

**Class meets on Tuesdays and Thursdays from 4:00 – 5:15 or 6 p.m. in SR 398**

Lesson	Day	Date	Topic	Text Reference
1	Tuesday	8/26	Introduction, history and development	Chapters 1, 2
2	Thursday	8/28	Cement types and manufacture I	Chapter 3
3	Tuesday	9/2	Cement types and manufacture II	Chapter 3
4	Thursday	4	Hydration	Chapter 4
5	Tuesday	9	Mineral admixtures and blended cements	Chapter 5
6	Thursday	11	Water and aggregates	Chapters 6, 7
7	Tuesday	16	Aggregates II	Chapter 7
8	Thursday	18	Fresh concrete properties and tests	Chapter 9
9	Tuesday	23	Proportioning concrete mixes I	Chapter 10
10	Thursday	25	Chemical admixtures – Dr. Nmai guest	Chapter 8
	Tuesday	30	Exam I	Chapters 1 – 10
11	Thursday	10/2	Proportioning concrete mixes II	Chapter 10
12	Tuesday	7	Concrete construction practices*	Chapter 11
13	Thursday	9	Concrete curing	Chapter 12
14	Tuesday	14	Stress and deformation	Chapter 13
15	Thursday	16	Hardened concrete properties and tests	Chapter 14
16	Tuesday	21	Quality control	Chapter 15
17	Thursday	23	Time-dependent deformation	Chapter 16
	Tuesday	28	No class – OTEC in Columbus, Ohio, <a href="http://www.otecohio.org">www.otecohio.org</a>	
18	Thursday	30	High-strength/high performance concrete	Chapter 19
	Tuesday	11/4	No class	
18	Thursday	6	Concrete for special applications	Chapter 20
19	Tuesday	11	Cement-polymer composites, FRC	Chapters 21, 22
20	Thursday	13	Guest lecture/ special topic	
	Tuesday	18	Exam II	Chapters 11 – 22
21	Thursday	20	Guest lecture/ special topic	
22	Tuesday	25	Project presentations	
	Tuesday	12/2	No class	
	Thursday	4	No class	
<i>Final</i>	<i>Tuesday</i>	<i>9</i>	<i>Final exam 4 – 6 p.m.</i>	<i>All</i>

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## Homework on ASTM Standards

Due at start of class Tuesday 25 November – 5 homework bonus points. Include the ASTM standard number, date, and section where you found the answer.

1. There is a safety warning for the slump test – what is it? The warning also shows up on other tests.
2. When two different operators conduct the air content test of fresh concrete by the pressure method, what is the maximum difference in percent air that should be expected?
3. What is the single-operator-machine multibatch precision for the static modulus of elasticity test, over the range of 2.5 to 4 million psi?
4. What is the expected within-batch coefficient of variation for the splitting tensile strength test, and what is the maximum expected variation of two properly conducted tests?
5. How many cylindrical test specimens must be prepared to develop a maturity-strength relationship?
6. When making concrete test specimens in the field, what is the initial curing temperature range if the concrete specified strength is 6000 psi or greater?
7. What is the within-test precision for the compressive strength test on 4 x 8 cylinders?
8. What is the single-operator coefficient of variation for drilled cores with compressive strength between 4500 and 7000 psi?
9. What is the single-operator coefficient of variation for flexural strength of concrete beams with third-point loading?
10. For the unit weight test, what are the requirements for the rubber mallet for a sample of less than one half cubic foot?