

**C E 337, Civil Engineering Materials Laboratory**  
(expected to be effective SP2007)

Schedule Estimate:

Below is an estimated schedule of laboratory exercises. The rotational sequences shown below change each week during the semester depending on the group number and week in the semester. Each student will complete all exercises in the rotational sequences. Laboratory instruction and discussion will take part at the start of each laboratory. One on one group discussions with the instructors will take place during the experimental exercises.

| <b>Topic</b> |   | <b>#Weeks</b> |
|--------------|---|---------------|
|              | <b>Part A - Rotational Exercises</b> <ul style="list-style-type: none"> <li>• Time Dependent Deformations and Modulus Measurement (3 hr)</li> <li>• Testing Methods for Steel Reinforcing Bars According to ASTM A370 (3 hr)</li> <li>• Flexural Buckling Characteristics of a Steel Column (3 hr)</li> <li>• Mechanical Properties of Wood (3 hr)</li> <li>• Atterberg Limits in Soils (3 hr)</li> <li>• Permeability Characteristics of Soils (3 hr)</li> </ul> |               |
| II           | <b>Part B – Rotational Exercises</b> <ul style="list-style-type: none"> <li>• Specific Gravity &amp; Absorption Characteristics of Aggregates &amp; Fines (3 hr)</li> <li>• Gradation of Aggregates &amp; Fines (3 hr)</li> <li>• Portland Cement Concrete (3 hr)</li> <li>• Soil Compaction (3 hr)</li> <li>• Consolidation of Clay (3 hr)</li> <li>• Direct Shear Test on Sand (3 hr)</li> <li>• Triaxial and Unconfined Tests in Clay (3 hr)</li> </ul>        |               |

**Evaluation Methods:**

Students in C E 337 will perform a pretest on Angel before entering the laboratory each week. The pretest ensures that all students have read the experimental procedure, lab objectives and safety issues concerned with the lab experiment. Shortly before the laboratory, the instructor will download the results of the pretest and only permit those completing the pretest successfully (7 out of 10) to perform the lab. The pretests (quizzes) consist of 10% of the course grade. Students may retake the pretest multiple times.

Each laboratory experience will result in a laboratory report as detailed in the lab manual. The laboratory reports are concise, factual reports of the test(s) performed, the results and the conclusions. The reports are written in the 3<sup>rd</sup> person and consistent with the reports issued by professional testing laboratories. The lab reports consist of 80% of the course grade.

The final 10% of the course grade consists of a peer evaluation and a leadership score for each student. During each laboratory experience one student in each group of four is designated as the engineering team leader. This leader coordinates the activities of the lab and the resulting report. Each student has three opportunities to lead during the semester. The peer evaluation is a series of questions on the quality and effort of participation of fellow team members.