

Concrete Pavement Design

An Undergraduate Course

Credits: 3

Prerequisite: Concrete Technology (20208)

Course Syllabus:

- Introduction of pavements (asphalt vs. concrete)
- Major types of concrete pavements and their performance
- Overview of construction technology
- Subgrade, subbase, and drainage
- Brief concrete technology (relevant to conditions the pavement structures are exposed to).
- Major Distresses in PCC Pavements (overview)
- Rigid pavement response analysis
- KENPAVE computer program
- Traffic analysis
- Rigid pavement design (AASHTO, PCA)
- Concrete pavement construction
- Roller-Compacted Concrete (RCC) pavements
- Concrete pavement maintenance (including overlays and inlays)
- Rehabilitation

Grading Policy:

- Assignments – 10%
- Midterm Exam – 30%
- Final Exam – 40%
- Term Project – 20%

References:

- Concrete Pavement Design, Construction, and Performance, N. Delatte, 2008.
- Pavement Analysis and Design, Y. Huang, 2nd Edition, 2002.