

Pavement Design CE 411 and CE 511

Prerequisites: MAE 243, 3

Credit hours - 3, contact hours - 44

Instructor: John Zaniewski, ESB 651c, Office hours: TR 10:00 to 12:00

Text: *Pavement Analysis and Design*, Huang, second edition

Objective: There are over 2.2 million miles of highways in the United States and over 10,000 airports. In West Virginia there are over 34,000 miles of roadways and 120 airports. The WVDOH resurfaced about 1,500 miles of roads last year. The objective of this course is to prepare engineers to perform pavement designs for new construction and rehabilitation of existing highways and airports.

Prerequisite: MAE 243

Elective course for BSCE

Expected Learning Outcomes - Upon successful completion of this course students will:

Goals by topic	student outcome
Understand the importance of pavement to national infrastructure	J
Be able to analyze flexible pavement structures	A
Be able to analyze rigid pavement structures	A
Identify the design factors needed for pavement design and rehabilitation	E
Design a flexible pavement	C
Design a rigid pavement	C
Present design drawings and analysis in a report and on design plans	K

Assignments: The reading assignments are indicated on the attached sheet. Quizzes may be used to assess preparedness, if you are not in class on the day of a quiz, it is assumed you are not prepared. Homework will be assigned during the semester. All assignments are due at the beginning of class. Assignments turned in after the beginning of class will loose 10% of their value per workday late. Late assignments will not be accepted after the material is returned to the class. Graduate students (CE 511) will be given special assignments throughout the semester.

Attendance: You are expected to attend all classes. You are expected to come to class on time. If you have a specific problem with attendance notify me prior to class, unless the emergency is such that this is not possible. In the event of an emergency, notify me as soon as possible.

Grading: Final grades will be based on 90%, 80%, 70%... corresponding to A, B, C,...

The instructor reserves the right to curve up. Grades will be based on a weighted average: Homework and quizzes 20%, design project 20%, tests 40%, and final 20%

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Class Session		Topic	Reading chapters
1	8/19	Introduction Pavement Types	1
2	8/21	Pavement performance	9
3	8/23		
4	8/30	Stresses in flexible pavements	2
5	9/4		
6	9/6	Computer models	3
7	9/9		
8	9/11	Stresses in rigid pavements	4
9	9/13		
10	9/16	Computer models	5
11	9/18		
12	9/20		
13	9/23	Exam	
14	9/25	Traffic Loading	6
15	9/27		
16	9/33	Material characterization	7
17	10/2		
18	10/4		
19	10/7	Drainage design	8
20	10/9		
21	10/11		
22	10/16		
23	10/18	Reliability	10
24	10/21		
25	10/23	Flexible pavement design	11
26	10/25		
27	10/28		
28	10/30		
29	11/1	Rigid pavement design	12
30	11/4		
31	11/6		
32	11/8		
33	11/11		
34	11/13	Rehabilitation design	13
35	11/15	Exam	
36	11/18		
37	11/20		
38	11/22		
39	12/2	Pavement management	
40	12/4		
41	12/6		
42	12/9		
	12/17	Final exam 8 to 10 AM	

Social justice statement:

West Virginia University is committed to social justice. I concur with that commitment and expect to foster a nurturing learning environment based upon open communication, mutual respect, and non-discrimination. Our University does not discriminate on the basis of race, sex, age, disability, veteran status, religion, sexual orientation, color or national origin. Any suggestions as to how to further such a positive and open environment in this class will be appreciated and given serious consideration.

If you are a person with a disability and anticipate needing any type of accommodation in order to participate in this class, please advise me and make appropriate arrangements with Disability Services (293-6700).