

CEEN 6920 - Pavement Material Design

Fall 2026 Syllabus, Section 01, CRN 43003,

Credit hours: 3

Instructor

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Public Instructor Information

Ph.D., Civil & Environmental Engineering, University of Pittsburgh, 2020

B.S., Civil & Environmental Engineering, University of Pittsburgh, 2014

B.A., Mathematics/Engineering, Saint Vincent College, 2013

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Course Description

6920. Pavement Material & Design. Design methods for flexible, rigid and other wheel-supporting pavements to include investigation, testing and preparation of subgrade, base course and pavement materials, design of various pavement mixtures, stresses in pavements, pavement design, and strengthening existing pavements. Prereq.: CEEN 3720 and CEEN 4881. Crosslisted with: CEEN 5820. 3 s.h.

Course Readings

Group	Title	Author	ISBN
Optional	Traffic and Highway Engineering	Garber and Hoel	
Optional	AASHTO Guide for Design of Pavement Structures	AASHTO 1993	

Traffic and Highway Engineering by Garber and Hoel, 5th Edition, or enhanced. Cengage Learning Publication, 2020. (**Recommended**)

The course readings are subject to change in the event of extenuating circumstances, research developments, current events, and/or to ensure better learning.

Tentative Course Schedule (Subject to Change)

Week of	Reading(s)	Proposed Topic	Due/To Prepare for Class
8/24	Course Introduction	Types of Pavements	See Blackboard website
8/31	Week 2	Typical Failure Mechanisms	See Blackboard website
9/7	Week 3	Pavement Materials: Soil Characterization	See Blackboard website Homework 1 due
9/14	Week 4	Pavement Materials: Subbases and Bases	See Blackboard website Homework 2 due
9/21	Week 5	Pavement Materials: Asphalt	See Blackboard website
9/28	Week 6	Pavement Materials: Concrete	See Blackboard website Homework 3 due
10/5	Week 7	Drainage Design Exam 1 Review	See Blackboard website Exam #1
10/12	Week 8	Drainage Design Continued Vehicle and Traffic Considerations	See Blackboard website



10/19	Week 9	Variability and Reliability in Pavement Design Vehicle and Traffic Considerations	See Blackboard website Homework 4 due
10/26	Week 10	Flexible Pavement Design	See Blackboard website Homework 5 due
11/2	Week 11	Rigid Pavement Design	See Blackboard website
11/9	Week 12	Rigid Pavement Design Details Exam 2 Review	See Blackboard website Exam #2 Homework 6 due
11/16	Week 13	AASHTOWare PMED Software	See Blackboard website In-class assignment
11/23	Week 14	Economic Analysis and Pavement Type Selection Thanksgiving Break	See Blackboard website
11/30	Week 15	Course Review	See Blackboard website Homework 7 due
12/7	Week 16	Finals Week - No class	Final Exam: 12/7/2026 @ 10:30am-12:30pm

The course schedule, policies, procedures, and assignments in this course are subject to change in the event of extenuating circumstances, by mutual agreement, and/or to ensure better learning.