Project 7 is the final project of the semester. Two different modal tests will be conducted.

The first involves the modal testing of a composite structure. A complete modal test with one or more references must be performed. The lower order modes of the structure must be extracted; consider extracting 5 or 6 modes.

All data collected and analyses performed should be described in full in the report. The identification of the references used, input excitation used, FRFs (and associated spectra) acquired should all be discussed in detail. The methods used for extraction of modal parameters should be discussed in sufficient detail to substantiate the methods employed. The modal data base should also be validated to substantiate the modal data base extracted.

This final report should address all aspects of the test setup, acquisition of data, analysis and validation of the modal model should be discussed in detail.

This report will also be orally presented at the time it is handed in (actual time TBD).
The second involves the modal testing of a racketball racket.

Vibration reduction devices are commonly used in sporting goods equipment. A modal test is to be performed on a racketball racket to determine the first several frequencies and mode shapes.

A second test is to be performed with vibration absorbing devices installed – determine the new frequencies and mode shapes.

The experimental test must address both the racket and the string interaction. Consider the first several modes of the structure. Compare two frequency response functions and identify any change in the vibration characteristics observed.

This final report should address all aspects of the test setup, acquisition of data, analysis and validation of the modal model should be discussed in detail.

This report will also be orally presented at the time it is handed in (actual time TBD).