**LABORATORY I AGGREGATE TESTING Lab: September 29th and October 1st 2014**

**Lab report due: October 6th and 8th 2014**

The following tests will be conducted during the laboratory:

1. Standard Test Method for Bulk Density ("Unit Weight") and Voids in Aggregate.
2. Standard Test Method for Sieve Analysis of Fine Aggregates.
3. Specific Gravity and Absorption of Coarse Aggregates.
4. Fine aggregate angularity – uncompacted air voids

**Test I:** A bulk specific gravity of compacted aggregates will be calculated for one aggregate type as per ASTMC29 or AASHTO T 19 (Experiment # 9) Grey granite 3/8" maximum size. Each group will test two replicates. An oven dry sample will be used for each replicate. The groups will present the data as shown in the Calculation and Report section of ASTM C29 or AASHTO T19.

**Test II:** A sieve analysis of fine aggregates will be conducted on crushed sand as per ASTM C136 or AASHTO T 27(Experiment # 6).
Each group will test one replicate. Follow all the Analysis and Results and Reporting data guidelines of Experiment number 6.

**Test III:** Specific Gravity and Absorption of Coarse Aggregates (ASTM C127/AASHTO T85 - Experiment number 7) of gray granite 3/4" maximum size.
Each group will test two replicates. Follow all the Analysis and Results and Reporting data guidelines of Experiment number 7.

**Test IV:** Calculate the fine aggregate angularity using un-compacted air-voids (AASHTO T304). Each group will test one replicate of sand. Follow all the Analysis and Results and Reporting data guidelines of AASHTO T304.

One of the parameters to be reported:

1. *List the possible errors in obtaining accurate and precise measurements*

2. *List different ways of increasing accuracy and precision in these measurements.*

**Homework # 1** **Due: Same time as lab report.**

***Total 30 points***

*Submit one per group. Some of the homework problems are from last year's exam. Each member of the group should make an effort towards answering **all** the homework problems to ensure proper understanding of the subject matter and eventually good performance in the exams and the course. If any member of the group does not sufficiently contribute, please bring it to the instructor's attention*.

Problems: 5.2, 5.3, 5.6, 5.15, 5.19, 5.20, 5.23, 5.26, 5.27, 5.28. 5.29, 5.30, 5.31, 5.32, 5.33