University of Portland
School of Engineering

CE301 – Construction Materials
CE372 – Construction Materials Laboratory
Fall 2007
Section A: MWF 9:15-10:10 & W 2:40-5:40
Section B: MWF 9:15-10:10 & F 2:40-5:40

Instructors: Dr. Mehmet Inan (Room 306, 503-943-7151, inan@up.edu)
Dr. Mojtaba Takallou (Room 202A, 503-943-7437, takallou@up.edu)
Dr. Matthew R. Kuhn (Room 103, 503-943-7361, kuhn@up.edu)

Class Times: Lectures 9:15-10:10 MWF (see Syllabus)
Laboratories 2:40-5:40 W, Section A
2:40-5:40 F, Section B

Note that lectures and laboratories will not be held on all of the above days. The complete schedule is given in the syllabus. The combined time in lecture and laboratory will total about 41 contact hours during the semester.

Office Hours:

Text: Michael S. Mamlouk and John P. Zaniewski, *Materials for Civil and Construction Engineers*, Addison-Wesley, Menlo Park, Ca. 2006.

Western Wood Products Association, *Western Lumber Product Use Manual*, 2005 ($3.00).

Course Educational Objectives: Students are introduced to the materials of construction for civil engineers: their behavior, properties, and construction applications. Materials include: mineral aggregates, lime and cements, concrete, asphalt cements, timber, and ferrous metals. Students apply engineering mechanics to the behavior of structural elements constructed from these materials. Students conduct laboratory experiments to quantify material behavior.

Course Requirements and Grading: The same grade will be given in both CE301 and CE372, based upon the following weights.

Homework	
Dr. Takallou	5%
Dr. Inan	7%
Dr. Kuhn	8%
Examinations	
No. 1 (Dr. Takallou)	20%
No. 2 (Dr. Inan)	20%
No. 3 (Dr. Kuhn)	20%
Laboratory	
Drs. Kuhn and Inan	20%

Evaluation Standards: Grading will be based upon the Engineering School's definitions of letter grades. The percentages designate a minimum grade for the given percentage, with reference to a minus ("-") letter grade.

"A" Denotes exceptional accomplishment, 90%
"B" Denotes accomplishment significantly better than average, 80%
"C" Denotes satisfactory accomplishment, 70%
"D" Denotes accomplishment less than satisfactory but still passing, 50%
"F" Denotes failure

Homework Policy:

1. Homework is due at the beginning of class. Late homework will not be accepted.
2. Do your own homework.
3. Every homework assignment will count toward the final grade.
4. Use either square grid engineering paper or blank (white) paper. Do not use essay paper (horizontal lines only). Do not do use the handout assignment sheets for writing your solutions, unless instructed by the professor.
5. Include a cover page with each homework set. Give your name, assignment number, course number, and due date.
6. Print on only <u>one side</u> of the paper.
7. Summarize the problem statement before the solution is given.
8. Be neat, points will be deducted for illegible writing.
9. Carry out your work in logically ordered and separate steps, rather than combining steps.
10. Use words and sketches if necessary to explain computations.
11. If you include a graph in your work, it should be complete with a title, axis labels, and units.
12. Never show a number without its units. Underline the final answer, *with its units*.
13. Staple sheets together. No paper clips.

Examinations: There will be no make-up examinations and no credit for missed examinations.

Academic Integrity: The University's Code and Guidelines of Academic Integrity are available on the web (www.up.edu > Academics > Registrar > Academic Regulations). Students should read and be familiar with the code and guidelines and should be aware of the various types of violations: cheating, forgery, and plagiarism. In this course, all violations will be considered as being of Level 2 or higher.

Accommodation for Disability: If you have a disability and require an accommodation to fully participate in this class, contact the Office for Students with Disabilities (OSWD), located in the University Health Center (503-943-7134), as soon as possible.

If you have an OSWD Accommodation Plan, you should make an appointment to meet with Dr. Kuhn to discuss your accommodations. Also, you should meet with Dr. Kuhn if you wish to discuss emergency medical information or special arrangements in case the building must be evacuated.

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Course Syllabus

Week No.		Date	Sec.	Topics			Reading
1	M	8-27		Course introduction			
	W	8-29		Mineral aggregates			Chap. 5
	F	8-31		Mineral aggregates			
2	M	9-3		Mineral aggregates			
	W	9-5		Asphalt cement and mixes			Chap. 9
	F	9-7		Asphalt cement and mixes			
3	M	9-10		Asphalt cement and mixes			
	W	9-12		Asphalt cement and mixes			
	F	9-14		Asphalt cement and mixes			
4	M	9-17		Asphalt cement and mixes			
	W	9-19		Portland cement and concrete			Chaps. 6-7
	F	9-21		*Examination 1*			
5	M	9-24		Portland cement and concrete			
	W	9-26		Portland cement and concrete			
	F	9-28		Portland cement and concrete			
6	M	10-1		Portland cement and concrete			
				Laboratory:			
	W	10-03	A	Concrete mix design,	Wed.,	2:40-4:40	
	F	10-5	B	Concrete mix design,	Fri.,	2:40-4:40	
7	M	10-8		Architectural materials			
				Laboratory:			
	W	10-10	A	Fabricating concrete beams	Wed.,	2:40-5:40	
	F	10-12	B	Fabricating concrete beams	Fri.,	2:40-5:40	
				Fall break!!			
8	M	10-22		*Examination 2*			
	W	10-24		Metals, fracture, and fatigue			pp. 40-61
	F	10-26		Metals, fracture, and fatigue			Chap. 3
9	M	10-29		Metals, fracture, and fatigue			
				Laboratory:			
	W	10-31	A	Tensile testing of steel,	Wed.,	2:40-4:15	
						4:15-5:40	

	F	11-2	B	Tensile testing of steel,	Fri.,	2:40-4:15 4:15-5:40	
10	M	11-5		Metals, fracture, and fatigue			
				Laboratory:			
	W	11-7	A	Testing concrete cylinders,	Wed.,	2:40-4:15 4:15-5:40	
	F	11-9	B	Testing concrete cylinders,	Fri.,	2:40-4:15 4:15-5:40	
11	M	11-12		Wood composition			Chap. 10
	W	11-14	A/B	Wood composition, cont.			
				Laboratory:			
	W	11-14	A	Testing concrete beams,	Wed.,	2:40-4:15 4:15-5:40	
	F	11-16	B	Testing concrete beams,	Fri.,	2:40-4:15 4:15-5:40	
12	M	11-19		Wood - mechanical properties			
	W	11-21		Wood - mechanical properties			
	F	11-23		No class - Thanksgiving break			
13	M	11-26		Designing wood beams			
				Laboratory:			
	W	11-28	A	Testing wood,	Wed.,	2:40-4:15 4:15-5:40	
	F	11-30	B	Testing wood,	Fri.,	2:40-4:15 4:15-5:40	
14	M	12-3		Designing wood beams			
	W	12-5		Designing wood beams			
	F	12-7		Course evaluations			
		12-12		Wednesday, 8:00-10:00, *Examination 3*			