Assignment 4 is a Team Assignment. This is to be submitted the week after the concrete beam experiment, except for the Load-Deflection plot (due within 44 hours after the experiment.)

1. Submit a 6-page summary (NOTE: Hard copy in class AND electronic copy by email before class) of the following:
   - Team Cover Sheet (1 page; proper format)
   - Summary Text (1 page)
   - Summary Table of Predicted vs. Actual Loads (1 page)
   - Load-Deflection Plot (1 page)
   - Photos, including Test Setup (1 page)
   - Appendix (test log)

2. A) Plot the load-deflection response for your beam using your test data and the template provided on the website. Send the excel template to the instructor within 44 hours after your test with your data neatly plotted. Be sure to zero the load and displacement and use units of kips for load and inches for displacement. B) For your report, add a text box with a short statement/phrase for each major stage of response and place this *on the plot*. State accurately and concisely what physically happened at each stage.

3. Prepare a table of predicted loads vs. actual loads for all key stages.
   - Column 1: Stage of Response
   - Column 2: Predicted Load (kips)
   - Column 3: Actual Load (kips)
   - Column 4: Actual/Predicted Load Ratio

4. Select 3-4 of your best photos displaying the test setup, stages of response, and failure mode.

5. Prepare Text:
   a. Summarize the purpose of test, features of the test specimen, the test setup, and test procedure. Refer to your beam (and others) by the flexural reinforcement ratio, $\rho (=A_s/bd)$, not merely by the number of rebar.
   b. Using your table, briefly explain your pretest predictions: predicted failure mode, load and location.
   c. Using your table, plot, photos, and notes, concisely summarize your beam response from initial load to failure. Compare your predicted loads and failure mode to actual response, highlighting differences and possible reasons for differences. In your summary, directly refer to the tabulated values and the following attachments as well as your notes from test log: your labeled load-deflection plot and labeled pictures.

6. For teams with a ductile failure mode: Calculate and discuss in your summary the displacement ductility, which is defined as maximum deflection/deflection at yield. Maximum deflection should be determined as the deflection just before the load dropped approximately 25%-30%.