

CEE 631

Asphalt Pavement Technology

- Catalog data:** 20-CEE-631. Asphalt Pavement Technology. 3 ug./gr.cr. Production and uses of bituminous materials; measurement and significance of lab properties of asphalt; asphalt mix design; aggregate for asphalt pavements; bituminous base stabilization; quality control.
- Prerequisites:** Strength of materials, soil mechanics, construction materials, and transportation engineering.
- Textbook:** Ioannides, A.M., *CEE 631-Asphalt Pavement Technology: Supplementary Class Notes*, UC, Cincinnati, OH, 2002.
- References:** The Asphalt Institute, *The Asphalt Handbook*, Manual Series No. 4 (MS-4), 1989.
- Coordinator:** Dr. Anastasios M. Ioannides, Associate Professor of Civil Engineering, 791 Rhodes Hall, 556-3137, Anastasios.Ioannides@UC.Edu
- Goals:** To introduce the fundamentals of the engineering response and performance of asphaltic materials, by examining cements and aggregates individually as well as in combination in an asphalt concrete mix. To expose students to current laboratory procedures for determining the engineering properties of bituminous materials, and to familiarize them with practical design applications of the technology within the pavement industry.
- Lecture or lab topics:**
1. History and uses of asphalts; basic concepts. (2 classes)
 2. Bituminous materials production and testing. (4 classes)
 3. Aggregates for bituminous mix design. (4 classes)
 4. Bituminous mix design, incl. additives. (6 classes)
 5. Design of bituminous surface treatments. (4 classes)
 6. Asphalt in pavement maintenance. (4 classes)
 7. Bituminous pavement construction. (3 classes)
 8. Plant visits and guest lecture. (2 classes)
 9. Tests. (2 classes)
- Computer usage:** Computer spreadsheets, word processing, computerized graphing strongly encouraged.
- ABET criterion 3:** a, b, e, f, g, h, i, j, k
- ABET criterion 8:** a, c, e
- Date prepared:** December 09, 2003, Last Update April 25, 2007