

## Ship Structures II Project – Dropped Object/Crumple tests

### Schedule –

Preparation: start now

Final Report Due: Nov. 21

Test Plan due Oct 10.

In groups of ~3 students:

Design, analyze, fabricate, instrument, setup test, do test(s), analyze data, report. Use LS-Dyna to model the test. Use CAD software to prepare models and illustrate your report. Photograph / video record the test. Report is to be 50+ pages.

Conduct a “dropped object” or “crumple” test – for example:

- Drop a [rock, steel rod, steel plate] onto a steel pail.
- Crumple a steel pail in the Tinius-Olsen Press
- You own idea!

Suggestions:

- Multiple tests are good (but keep costs and time down)
- Vary some parameter (physically or in dyna or both)
- Predict behavior prior to test in LS Dyna
- Prepare a test plan including safety precautions, data collection and setup, and discuss with Mr. Matt Curtis (Lab Tech.)
- Submit Test Plan to instructor (on or before Oct 11, prior to testing)
- Conduct test(s) (after plan is approved)
- Update LS Dyna simulation after test (explaining changes)
- Present report with photo/video
- Submit report

Marks: project is worth 20% of the course mark

