

CEE 607
Pavement Design

- Catalog data:** 20-CEE-607. Pavement Design. 3 ug./gr. cr. Stresses and deflections in pavements. Effects on traffic, vehicle loads and climate on design of pavements. Pavement material characterization. Design of flexible and rigid highway pavements. Overlay design.
- Prerequisites:** Strength of materials, soil mechanics, construction materials, and transportation engineering.
- Textbook:** Ioannides, A.M., *CEE 607-Pavement Design: Supplementary Class Notes*, UC, Cincinnati, OH, 1999.
Huang, Y.H., *Pavement Analysis and Design*, Prentice Hall, Inc., Englewood Cliffs, NJ, 1993.
- References:** *American Association of State Highway and Transportation Officials Guide for Design of Pavement Structures*, Washington, D.C., AASHTO, 1993.
- Coordinator:** Dr. Anastasios M. Ioannides, Associate Professor of Civil Engineering, 791 Rhodes Hall, 556-3137, Anastasios.Ioannides@UC.Edu
- Goals:** To teach students the effects of traffic and environment on pavements, the design of flexible and rigid pavements, pavement maintenance strategies, and design of overlays.
- Lecture or lab topics:**
1. Pavement types and design strategies. (2 classes)
 2. Stresses and deflections in pavements. (5 classes)
 3. Vehicle and traffic considerations. (1 class)
 4. Effect of climate and moisture. (1 class)
 5. Subgrades, bases and surface courses. (2 classes)
 6. Design of flexible and rigid highway pavements. (5 classes)
 7. Overlay design. (2 classes)
 8. Tests. (2 classes)
- Computer usage:** Spreadsheet usage as part of at least three extended homework assignments, including: (1) stress distribution in layered media; (2) traffic calculation and conversion to ESALs; and (3) evaluation of pavement design equations.
Word processing, computerized graphing strongly encouraged.
- ABET criterion 3:** a, c, e, f, g, h, j
- ABET criterion 8:** a, d
- Date prepared:** December 09, 2003, Last Update April 25, 2007