov. 17	Structure of Wood and Wood Products	L. notes+
Nov. 19	Properties of Wood	L. notes+
Nov. 24	Structure and Prop. of Construction Steel	CE 60 Chapter 6.4
Dec. 1	Strengthening Mechanisms of Construction Steel and Aluminum Alloys	CE 60 Chapter 6.5.1
Dec. 3	Summary	
Dec. 16	FINAL EXAMINATION	

L. Notes+: refers to lecture notes which will be posted on bcourses

CE 60*: refers to pages in Course book for CE 60 by McGraw-Hill (Foundation of Materials Science and Engineering); available in bookstores (isbn#9781121008120) and as e-book.

CSPM#: refers to pages in Concrete, Microstructure, Properties and Materials by Mehta and Monteiro, 3rd edition

Grading Policy: The Laboratory Grade will represent 20% of the final grade. There will be two Mid-Term Examinations each will count 20% of the Course Grade, the home work will count 10%, and there will be a Final Examination which counts 30% of the Course Grade.