West Virginia University
Department of Civil and Environmental Engineering
Course Syllabus

Course:	CEE 415/515 - Flexible Pavements
Semester:	Spring 2018
Course Format And Credit Hours:	3-hours lecture, 3 credit hours
Prerequisite:	CE 310
Instructor:	John Zaniewski
Schedule:	TR 5 – 6:15
Location:	ESB 211
Office Hours:	M-F 1:2
Course Objectives:	During this course we will examine the properties of asphalt binders, aggregates and asphalt-aggregate mixtures. Topics will range from the selection of materials, mix design and characteristics to the construction pavements.
Expected Learning Outcomes:	Upon successful completion of this course, students shall be able to:

1. Understanding of the component materials used in asphalt concrete
2. Able to perform analytical procedures for mix design using Marshall and Superpave mix design methods
3. Knowledgeable of asphalt pavement construction and maintenance
4. Life cycle cost analysis for paving decisions
5. Design a flexible pavement

Required Text: Hot-Mix Asphalt Paving, Handouts, Reading from web and other handouts.

Grading Policy: Grades will be determined based on the percentage of points earned during the semester. Grades will be based on 90%, 80%, 70%... corresponding to A, B, C,.. The instructor reserves the right to curve up, e.g., upwards to a higher grade than earned on this scale.

Midterm	30%
Final	30%
Learning exercises	10%
Projects (2)	30%

Learning exercises are due at the beginning of the class on the date they are due. Late assignments will not be accepted.

There will be two term projects, one on pavement design and one on Mix Design.

Learning exercises and project scores do not count if your average grade for the midterm and final is less than 60%

Attendance Policy: You are expected to attend all classes. If you have a specific problem with attendance, notify the instructor prior to the class, unless the emergency is such that this is not possible. Consistent with University guidelines, students absent from regularly scheduled examinations because of authorized University activities will have the opportunity to take the exam at an alternate time. Make up exams for absences due to other reasons will be at the discretion of the instructor.

Course Schedule

Week	Topic
1	Introduction Overview of Flexible Pavements https://www.fhwa.dot.gov/publications/research/infrastructure/pavements/ltpp/reports/03031/03031.pdf Performance of flexible pavements, Distresses
2	Flexible pavement design http://www.pavementinteractive.org/article/1993-aashto-flexible-pavement-structural-design/
3	Flexible pavement design
4	Asphalt cement Asphalt modifiers Pavement design project due
5	Aggregates
6	**Test** Aggregates
7	Mix design methods Marshall SuperPave
8	Mix design methods Marshall SuperPave
9	Mix design methods Marshall SuperPave
10	Characterization of Asphalt Mixtures Mix design project due
11	Equipment and construction asphalt plants
12	Field operations
13	Contracts and specifications
14	Quality control
15	Pavement maintenance and rehabilitation
16	Pavement Preservation
17	Pavement Preservation Life cycle costs **Final** Exam: per university schedule