### Materials Engineering

### MS and PhD Core Courses in Materials Engineering

A set of four core courses is required for all MS and PhD students in Materials Engineering. The objective of having core courses requirement is to ensure that all graduate students develop common basic technical background. Students may include, at most, one 400 level course in their plan of study.

The core program will consist of:

1. CE53000 Properties of Concrete
2. CE53500 Bituminous Materials
3. CE53800 Experimental methods in Construction Materials Research
4. CE59700 Structure Property Relationships and Behavior of CE Composite Materials
5. One course in statistical data analysis (i.e.: STAT 511, STAT 512, STAT 514)  
   Note: the requirement for the core statistical course can be waived if the student took similar course somewhere else

In addition to these core courses, the students will typically select several elective courses either form the material area or from other areas as deemed necessary based on their plan of study.

The most recent Materials area list of course offerings included:

CE63100 Advanced Concrete and Aggregate

CE59700 Sustainable Binders

CE59700 Advanced Topics in Classical and Computational Solid Mechanics

CE59700 Foundations of Steel Corrosion in Concrete

CE 59700 Fracture Mechanics of Concrete Materials and Structures

CE 59700 Condition Assessments, Repair, and Life-Cycle Analysis for Concrete

In addition, possibilities exist to arrange for “on-demand” courses, i.e.:

CE69700 Cement chemistry

CE59700 Properties of concrete at Early Ages